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Impact of accounting on reorganization success: empirical evidence from bankrupt SMEs

Michael Kuttner
Institute of Management Control and Consulting, Johannes Kepler University Linz, Linz, Austria and Department of Management Accounting and Finance, Business School, Salzburg University of Applied Sciences, Salzburg, Austria

Stefan Mayr
Institute of Management Control and Consulting, Johannes Kepler University Linz, Linz, Austria

Christine Mitter
Department of Management Accounting and Finance, Business School, Salzburg University of Applied Sciences, Salzburg, Austria and Department of Economics and Finance, University of the Free State, Bloemfontein, South Africa, and

Christine Duller
Institute of Applied Statistics, Johannes Kepler University Linz, Linz, Austria

Abstract

Purpose – Small- and medium-sized enterprises (SMEs) often lack adequate accounting systems and may even fail because of accounting inefficiencies. Indeed, accounting can mitigate the course of a crisis and support a troubled SME's turnaround. Its impact on reorganization success, however, has scarcely been researched so far. Therefore, this paper aims to examine the effects of several accounting parameters, namely, the quality of accounting systems, quality of early warning systems, formal planning, the standard of financial accounting and reorganization planning on the short- and long-term success of court-supervised reorganization.

Design/methodology/approach – The impact of accounting on reorganization success is investigated in a sample of all SME bankruptcy cases with ten or more employees (n = 117) in Upper Austria in 2012 including data for short-term survival (in 2016) and long-term survival (in 2019).

Findings – This study found evidence that the general quality of accounting systems, the quality of early warning systems and written reorganization plans positively influence the outcomes of the analyzed court-supervised reorganizations of SMEs. In particular, the existence of a reorganization plan significantly increases the short- and long-term reorganization success by ensuring the efficient and effective use of resources in the reorganization process.

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Practical implications – This study should increase the awareness of SMEs' owner managers, consultants, creditors and legislators for the importance of accounting in the context of reorganization. The fact that the effect of accounting on reorganization success is less pronounced in the long-term view indicates the necessity of increasing the strategic focus in SMEs' accounting instruments.

Originality/value – This study provides new evidence on the impact of specific accounting parameters on the short- and long-term success of the court-supervised reorganization of SMEs. Furthermore, this study points out the high relevance of reorganization plans for SMEs.

Keywords Small- and medium-sized enterprises (SMEs), Reorganization, Accounting, Planning, Bankruptcy, (Financial) crises

Paper type Research paper

1. Introduction

Small- and medium-sized enterprises (SMEs) form the backbone of the global economy and make significant contributions to the creation and preservation of jobs and the generation of income (Chatterjee *et al.*, 2015; Mbuyisa and Leonard, 2017). SMEs are also highly prevalent within the European Union, and their number is continuously increasing; however, "the number of newborn SMEs markedly exceeds the actual increase in SME population because of the high mortality rate of SMEs, especially among young enterprises" (European Commission, 2018, p. 8). Causes for business failures of SMEs are diverse and include, for example, personal characteristics of the entrepreneur (e.g. qualifications and knowledge) (Filho *et al.*, 2017; Mayr *et al.*, 2020), external conditions (e.g. lack of institutional support) (Franco and Haase, 2010) as well as internal shortcomings (e.g. lack of equity, inadequate staff, insufficient marketing) (Franco and Haase, 2010; Kücher *et al.*, 2020). These internal shortcomings also include inadequate accounting (Rue and Ibrahim, 1998; Perry, 2001; Laitinen, 2011; Kücher *et al.*, 2020).

These causes for business failures of SMEs are often connected to a so-called "liability of smallness" (Freeman *et al.*, 1983), referring to the limited availability of resources (e.g. financial and human resources), leading to greater vulnerability to internal and external events (Eggers, 2020). For instance, SMEs have greater stakeholder dependencies (because of the focus on specific products and niche markets) (Falkner and Hiebl, 2015) and are often unable to take advantage of economies of scale (Lavia López and Hiebl, 2015). Company size also affects accounting (Neubauer *et al.*, 2012; Songini *et al.*, 2013). SMEs are often unable to implement adequate accounting systems because of a lack of resources (Ismail, 2002; Lohr, 2012; Marcelino-Sádaba *et al.*, 2014; Mitter *et al.*, 2020). For instance, SMEs often lack awareness and understanding of the relevance of accounting information (Ismail, 2002), and planning is more *ad hoc* and intuitive than formal (written) (Wang *et al.*, 2007).

Moreover, external and internal events (Eggers, 2020) often lead to crises, which can be solved neither by single nor by *ad hoc* actions (Müller, 1985). Therefore, a structured reorganization process is necessary. Reorganization involves both operational measures for short-term survival and a strategic realignment to overcome the causes of a crisis (Sudarsanam and Lai, 2001). Laitinen (2008, 2009) found evidence that increased planning and control activities within the reorganization process lead to a higher probability of survival. However, there is still little understanding of the impact that accounting has on the reorganization process (Laitinen, 2011). Within this study, we therefore investigate the effects of accounting on the success of reorganization of SMEs. Specifically, we aim to answer the following research question: *Does accounting positively influence the success of the court-supervised reorganization of SMEs?*

Our study is based on recent data involving all bankruptcy cases with ten or more employees in 2012 in Upper Austria, whose sectoral composition is similar to that observed in other European countries (Creditreform, 2012; Kücher *et al.*, 2020). Furthermore, the data set refers to business survival in the short (in 2016) and long term (in 2019) to measure the reorganization success of the 117 SMEs. Hence, our findings add to the SME accounting literature by demonstrating the importance of accounting in court-supervised reorganization. Our findings indicate that accounting (the quality of accounting systems, the quality of early-warning systems, and formal, i.e., written reorganization plans) positively influences the reorganization success of SMEs. Indeed, reorganization plans are essential for reorganization success, as they significantly increase both short- and long-term survival. The reorganization plan is instrumental in determining the use of resources such as financial and human resources in the reorganization process of SMEs. Subsequently, accounting facilitates the management, coordination and reconfiguration of the mostly limited resources of the distressed firm. This ensures an efficient and effective usage and reconfiguration of resources within the reorganization process. Moreover, the quality of accounting impacts the probability of short- and long-term survival of SMEs in bankruptcy. However, our results show that the influence of accounting on long-term survival is less pronounced than on short-term survival. This may be because of the strong operational focus of accounting in SMEs.

We proceed as follows. After the introduction, we explain and define the theoretical background of our study in Section 2. This is followed by the development of the underlying hypotheses in Section 3, which are based on the resource-based view and current accounting and reorganization literature. In Section 4, the methods section, we explain the data collection and provide descriptive information on the sample as well as an overview of the statistical methods applied. Afterward, the results are explained in Section 5 and discussed in Section 6. We conclude with a discussion of the contributions of our study in Section 7.

2. Theoretical background

2.1 Accounting in small- and medium-sized enterprises

Accounting in SMEs differs comprehensively from that in large companies (Lavia López and Hiebl, 2015; Pelz, 2019) and is closely related to the resource-based view (Lohr, 2012; Lavia López and Hiebl, 2015). Following the resource-based view, the development and possession of valuable, rare, hardly imitable and nonsubstitutable resources can lead to a competitive advantage or market position (Barney, 1991; Fahy and Smithee, 1999). According to Barney (1995, p. 50), company resources involve all “financial, physical, human, and organizational assets used by a firm to develop, manufacture, and deliver products or services to its customers.” In the context of our study, we follow this classification and refer to financial (i.e. availability of financial means), physical (e.g. machines, manufacturing facilities) and human resources (e.g. suitable employees, competencies) while investigating their influence on accounting (e.g. planning). SMEs are often unable to implement adequate accounting systems because of resource constraints (Brem *et al.*, 2008; Lohr, 2012; Marcelino-Sádaba *et al.*, 2014; Mitter *et al.*, 2020). In particular, the availability of financial resources represents a frequently discussed barrier for the implementation and usage of accounting in SMEs (Brem *et al.*, 2008; Lavia López and Hiebl, 2015). Moreover, limited human resources are often evident in the lack of suitable employees who can fulfil an accounting function in SMEs (Marriott and Marriott, 2000; Ismail, 2002; Alattar *et al.*, 2009). SMEs often do not have access to specific accounting support, leading to deficiencies in awareness and understanding of the relevance of accounting information (Ismail, 2002). A current literature review by Pelz (2019) indicates that there is often no clear differentiation between financial and management accounting in SMEs and, consequently, we refer to both as accounting.

