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Are family owners and managers good stewards in global crises? Evidence from stock market reactions to Covid-19

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A B S T R A C T

The Covid-19 pandemic as a truly global crisis has shown the importance of firm resilience in times of crisis. Yet, so far, we lack an understanding of the role of