Within the academic literature, a large number of benefits are discussed as potentially arising from the use of accounting and forming the basis of competitive advantages. For instance, planning can promote the development of young and small businesses (Pelz, 2019) by defining goals and determining tasks and resources (Gruber, 2007; Greene and Hopp, 2017). From a resource-based view, planning enables the estimation of future resource consumption in terms of quantity and value, and thus also the more efficient use of such resources (Brinckmann *et al.*, 2010; Villarmois and Levant, 2011; Mengel and Wouters, 2015). Moreover, planning is essential in managing scarce resources, identifying resource bottlenecks and meeting resource needs in a goal-oriented and efficient manner (Brinckmann *et al.*, 2010; Mengel and Wouters, 2015). Delmar and Shane (2004) found evidence that planning (i.e. business plans) is advantageous for the survivability of new ventures. Planning also has a positive effect on the decision-making speed (Pelz, 2019) by fostering managerial anticipation and reducing information asymmetries (Delmar and Shane, 2003; Brinckmann *et al.*, 2010). Likewise, accounting in general positively influences decision-making in SMEs by providing an improved information base (Lavia López and Hiebl, 2015). This enables management to react more quickly to internal and external threats (e.g. a lack of liquidity or high competition) and can therefore increase the adaptability of SMEs (Perren and Grant, 2000; Laurinkevičiūtė and Stasiškienė, 2011; Lavia López and Hiebl, 2015). Consequently, the speed of action can be a significant factor in gaining a competitive advantage (Yang and Meyer, 2015). Through accounting, scare resources are managed, coordinated, and controlled. Consequently, accounting can also help to overcome resource constraints (Lavia López and Hiebl, 2015).

Although SMEs' need for information is increasing and accounting makes a significant contribution to supporting decision-making, accounting is generally used to a lesser extent in SMEs than in large companies (Lavia López and Hiebl, 2015). The limited availability of resources not only affects the implementation and use of accounting (Neubauer *et al.*, 2012; Songini *et al.*, 2013; Mitter *et al.*, 2020) but also influences the vulnerability of SMEs, which is discussed in the next section.

2.2 Vulnerability of small- and medium-sized enterprises

Given their limited resource base, smaller companies are usually correspondingly more vulnerable to internal and external events (Eggers, 2020). These events often result in crises, "a low-probability, high impact event that threatens the viability of the organisation and is characterised by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly" (Pearson and Clair, 1998, p. 60). Crises (especially financial crises) may threaten the survivability of organizations (Pearson and Clair, 1998; Schmitt *et al.*, 2010).

Crises often exacerbate resource constraints in SMEs – customers buy less, investors are more reluctant and liquidity problems arise (Eggers, 2020). Resource constraints generally have a stronger impact on SMEs than on large companies (Marriott and Marriott, 2000). In addition, the environment of SMEs differs significantly from that of large companies (Garengo *et al.*, 2005; Heinicke, 2018). SMEs are more often exposed to greater uncertainty (Hudson *et al.*, 2001; Garengo *et al.*, 2005) and often operate in restricted markets with a small base of customers (Hudson *et al.*, 2001). Because of their limited resource bases, SMEs often have to specialize in specific products and niches, resulting in a limited number of customers and suppliers, which can lead to great dependence on these stakeholders (Falkner and Hiebl, 2015; Mitter *et al.*, 2020). Furthermore, SMEs are less able to take advantage of economies of scale (Lavia López and Hiebl, 2015).

2.3 Role of accounting in the reorganization of small- and medium-sized enterprises

Reorganization can be defined as a process in which extensive changes need to be made to the structure of a company (Laitinen, 2011). According to the capability lifecycle model (Helfat and Peteraf, 2003), internal or external factors (called a "selection event"; for example, a financial crisis) can have a sufficiently strong impact that alters the current development of capabilities. Furthermore, the impacts that external selection events have on organizations depend on internal firm reactions at all levels. In a financial crisis, there is a broad range of possible actions. For instance, companies can take out new loans, reduce costs, sell unneeded assets or renegotiate payment terms with suppliers.

Regarding specific forms of reorganization, companies can reorganize out-of-court (workout, informal proceedings or out-of-court settlements) or undergo a court-supervised procedure (Gilson, 1991). While court-supervised reorganizations or formal proceedings use the bankruptcy law framework to remedy a firm's financial distress, out-of-court reorganizations aim to solve the distress in consultation with creditors outside of bankruptcy proceedings and thus serve as an alternative to legal proceedings. The aim of both reorganization forms is to prepare, present and agree on a reorganization strategy with creditors.

Reorganizing a firm in distress requires the reconfiguration and extension of financial and nonfinancial resources (Thornhill and Amit, 2003). The healthy resource core still available forms the basis of a company's turnaround strategy, which involves the transformation of capabilities and resources (Helfat and Peteraf, 2003) to suit market needs and regain competitiveness. Hence, it is crucial to identify and analyze the healthy core of resources as well as the new resources, which have to be provided for, reconfigured and developed during reorganization (Mayr and Mitter, 2015). Moreover, reorganization involves balancing and synchronizing measures, such as divestments and rebundling or retrenchment and recovery actions (Trahms *et al.*, 2013). Accounting can support this process. First, providing a sound information base (Lavia López and Hiebl, 2015) helps to identify the resources that are still valuable as well as the needs of resource reconfiguration and development.

Second, accounting helps synchronize, prioritize and stimulate various actions of resource reorientation, as it anticipates the effects of reorganization measures, thereby highlighting future resource requirements and resource bottlenecks (Brinckmann *et al.*, 2010; Mengel and Wouters, 2015) as well as critical and conflicting targets.

The outcome of these accounting efforts culminates in the reorganization plan. Moreover, already having a business plan and experience in operational planning and thus having existing planning resources is highly relevant for the preparation and presentation of a reorganization plan (Mayr and Lixl, 2019). An increased focus on planning and control within the reorganization plan can lead to a higher probability of survival (Laitinen, 2008, 2009).

Prior empirical findings confirm the importance of accounting (i.e. planning) in preventing business failures. One of the few existing studies, conducted by Perry (2001), tested a data set of small US companies with fewer than 500 employees and found a statistically significant relationship between planning and SME failure. Van Gelder *et al.* (2007) examined the differences between existing and failed small companies and showed that failed entrepreneurs are less likely to use planning and more likely to use reactive strategies; they are thus driven by the situation, while planning and proactively influencing the situation are of secondary importance.

Laitinen (2011) surveyed 98 reorganizing Finnish SMEs and conducted a quantitative study to examine the different effects (e.g. financial reorganization and changes in accounting systems) on performance. The results confirm a positive relationship between accounting change and performance. In detail, reorganizing SMEs invest more in planning and control. Even if these measures are often simple (e.g. cost accounting or profitability analyses) and informal, they have high strategic relevance (Laitinen, 2011). In a later study based on a sample of 80 Finish microcompanies, Laitinen (2013) examined the relevance of financial and nonfinancial variables in the reorganization process to predict survival or failure. Among other things, the relationship between efficiency-oriented measures, i.e. investments in marketing and the improvement of planning systems, and business failure/survival was investigated. The results confirm a higher probability of survival or a lower failure rate when the company prioritizes efficiency-oriented reorganization measures (Laitinen, 2013).

3. Hypotheses development

Given that optimizing accounting can mitigate the course of crises and prevent companies from experiencing performance deterioration, distressed companies often show a high demand for adequate accounting systems. Simultaneously, especially in SMEs, the use of accounting systems is not a matter of course because of the lack of resources (see Section 2.1).

Accounting systems, as part of the reorganization process of SMEs, provide additional information and improve the planning and control process itself (Laitinen, 2011). Resources spent on forecasting and time are minimized, which again has a positive impact on efficiency (Laitinen, 2011; Lavia López and Hiebl, 2015). Regardless of the cause of the crisis, efficiency-oriented reorganization measures are essential for any successful reorganization (Robbins and Pearce, 1992). Laitinen (2011) confirms that reorganization in SMEs often fails as a consequence of inefficient accounting. Therefore, it can be assumed that higher quality of the accounting system leads to an improved utilization of its benefits. From a resource perspective, these benefits (within the reorganization process) include a more effective and efficient use of resources and enable the goal-oriented rebundling and reconfiguration of resources (see Section 2.3). Moreover, distressed firms should invest in accounting systems during the reorganization period, as the presence of improved systems is positively linked to performance (Lavia López and Hiebl, 2015) and successful restructuring (Laitinen, 2011). Therefore, we assume that the quality of accounting systems of SMEs is positively related to overcoming crises:

H1. There is a positive relationship between a higher quality of accounting systems of SMEs and the success of reorganization.

Financial and economic difficulties are often caused by neglected planning and lack of control (Perry, 2001; van Gelder *et al.*, 2007; Mayr *et al.*, 2020). Accordingly, reorganizing SMEs should intensify their investments in planning and control (Laitinen, 2011). Although planning and control are often simple and informal in SMEs, they are highly relevant to strategic planning and realignment. While planning in SMEs is more *ad hoc* and intuitive than formal (written) (Wang *et al.*, 2007), the process of (formal) planning itself has a positive effect, as it leads to an improved understanding of the business (Kraus *et al.*, 2007), which is a necessary precondition for reorganization and overcoming financial crises (Mayr *et al.*, 2017). Formal planning is closely related to a clear estimation, evaluation and allocation of financial, human and production resources. The goal-oriented utilization and reconfiguration of the available resources is a prerequisite for successful reorganization. In addition, formal plans have a higher degree of obligation. Moreover, planning helps to anticipate negative events and allows ready-made backup plans in case something goes wrong (van Gelder *et al.*, 2007). In line with the aforementioned arguments, we postulate the following hypothesis:

H2. There is a positive relationship between the formal planning of SMEs and the success of reorganization.

The limited availability of resources in SMEs also affects risk management (a subarea of accounting). Many SMEs therefore apply no or improper risk management practices (Marcelino-Sádaba *et al.*, 2014; Ferreira de Araújo Lima *et al.*, 2020). This limited risk management subsequently impairs crisis preparedness (Faghfouri *et al.*, 2015). Adequate risk management (particularly the early identification of risks) is crucial to the survival of companies (Verbano and Venturini, 2013; Falkner and Hiebl, 2015; Ferreira de Araújo Lima *et al.*, 2020). Early identification of risks enables an efficient use of resources to counteract them (Hollman and Mohammad-Zadeh, 1984) and the possibility of exploiting potential opportunities (Brustbauer, 2016). Accordingly, risk management enables a fast response to threats and opportunities and can therefore increase the adaptability of SMEs (see Section 2.3). Hence, we argue that the higher the quality of an early warning system, the earlier bankruptcy proceedings and reorganization measures will be initiated, which in turn increases the chances of overcoming the crisis. Based on these considerations, we formulate the following hypothesis:

H3. There is a positive relationship between the quality of early warning systems of SMEs and the success of reorganization.

The formal rules and standards of financial accounting for small sole proprietorships and partnerships are very simple in many countries across the world (European Commission, 2013). Revenue expenditure accounts, as the most widespread accounting standard of SMEs in the form of sole proprietorships and partnerships, make it difficult to financially manage such companies. Based on these figures, it is also difficult to implement any type of management control. For corporations, double entry accounting and other formal requirements for accounting, such as stock valuation at least once a year, are obligatory. The periodic valuation of stock allows the determination of exact contribution margins, which are crucial to the management of a company, and the calculation of products and/or profit centers (Friedl *et al.*, 2005). The Companies Act ("Unternehmensgesetzbuch"*)* in Austria also stipulates different standards of financial accounting depending on the legal form and/or the size of the company. The regulations for corporations also require them to establish an internal control system.

In the context of financial crises, both detection and reaction are of key importance. For instance, there is a focus on identifying critical problem areas that require immediate action to stabilize the situation (Adriaanse and Kuijl, 2006). Accordingly, it is important to base decisions for successful reorganization on solid accounting information. From a resource-based perspective, higher accounting standards allow for better documentation and increased transparency of past resource utilization as well as greater predictability of future resource requirements. This leads to the following hypothesis:

H4. There is a positive relationship between a higher standard of financial accounting systems of SMEs and the success of reorganization.

The reorganization plan plays a central role in both formal (Laitinen, 2011; Gilson, 2012) and informal proceedings (Jacobs *et al.*, 2012). During the reorganization process, the reorganization plan is continuously adapted. From a resource-based view, the reorganization plan contains considerations about resources and capabilities available or to be provided and developed for the continued existence of the company. In detail, the usage of existing resources (e.g. financial and human resources) is outlined within the reorganization plan to ensure the best possible resource utilization in the reorganization process. The reorganization plan contains a discussion and documentation of financial and business strategies as well as operational measures of reorganization (Adriaanse and Kuijl, 2006). Based on an analysis of the causes of a crisis, the reorganization plan provides the "golden thread" in the sense of a business plan through the entire reorganization process.

Furthermore, the reorganization plan is an essential instrument for communication and negotiation between a distressed firm and its stakeholders, in particular creditors (D'Aveni and MacMillan, 1990). Credible documentation of the company's ability to continue as a going concern represents an essential basis for decision-making by creditors. A reliable reorganization plan should convince creditors that the troubled business is capable of reorganization (Philippe and Partners and Deloitte and Touche, Corporate Finance, 2002) and makes creditors' approval more likely (Gilson, 2012).

From an accounting perspective, the subject matters of a reorganization plan include the calculation of the effects of the proposed measures as well as cash flow projections in the short and long term (Adriaanse and Kuijl, 2006). It must be ensured that future payment obligations can be met.

In Austria, court-supervised reorganizations require the submission of a payment plan that specifies how the recovery rates (which must meet or exceed the minimum recovery rates) are to be paid within two years (for further details on bankruptcy proceedings in Austria, see also Appendix 1). Consequently, the reorganization plan far exceeds the payment plan that is legally required. It is much more comprehensive and specifies the turnaround actions and measures and thus the resources and their reconfiguration that are essential for a successful reorganization process and the continued existence of the company.

Empirical findings confirm a linkage between the preparation of reorganization plans and the survivability of SMEs (van Gelder *et al.*, 2007; Laitinen, 2013). A written reorganization plan evidently has a positive effect on the continued existence of a company. Reorganization strategies and detailed operational planning enable the evaluation of the viability and success of corporate reorganization. The more closely the reorganization plan is followed, the greater the positive effects of the reorganization measures are on the performance (Laitinen, 2011). Hence, we assume that the existence of a reorganization plan in SMEs helps overcome financial crises:

H5. There is a positive relationship between the existence of a reorganization plan in SMEs and the success of reorganization.

Based on the hypotheses introduced above, our research model is presented in Figure 1.

4. Data and methodology

4.1 Research design and sample

To analyze and empirically test the impact of accounting on the success of reorganizations, this paper uses a data set of Upper Austrian corporate bankruptcies in 2012. We did not conduct our study using questionnaires as in previous studies (Laitinen, 2011), which means that only a subsample of the companies concerned is available for the empirical analysis. In contrast, we examine a data source originating from the reports of bankruptcy trustees, information from commercial registers and additional insights from two experts of a credit

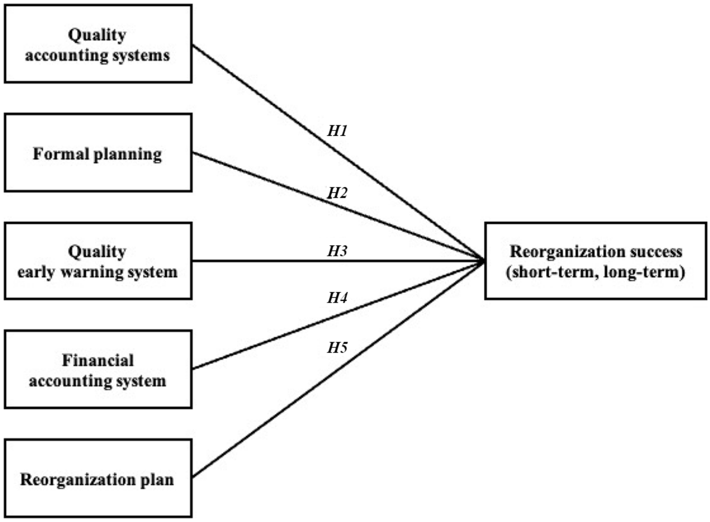

Figure 1.
Hypotheses testing model

reference agency who are familiar with these cases. This allowed us to collect a sample of all bankrupt SMEs using an objective methodological approach. While surveys with the affected employees and managers are strongly influenced by subjectivity and the negative experiences from the financial crisis (Perry, 2001; Shepherd, 2003), the analysis of reports, company register information and the involvement of not directly affected experts offers a much more objective approach (Table 1 provides information about the data sources of each investigated variable).

The data was collected between January 2015 and December 2019 in two separate steps (short- and long-term survival). Certain information on bankruptcy cases (e.g. outcome, duration and recovery rate) could only be obtained after a specific period of time. The validity of the data with regard to the analyzed accounting systems was guaranteed by means of a review of court documents and a classification by at least two researchers. Experts at the credit reference agency who granted us access to the relevant documents assisted us in reviewing information and provided further case-related information. To gain in-depth insight into the success of reorganization, we decided to analyze both the short-term survival (in 2016) and long-term survival (in 2019) of the bankrupt companies. Table 1 contains detailed information on the data sources, categories and frequencies of each variable.

Of our total sample, we only analyze SMEs according to the European Union definition (European Commission, 2003) with at least 10, but at the most 249, employees. We excluded microenterprises as we were not able to assess the accounting variables in the context of these companies. Thus, we ensured a comprehensive data set for the federal state of Upper Austria, which is representative of all of Austria with regard to industries and other bankruptcy-specific matters. This results in a sample size of $n = 117$.

Because of our study's focus on Austria, we briefly summarize the specifics of bankruptcy proceedings in Austria. Reorganization in Austria can take place in one of two proceedings, i.e. the "Konkursverfahren" and the "Sanierungsverfahren." The reorganization-oriented "Sanierungsverfahren" offers the possibility to retain self-administration; otherwise the court appoints a bankruptcy trustee who takes control of the ailing company. The payment plan plays a decisive role in reorganization. It specifies the

Variables	Data source(s)	Categories	Frequencies Absolute	Relative (%)
Short-term reorganization success	Continued existence verified by commercial, and/or trade register and/or court documents in 2016	No Yes	84 33	71.8 28.2
Long-term reorganization success	Continued existence verified by commercial and/or trade register and/or firm status (retrieved from the Austrian credit reference agency "Kreditschutzverband von 1870")	No Yes	92 25	78.6 21.4
Quality accounting systems	Assessment, based on the reports of the bankruptcy trustees and/or court documents and/or internal documents of the credit reference agency	Poor Medium Good	38 46 33	32.5 39.3 28.2
Formal planning	Assessment, based on the reports of the bankruptcy trustees and/or court documents and/or internal documents of the credit reference agency	No Yes	83 34	70.9 29.1
Quality early warning system	Assessment of the opening date of the legal proceedings, based on the reports of the bankruptcy trustees and/or court documents and/or internal documents of the credit reference agency	Poor Medium Good	62 46 9	53.0 39.3 7.7
Financial accounting system	Standard of financial accounting verified by the review of court documents and/or internal documents of the credit reference agency	Simple Advanced	21 96	17.9 82.1
Reorganization plan	Assessment, based on the reports of the bankruptcy trustees and/or court documents and/or internal documents of the credit reference agency	No Yes	84 33	71.8 28.2

Table 1. Descriptives (n = 117)

required recovery rate to unsecured creditors that has to be paid within two years. The affected creditors vote on the plan, which is approved if a simple majority in number and value are in favor of the plan. If the plan is not accepted, the company may either be sold as a going concern (in this case, a rescue company is created) or piecemeal. Hence, the ailing company may survive bankruptcy and thus reorganize either as the existing company or with the help of a rescue company (for further details on bankruptcy proceedings in Austria, see also Appendix 1).

4.2 Variables

Short- and long-term reorganization success refers to a successful reorganization that was verified with the continued existence of the SME in 2016 and 2019, either as the existing company or with the help of a rescue company. Short- and long-term reorganization success are measured as dichotomous variables with the values yes (i.e. continued existence) and no.

The quality of the accounting systems is based on an assessment of the expert at the credit reference agency and is measured as an ordinal variable with the categories poor, medium and good. The variable formal planning refers to the design of planning within the SMEs from a formal perspective (e.g. written) and is measured as a dichotomous variable with the values yes and no.

The quality of an early warning system is operationalized by the opening date of bankruptcy. A late opening date is classified as a poor early warning system, a medium opening date classified as a medium early warning system and an early opening date is classified as a good early warning system. Hence, the quality of an early warning system is an ordinal variable with the three categories mentioned above.

The financial accounting system variable differs between simple (revenue expenditure accounts) and more advanced (double entry accounting and additional requirements) accounting. The variable reorganization plan determines whether the SME presented a written reorganization plan. Thus, financial accounting system as well as reorganization plan are dichotomous variables, the former with the values simple and advanced, the latter with the values yes and no.

All variables are single-item variables, measured either in ordinal (quality of accounting systems, quality of an early warning system) or in dichotomous/binary form (reorganization success, formal planning, financial accounting system and reorganization plan).

Table 1 presents some descriptive results for the analyzed variables, starting with the two outcomes of short- and long-term success. The data shows a 28.2% proportion for short-term success (33 of 117 cases) and a 21.4% proportion for long-term success in reorganization. The remaining variables in the table are ordered according to the stated hypotheses. The quality of accounting systems is measured with three categories, which appear approximately equally often (32.5% poor, 39.3% medium and 28.2% good). Formal planning is a dichotomous variable, and the vast majority (83 of 117 cases, 70.9%) of the cases does not rely on formal planning. The quality of an early warning system is measured in relation to the quality of accounting systems, and a late warning indicates poor quality. Concerning the distribution of this variable, the majority of all cases (62 of 117 cases, 53%) has a poor early warning system quality, and only a rather small minority (7.7%) has a good one. The financial accounting systems are either more advanced (double entry accounting and additional requirements, 82.1%) or simple (revenue expenditure accounts, 17.9%). More than two-thirds of the enterprises did not have a written reorganization plan (84 of 117 cases, 71.8%).

5. Results

Bivariate analyses provided the first insight into the correlations between the different aspects of accounting and the success of reorganization, and the results are given in Table 2. In detail, bivariate analyses show that the general quality of an accounting system, the

			p-Value (one-sided)	
Hypothesis	Variables	Method	**Short-term success**	**Long-term success**
H1	Quality accounting systems	Point biserial Spearman correlation	0.000***	0.004***
H2	Formal planning	Fisher's exact test one-sided	0.095*	0.266
H3	Quality early warning system	Point biserial Spearman correlation	0.000***	0.026**
H4	Financial accounting system	Fisher's exact test one-sided	0.370	0.518
H5	Reorganization plan	Fisher's exact test one-sided	0.000***	0.000***

Notes: Significance levels: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 2.
Bivariate results

quality of an early warning system and a written reorganization plan positively influence the outcome of the analyzed court-supervised reorganizations of SMEs. An additional multivariate perspective verifies that in particular, the existence of a reorganization plan significantly increases the short- and long-term reorganization success of SMEs. According to the requirements, the bivariate method was either a Fisher's exact test in the case of two dichotomous variables or a point biserial rank correlation (Spearman) in the case of one dichotomous and one ordinal variable.

The calculated one-sided p-values in Table 2 show a significant influence of the quality of accounting systems on short-term and long-term success. There is a significant positive relationship between the quality of the accounting systems of SMEs and the success of reorganization. For the poor-quality accounting systems, the proportion of short-term success is 10.5%, which is much lower than the proportion for medium- (30.4%) or good-quality (45.5%) accounting systems. For long-term success, we found a significantly positive correlation ($p = 0.004$); therefore, *H1* is fully confirmed.

Both formal planning and a higher standard of financial accounting systems of SMEs do not have a significant influence on short- or long-term success; hence, *H2* and *H4* are rejected.

The quality of an early warning system has a significant influence on short- and long-term success in reorganization. A poor-quality early warning system means that cases with late warnings have a short-term success rate of 14.5% compared with 41.3% for medium-quality and 55.6% for good-quality early warning systems ($p = 0.000$). Although the results for long-term success have a higher p-value ($p = 0.026$), the success rates within the categories of quality show the same trend as for short-term success (good 33.3%, medium 28.3% and poor 14.5%). Therefore, *H3* is confirmed.

The most impressive influence is that of a written reorganization plan. Having a reorganization plan increases the success rate from 13.1% to 66.7% in the short term and from 10.7% to 48.5% in the long term. Based on these two significant results ($p = 0.000$), *H5* is fully confirmed.

For multivariate analyses, a logistic regression for each outcome (short- and long-term success) was calculated, due to the binary measurement level of the outcome variables. Correlation analysis of independent variables (quality of accounting systems, quality of an early warning system, formal planning, financial accounting system and reorganization plan) showed only moderate correlation. According to the requirements, correlation was calculated either as Spearman rank correlation (two ordinal variables), point biserial Spearman rank correlation (one binary and one ordinal variable) or association measure Phi (two binary variables). The highest absolute correlation had a value of 0.446, showing a moderate correlation between the quality of an accounting system and formal planning (see Appendix 2).

Table 3 shows the full models. Using stepwise variable selection in logistic regression models, we obtained the two final models, which are also shown in the table. The ordinal variables quality of accounting systems and quality of an early warning system are dichotomized, because of the requirements of a logistic regression model. For both variables, the category "poor" was fixed as reference category. As expected, the highest impact is evident for a written reorganization plan, which leads to more than nearly 13 times the odds of short-term success and to nearly eight times the odds for long-term success. The quality of an early warning system has an impact on the short-term success of reorganization but is less important from a long-term perspective.

The quality of accounting systems is part of the final model for short-term success but has a smaller impact than the reorganization plan; for the long-term view, it is not part of the final model at all.

Variables	Categories	Short-term success Exp (b)	Short-term success p-Value	Long-term success Exp (b)	Long-term success p-Value
Full Model					
Quality accounting systems	*Poor (r.c.)*		0.131		0.210
	Medium	2.221	0.305	1.377	0.669
	Good	5.256	0.051*	3.375	0.122
Formal planning	*Yes*	0.412	0.169	0.429	0.178
Quality early warning system	*Poor (r.c.)*		0.078*		0.527
	Medium	3.832	0.026**	1.896	0.271
	Good	2.789	0.277	1.149	0.880
Financial accounting system	*Advanced*	0.452	0.273	1.034	0.963
Reorganization plan	*Yes*	13.941	0.000***	7.988	0.000***
Constant		0.076	0.002***	0.065	0.001***
Model fit					
Cox and Snell pseudo-R^2		0.319		0.185	
Nagelkerke's pseudo-R^2		0.458		0.287	
Final Model					
Quality accounting systems		Not included		Not included	
Formal planning		Not included		Not included	
Quality early warning system	*Poor (r.c.)*		0.028**	Not included	
	Medium	4.209	0.009***		
	Good	3.181	0.197		
Financial accounting system		Not included		Not included	
Reorganization plan	*Yes*	12.679	0.000***	7.843	0.000***
Constant		0.071	0.000***	0.120	0.000***
Model fit					
Cox and Snell pseudo-R^2		0.288		0.146	
Nagelkerke's pseudo-R^2		0.413		0.226	

Notes: Significance levels: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$ r.c. = reference class

Table 3.
Regression models

6. Discussion

The purpose of this paper is to examine the impact of accounting systems on the success of reorganization. Building on the resource-based view, we analyze the effect of different independent accounting variables on the short- and long-term success of court-supervised reorganization. Reorganization success in this context is defined as surviving after the reorganization procedure or remaining active with the help of a rescue company. Approximately 28% of the companies analyzed were able to survive in the short term, and approximately 21% were able to survive in the long term. While short-term survival in our study represents short-term operational turnaround success, long-term survival is more strongly driven by strategic aspects, such as the realignment of the company and business models (Sudarsanam and Lai, 2001). In contrast to an earlier study by Laitinen (2011), we collected a sample of all SMEs with more than ten employees in a defined period and regional setting. Moreover, we examine the influence of concrete accounting parameters, including the reorganization plan as the central accounting instrument in the reorganization on survival or reorganization success.

Hence, drawing on a sample of bankrupt Austrian SMEs, we follow Laitinen's (2011) call for more research on the impact of accounting on reorganization success. Our findings show that, based on bivariate analyses, the general quality of the accounting systems is important for both short- and long-term success in reorganization. Formal, written planning, which is applied in approximately 30% of the companies studied, has no significant influence on survival. Although there is prior empirical evidence that the preparation of plans reduces the likelihood of failure (Perry, 2001; Rue and Ibrahim, 1998), the usage or design of accounting (i.e. planning) before a company was turned around does not play a major role in our analysis. This may be because a large part of the SMEs studied are managed very intuitively because of the low level of resources in terms of financial stock and human capabilities. This lack of financial and human resources for an efficient and effective usage or design of accounting in SME is in line with results of previous studies (Alattar *et al.*, 2009; Marcelino-Sádaba *et al.*, 2014; Mitter *et al.*, 2020).

Our study also shows that the quality of the early warning system is particularly important for short-term survival: the earlier a crisis is recognized and responded to, the more likely the bankrupt company is to survive in the short term. These results reflect the previous findings on the high relevance of early risk identification for entrepreneurial survival (Verbano and Venturini, 2013; Falkner and Hiebl, 2015; Ferreira de Araújo Lima *et al.*, 2020). In addition, early identification of potential risks enables the early deployment of resources for targeted countermeasures (Hollman and Mohammad-Zadeh, 1984). In the long term, this effect is no longer significant in the regression analyses, which indicates that early warning systems work operationally and in the short term, but do not guarantee that the strategic and long-term realignment of the company after a crisis will be successful.

The standard of financial accounting (revenue expenditure accounts versus double entry accounting) does not have a significant impact on the survival of the analyzed companies: contrary to expectations, the comparatively small group of approximately 18% of SMEs with revenue expenditure accounts is not less likely to survive in the short or long term. One possible explanation may be that the legally statutory accounting instruments (annual financial statements for double-entry accounting and implementation of an internal control system) do not have the effect on internal control intended by the legislator. SMEs often use external consultants (e.g. bookkeepers) to prepare their accounts and annual financial statements. This decouples financial and management accounting and decreases awareness of the relevance of accounting information (Ismail, 2002). Moreover, financial accounting reports are often drawn up with an enormous time lag. Consequently, the information of these reports may come too late for the timely management of the reorganization. Our findings thus indicate that the potential of higher financial accounting standards for the efficient and effective usage of resources is not fully seized in the reorganization process.

The reorganization plan, however, significantly increases the probability of both short- and long-term survival. This study thus confirms Laitinen's (2011) findings that reorganizing SMEs need to increase their efforts in both planning and control during their reorganization process. The reorganization plan fulfils two central tasks. First, a reorganization plan serves as a confidence-building measure for creditors, whose approval becomes more likely (Gilson, 2012). The preparation and submission of a plan proves that the owner has reflected on the company's situation, learned from the mistakes that led to failure and is fully committed to the turnaround. Second, the plan facilitates the management and control of the reorganization process. Hence, the reorganization plan, makes a significant contribution to the efficient and effective use of resources in the restructuring of SMEs (Adriaanse and Kuijl, 2006) by ensuring timely identification, development and reconfiguration of the resources necessary for turnaround. In terms of court-supervised reorganization, our results also corroborate the findings of prior research regarding the importance of communicating with creditors in out-of-court restructuring (Mayr *et al.*, 2020).

The central finding of the paper is that the quality of accounting in general and the reorganization plan in particular influence the probability of the short- and long-term survival of SMEs in bankruptcy. The fact that accounting's effect is less pronounced in the long-term view, where strategic aspects become more important (strategic realignment), illustrates that accounting in SMEs has a very strong operational focus (Neubauer *et al.*, 2012; Speckbacher and Wentges, 2012). This study thus illustrates the necessary differentiation between a short-term and operational view of a reorganization and the long-term and strategic perspective, which is underdeveloped and therefore very challenging in many SMEs. A financial crisis, like other triggering events such as internationalization (Marc *et al.*, 2010), can therefore be used to further develop and strengthen accounting and use more sophisticated management tools to ensure that the main business objective follows a strategic plan (Reid and Smith, 2000). SMEs must ensure or increase the strategic focus in their accounting instruments, especially to manage, coordinate and reconfigure the resource allocation in the long term to guarantee sustainable reorganization and to be successful in the future.

7. Conclusion and implications

The present study is based on a unique data set and investigates the impact of accounting on reorganization success at different points in time. It contributes to the current SME accounting literature in multiple ways: While the causes of SME failure have been studied (Filho *et al.*, 2017; Kücher *et al.*, 2020; Mayr *et al.*, 2020), little is known about what happens after bankruptcy (e.g. reorganization) (Laitinen, 2011). We demonstrate the importance of accounting in the (court-supervised) reorganization by providing new findings. In detail, our study shows that reorganization success in SMEs is strongly influenced by accounting. The general quality of accounting systems, the quality of an early warning system and the existence of a written reorganization plan positively influence the outcome of the analyzed court-supervised reorganizations. In times of an increasing threat from the current COVID-19 pandemic and an expected increasing need for restructuring in SMEs (Wenzel *et al.*, 2020), our accounting-related findings are crucial for the planning and successful implementation of reorganization. The descriptive analysis of our sample shows that the accounting aspects relevant to reorganization are poorly developed: only approximately 28% of the companies analyzed have high-quality accounting systems or a reorganization plan. Only approximately 8% of SMEs have a good early warning system. Furthermore, the reorganization plan plays a central role in the reorganization process. According to our regression analysis, a written reorganization plan increases the odds of short-term reorganization by a factor of approximately 13 and the odds of long-term reorganization by a factor of approximately 8. From a resource-based perspective, planning, in particular the reorganization plan, makes a significant contribution to the efficient and effective use of resources in SMEs during the reorganization process (Adriaanse and Kuijl, 2006). In addition, the low long-term orientation of accounting (e.g. planning) indicates the need for a stronger strategic orientation in SMEs, especially because the use of accounting promotes the integration of a company's strategic direction with its operational activities (Manville, 2007). Moreover, SMEs focusing on strategic planning are less likely to fail (Gaskill *et al.*, 1993; Perry, 2001).

Moreover, our results contribute to and foster the understanding of accounting and accounting-related reorganization in SMEs. Complementing Laitinen's (2011) study, we provide implications for owner-managers of SMEs, consultants, creditors and legislators. For instance, we show the high relevance of early warning and planning systems in general and in the context of a reorganization in particular. Hence, by increasing the awareness of these accounting systems, failures may be prevented ex ante or better solved ex post.

As the options for action in restructuring are often severely limited, and the introduction of new accounting systems is ruled out by resource constraints (e.g. time), it is decisive to introduce practicable accounting instruments for SMEs long before a crisis. External consultants can help introduce cost-effective and easy-to-use instruments. During the reorganization process, they can compensate for resource deficits and support the review of the company's ability to restructure and, subsequently, the preparation of a reorganization concept. Given the crucial role of a written reorganization plan in successful reorganization, banks and creditors in general should insist on the submission of a written reorganization plan when deciding whether or not to consent to a reorganization. As our study shows, court-supervised reorganizations are, in practice, approved even without a sound written concept.

Even if more advanced financial accounting standards do not have a direct impact on reorganization success, as indicated by our findings, it is important to create or further develop legal regulations for SMEs to ensure that an appropriate minimum quality of accounting is in place. In addition, incentives and/or obligations should be created to implement early warning and planning systems in SMEs. As our findings show, the reorganization plan needs to be much more firmly embedded in the legal basis for reorganization, both formal and out-of-court, as the European Commission's directive on preventive restructuring frameworks suggests (European Commission, 2019).

However, the results of the present study are not without limitations. Because of the Austrian focus of the analyzed data, the results are subject to national conditions, such as the corporate landscape in Austria (e.g. company size and industry structure), regulatory specifics (e.g. the standard of financial accounting, bankruptcy law) and the prevailing understanding of accounting. Accordingly, studies examining other countries or regions might reach different conclusions.

References

Adriaanse, J. and Kuijl, H. (2006), "Resolving financial distress: informal reorganization in The Netherlands as a beacon for policy makers in the CIS and CEE/SEE regions?", *Review of Central and East European Law*, Vol. 31 No. 2, pp. 135-154.

Alattar, J.M., Kouhy, R. and Innes, J. (2009), "Management accounting information in micro enterprises in Gaza", *Journal of Accounting and Organizational Change*, Vol. 5 No. 1, pp. 81-107.

Barney, J. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.

Barney, J.B. (1995), "Looking inside for competitive advantage", *Academy of Management Perspectives*, Vol. 9 No. 4, pp. 49-61.

Brem, A., Kreusel, N. and Neusser, C. (2008), "„performance measurement in SMEs: literature review and results from a ge#rman case study", *International Journal of Globalisation and Small Business*, Vol. 2 No. 4, pp. 411-427.

Brinckmann, J., Grichnik, D. and Kapsa, D. (2010), "Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning–performance relationship in small firms", *Journal of Business Venturing*, Vol. 25 No. 1, pp. 24-40.

Brustbauer, J. (2016), "Enterprise risk management in SMEs: towards a structural model", *International Small Business Journal: Researching Entrepreneurship*, Vol. 34 No. 1, pp. 70-85.

Chatterjee, R., Shiwaku, K., Gupta, R.D., Nakano, G. and Shaw, R. (2015), "Bangkok to sendai and beyond: Implications for disaster risk reduction in Asia", *International Journal of Disaster Risk Science*, Vol. 6 No. 2, pp. 177-188.

Creditreform (2012), "Corporate insolvencies in Europe 2012/2013. A survey by the creditreform economic research unit", available at: www.creditreform.com/fileadmin/user_upload/CR-International/local_documents/Analysen/Corporate_Insolvencies_12_13.pdf (accessed 20 April 2021).

D'Aveni, R.A. and MacMillan, I.C. (1990), "Crisis and the content of managerial communications: a study of the focus of attention of top managers in surviving and failing firms", *Administrative Science Quarterly*, Vol. 35 No. 4, pp. 634-657.

Delmar, F. and Shane, S. (2003), "Does business planning facilitate the development of new ventures?", *Strategic Management Journal*, Vol. 24 No. 12, pp. 1165-1185.

Delmar, F. and Shane, S. (2004), "Legitimating first: organizing activities and the survival of new ventures", *Journal of Business Venturing*, Vol. 19 No. 3, pp. 385-410.

Eggers, F. (2020), "Masters of disasters? Challenges and opportunities for SMEs in times of crisis", *Journal of Business Research*, Vol. 116, pp. 199-208.

European Commission (2003), "Commission recommendation of 6 may 2003 concerning the definition of micro, small and medium-sized enterprises", available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:en:PDF (accessed 20 April 2021).

European Commission (2013), "Directive 2013/34/EU of the european parliament and of the council of 26 june 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending directive 2006/43/EC of the european parliament and of the council and repealing council directives 78/660/EEC and 83/349/EEC", available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0034&from=EN (accessed 13 September 2021).

European Commission (2018), "Annual report on european SMEs 2017/2018, SMEs growing beyond borders", available at: https://op.europa.eu/en/publication-detail/-/publication/a435b6ed-e888-11e8-b690-01aa75ed71a1 (accessed 20 April 2021).

European Commission (2019), "Directive (EU) 2019/1023 of the european parliament and of the council of 20 june 2019 on preventive restructuring frameworks, on discharge of debt and disqualifications, and on measures to increase the efficiency of procedures concerning restructuring, insolvency and discharge of debt, and amending directive (EU) 2017/1132 (directive on restructuring and insolvency)", available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32019L1023 (accessed 20 April 2021).

Faghfouri, P., Kraiczy, N.D., Hack, A. and Kellermanns, F.W. (2015), "Ready for a crisis? How supervisory boards affect the formalized crisis procedures of small and medium-sized family firms in Germany", *Review of Managerial Science*, Vol. 9 No. 2, pp. 317-338.

Fahy, J. and Smithee, A. (1999), "Strategic marketing and the resource based view of the firm", *Academy of Marketing Science Review*, Vol. 10 No. 1, pp. 1-21.

Falkner, E.M. and Hiebl, M.R. (2015), "Risk management in SMEs: a systematic review of available evidence", *The Journal of Risk Finance*, Vol. 16 No. 2, pp. 122-144.

Ferreira de Araújo Lima, P., Crema, M. and Verbano, C. (2020), "Risk management in SMEs: a systematic literature review and future directions", *European Management Journal*, Vol. 38 No. 1, pp. 78-94.

Filho, E.E., Albuquerque, A.F., Nagano, M.S., Philippsen Junior, L.A. and de Oliveira, J. (2017), "Identifying SME mortality factors in the life cycle stages: an empirical approach of relevant factors for small business owner-managers in Brazil", *Journal of Global Entrepreneurship Research*, Vol. 7 No. 1, pp. 1-15.

Franco, M. and Haase, H. (2010), "Failure factors in small and medium-sized enterprises: qualitative study from an attributional perspective", *International Entrepreneurship and Management Journal*, Vol. 6 No. 4, pp. 503-521.

Freeman, J., Carroll, G.R. and Hannan, M.T. (1983), "The liability of newness: age dependence in organizational death rates", *American Sociological Review*, Vol. 48 No. 5, pp. 692-710.

Friedl, G., Küpper, H.U. and Pedell, B. (2005), "Relevance added: combining ABC with german cost accounting", *Strategic Finance*, Vol. 86 No. 12, pp. 56-61.

Garengo, P., Biazzo, S. and Bititci, U.S. (2005), "Performance measurement systems in SMEs: a review for a research agenda", *International Journal of Management Reviews*, Vol. 7 No. 1, pp. 25-47.

Gaskill, L.R., van Auken, H.E. and Manning, R.A. (1993), "A factor analytic study of the perceived causes of small business failure", *Journal of Small Business Management*, Vol. 31 No. 4, pp. 18-31.

Gilson, S.C. (1991), "Managing default: some evidence on how firms choose between workouts and chapter 11", *Journal of Applied Corporate Finance*, Vol. 4 No. 2, pp. 62-70.

Gilson, S.C. (2012), "Coming through in a crisis: how chapter 11 and the debt restructuring industry are helping to revive the US economy", *Journal of Applied Corporate Finance*, Vol. 24 No. 4, pp. 23-35.

Greene, F.J. and Hopp, C. (2017), "Are formal planners more likely to achieve new venture viability? A counterfactual model and analysis", *Strategic Entrepreneurship Journal*, Vol. 11 No. 1, pp. 36-60.

Gruber, M. (2007), "Uncovering the value of planning in new venture creation: a process and contingency perspective", *Journal of Business Venturing*, Vol. 22 No. 6, pp. 782-807.

Heinicke, A. (2018), "Performance measurement systems in small and medium-sized enterprises and family firms: a systematic literature review", *Journal of Management Control*, Vol. 28 No. 4, pp. 457-502.

Helfat, C.E. and Peteraf, M.A. (2003), "The dynamic resource-based view: capability lifecycles", *Strategic Management Journal*, Vol. 24 No. 10, pp. 997-1010.

Hollman, K.W. and Mohammad-Zadeh, S. (1984), "Risk management in small business", *Journal of Small Business Management*, Vol. 22 No. 1, pp. 47-55.

Hudson, M., Smart, A. and Bourne, M. (2001), "Theory and practice in SME performance measurement systems", *International Journal of Operations and Production Management*, Vol. 21 No. 8, pp. 1096-1115.

Ismail, N.A. (2002), "A framework for the study of accounting information systems in small businesses", *Accounting Today*, Vol. 15 No. 5, pp. 32-35.

Jacobs, M., Karagozoglu, A.K. and Layish, D.N. (2012), "Resolution of corporate financial distress: an empirical analysis of processes and outcomes", *The Journal of Portfolio Management*, Vol. 38 No. 2, pp. 117-135.

Kraus, S., Reiche, B.S. and Reschke, C.H. (2007), "Implications of strategic planning in SMEs for international entrepreneurship research and practice", *European Research and Practice*, Vol. 32 No. 6, pp. 110-127.

Kücher, A., Mayr, S., Mitter, C., Duller, C. and Feldbauer-Durstmüller, B. (2020), "Firm age dynamics and causes of corporate bankruptcy: age dependent explanations for business failure", *Review of Managerial Science*, Vol. 14 No. 3, pp. 633-661.

Laitinen, E.K. (2008), "Data system for assessing probability of failure in SME reorganization", *Industrial Management and Data Systems*, Vol. 108 No. 7, pp. 849-866.

Laitinen, E.K. (2009), "Success factors in small firm reorganization", *International Journal of Management and Enterprise Development*, Vol. 6 No. 3, pp. 300-321.

Laitinen, E.K. (2011), "Effect of reorganization actions on the financial performance of small entrepreneurial distressed firms", *Journal of Accounting and Organizational Change*, Vol. 7 No. 1, pp. 57-95.

Laitinen, E.K. (2013), "Financial and non-financial variables in predicting failure of small business reorganization", *International Journal of Accounting and Finance*, Vol. 4 No. 1, pp. 1-34.

Laurinkevičiūtė, A. and Stasiškienė, Ž. (2011), "SMS for decision making of SMEs", *Clean Technologies and Environmental Policy*, Vol. 13 No. 6, pp. 797-807.

Lavia López, O. and Hiebl, M.R. (2015), "Management accounting in small and medium-sized enterprises: current knowledge and avenues for further research", *Journal of Management Accounting Research*, Vol. 27 No. 1, pp. 81-119.

Lohr, M. (2012), "Specificities of managerial accounting at SMEs: case studies from the german industrial sector", *Journal of Small Business and Entrepreneurship*, Vol. 25 No. 1, pp. 35-55.

Manville, G. (2007), "Implementing a balanced scorecard framework in a not for profit SME", *International Journal of Productivity and Performance Management*, Vol. 56 No. 2, pp. 162-169.

Marc, M., Peljhan, D., Ponikvar, N., Sobota, A. and Tekavcic, M. (2010), "Determinants of integrated performance measurement systems usage: an empirical study", *Journal of Applied Business Research*, Vol. 26 No. 5, pp. 63-76.

Marcelino-Sádaba, S., Pérez-Ezcurdia, A., Lazcano, A.M.E. and Villanueva, P. (2014), "Project risk management methodology for small firms", *International Journal of Project Management*, Vol. 32 No. 2, pp. 327-340.

Marriott, N. and Marriott, P. (2000), "Professional accountants and the development of a management accounting service for the small firm: barriers and possibilities", *Management Accounting Research*, Vol. 11 No. 4, pp. 475-492.

Mayr, S., Duller, C. and Stumbauer, K. (2020), "House banks in out-of-court reorganization: Evidence from Austria", *Journal of Entrepreneurial Finance*, Vol. 22 No. 1, pp. 1-26.

Mayr, S. and Lixl, D. (2019), "Restructuring in SMEs – a multiple case study analysis", *Journal of Small Business Strategy*, Vol. 29 No. 1, pp. 85-98.

Mayr, S. and Mitter, C. (2015), "Rising like a phoenix: from bankruptcy to market leader", *Journal of Small Business and Entrepreneurship*, Vol. 27 No. 6, pp. 519-536.

Mayr, S., Mitter, C. and Aichmayr, A. (2017), "Corporate crisis and sustainable reorganization: evidence from bankrupt Austrian SMEs", *Journal of Small Business Management*, Vol. 55 No. 1, pp. 108-127.

Mbuyisa, B. and Leonard, A. (2017), "The role of ICT use in SMEs towards poverty reduction: a systematic literature review", *Journal of International Development*, Vol. 29 No. 2, pp. 159-197.

Mengel, S. and Wouters, M. (2015), "Financial planning and control in very small start-up companies: antecedents and effects on company performance", *International Journal of Entrepreneurship and Small Business*, Vol. 26 No. 2, pp. 191-216.

Mitter, C., Postlmayr, M. and Kuttner, M. (2020), "Risk management in small family firms: insights into a paradox", *Journal of Family Business Management*, doi: 10.1108/JFBM-06-2020-0051.

Müller, R. (1985), "Corporate crisis management", *Long Range Planning*, Vol. 18 No. 5, pp. 38-48.

Neubauer, H., Mayr, S., Feldbauer-Durstmüller, B. and Duller, C. (2012), "Management accounting systems and institutionalization in medium-sized and large family businesses-empirical evidence from Germany and Austria", *European Journal of Management*, Vol. 12 No. 2, pp. 41-60.

Pearson, C.M. and Clair, J.A. (1998), "Reframing crisis management", *The Academy of Management Review*, Vol. 23 No. 1, pp. 59-76.

Pelz, M. (2019), "Can management accounting be helpful for young and small companies? Systematic review of a paradox", *International Journal of Management Reviews*, Vol. 21 No. 2, pp. 256-274.

Perren, L. and Grant, P. (2000), "The evolution of management accounting routines in small businesses: a social construction perspective", *Management Accounting Research*, Vol. 11 No. 4, pp. 391-411.

Perry, S.C. (2001), "The relationship between written business plans and the failure of small businesses in the US", *Journal of Small Business Management*, Vol. 39 No. 3, pp. 201-208.

Philippe and Partners and Deloitte and Touche, Corporate Finance (2002), *Bankruptcy and a Fresh Start: stigma on Failure and Legal Consequences of Bankruptcy*, International Insolvency Institute, Brussels, Belgium.

Reid, G.C. and Smith, J.A. (2000), "The impact of contingencies on management accounting system development", *Management Accounting Research*, Vol. 11 No. 4, pp. 427-450.

Robbins, D.K. and Pearce, J.A. (1992), "Turnaround: Retrenchment and recovery", *Strategic Management Journal*, Vol. 13 No. 4, pp. 287-309.

Rue, L.W. and Ibrahim, N.A. (1998), "The relationship between planning sophistication and performance in small businesses", *Journal of Small Business Management*, Vol. 36 No. 4, pp. 24-32.

Schmitt, A., Probst, G. and Tuschman, M.L. (2010), "Management in times of economic crisis: insights into organizational ambidexterity", *Management*, Vol. 13 No. 3, pp. 128-150.

Shepherd, D.A. (2003), "Learning from business failure: Propositions of grief recovery for the self-employed", *The Academy of Management Review*, Vol. 28 No. 2, pp. 318-328.

Songini, L., Gnan, L. and Malmi, T. (2013), "The role and impact of accounting in family business", *Journal of Family Business Strategy*, Vol. 4 No. 2, pp. 71-83.

Speckbacher, G. and Wentges, P. (2012), "The impact of family control on the use of performance measures in strategic target setting and incentive compensation: a research note", *Management Accounting Research*, Vol. 23 No. 1, pp. 34-46.

Sudarsanam, S. and Lai, J. (2001), "Corporate financial distress and turnaround strategies: an empirical analysis", *British Journal of Management*, Vol. 12 No. 3, pp. 183-199.

Thornhill, S. and Amit, R. (2003), "Learning about failure: Bankruptcy, firm age, and the resource-based view", *Organization Science*, Vol. 14 No. 5, pp. 497-509.

Trahms, C.A., Ndofor, H.A. and Sirmon, D.G. (2013), "Organizational decline and turnaround", *Journal of Management*, Vol. 39 No. 5, pp. 1277-1307.

Van Gelder, J.L., de Vries, R.E., Frese, M. and Goutbeek, J.P. (2007), "Differences in psychological strategies of failed and operational business owners in the Fiji islands", *Journal of Small Business Management*, Vol. 45 No. 3, pp. 388-400.

Verbano, C. and Venturini, K. (2013), "Managing risks in SMEs: a literature review and research agenda", *Journal of Technology Management and Innovation*, Vol. 8 No. 3, pp. 186-197.

Villarmois, O.D.L. and Levant, Y. (2011), "From adoption to use of a management control tool: case study evidence of a costing method", *Journal of Applied Accounting Research*, Vol. 12 No. 3, pp. 234-259.

Wang, C., Walker, E. and Redmond, J. (2007), "Explaining the lack of strategic planning in SMEs: the importance of owner motivation", *International Journal of Organisational Behaviour*, Vol. 12 No. 1, pp. 1-16.

Wenzel, M., Stanske, S. and Lieberman, M.B. (2020), "strategic responses to crisis", *Strategic Management Journal*, doi: 10.1002/smj.3161.

Yang, W. and Meyer, K.E. (2015), "Competitive dynamics in an emerging economy: competitive pressures, resources, and the speed of action", *Journal of Business Research*, Vol. 68 No. 6, pp. 1176-1185.

Appendix 1. Bankruptcy proceedings in Austria

Internationally, bankruptcy systems can be categorized into debtor- and creditor friendly (Franks *et al.*, 1996; Frouté, 2007). Creditor rights determined by bankruptcy law are key to creditors and serve as a rationale for why companies raise more funds in some countries than others – creditors finance companies because of the protection of their rights (La Porta *et al.*, 2000). Under debtor-friendly bankruptcy systems, creditors typically have few means of control, and recovery rates may be lower than in countries with creditor-friendly bankruptcy systems (Davydenko and Franks, 2008). In an international comparison, Austrian bankruptcy proceedings are considered creditor friendly (La Porta *et al.*, 1997).

The Austrian bankruptcy code distinguishes between two different proceedings, according to their underlying interest. The "Konkursverfahren" mainly aims at the satisfaction of creditors, while the "Sanierungsverfahren" focuses on the reorganization of the company. Both debtor and creditor may request the opening of a "Konkursverfahren" but only the debtor can file for a "Sanierungsverfahren." However, by submitting a payment plan in a "Konkursverfahren" it is possible to strive for reorganization. According to Austrian law, the failing firm is classified as insolvent either when it is unable to service its debt or this inability is imminent (relevant to all types of organizations), or when the liabilities of corporations exceed the market value of its assets ("over-indebtedness").

For the debtor, immediate filing for bankruptcy is mandatory once the firm is insolvent, latest within a legally prescribed period (usually within 60 days). Furthermore, the existence of cost-covering assets (at least for covering the opening costs of the proceedings) is a prerequisite for the opening of proceedings. However, the opening of reorganization-oriented proceedings can only be requested by the debtor. Upon the opening of the case, the court appoints a bankruptcy trustee ("Insolvenzverwalter") who either oversees the company's operations and approves important decisions ("Sanierungsverfahren mit Eigenverwaltung" – reorganization under self-administration) or takes control of the ailing company him-/herself and proceeds with the liquidation, sale of the company or reorganization ("Sanierungsverfahren ohne Eigenverwaltung" – reorganization without self-administration).

In reorganizations, the payment plan plays a decisive role. It specifies the required recovery rate to unsecured creditors that has to be paid within two years in cash. The Austrian bankruptcy code specifies a minimum recovery rate of 20% for reorganizations without self-administration and at least 30% for reorganizations under self-administration. The legally required payment plan differs from the reorganization plan. The latter one specifies the turnaround actions and measures that are essential for a successful reorganization process and the continued existence of the company.

In a creditors' meeting, the payment plan is voted on. For approval, a simple majority of the voting creditors (by number and by value) is required. If the plan is approved by creditors, it will subsequently be approved by the court. Once the payment plan has been met, the debtor's residual debt is discharged.

If the plan is not accepted, or in a liquidation-oriented "Konkursverfahren," the bankruptcy trustee either sells the company as a going-concern (with the help of a rescue company) or piece-meal and distributes the proceeds of the sale to creditors.

Appendix 2

		Formal planning	Quality early warning system	Financial accounting system	Reorganization plan
Quality accounting systems	Correlation (measure)	0.446 (pb)	0.333 (rs)	0.232 (pb)	0.278 (pb)
	p-Value (two-sided)	0.000***	0.000***	0.012**	0.002***
Formal planning	correlation (measure)		0.210 (pb)	0.103 (phi)	0.310 (phi)
	p-Value (two-sided)		0.023**	0.268	0.001***
Quality early warning system	correlation (measure)			0.027 (pb)	0.248 (pb)
	p-Value (two-sided)			0.772	0.007***
Financial accounting system	Correlation (measure)				0.004 (phi)
	p-Value (two-sided)				0.968

Notes: Significance levels: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; Correlation measure: pb = Point biserial Spearman correlation rs = Spearman's rank correlation coefficient phi = Phi contingency coefficient

Table A1. Correlations

References

Davydenko, S.A. and Franks, J.R. (2008), "Do bankruptcy codes matter? A study of defaults in France, Germany, and the UK", *The Journal of Finance*, Vol. 63 No. 2, pp. 565-608.

Franks, J.R., Nyborg, K.G. and Torous, W.N. (1996), "A comparison of US, UK, and German insolvency codes", *Financial Management*, Vol. 25 No. 3, pp. 86-101.

Frouté, P. (2007), "Theoretical foundation for a debtor friendly bankruptcy law in favour of creditors", *European Journal of Law and Economics*, Vol. 24 No. 3, pp. 201-214.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R.W. (1997), "Legal determinants of external finance", *The Journal of Finance*, Vol. 52 No. 3, pp. 1131-1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R.W. (2000), "Investor protection and corporate governance", *Journal of Financial Economics*, Vol. 58 Nos 1/2, pp. 3-27.

Corresponding author
Michael Kuttner can be contacted at: michael.kuttner@jku.at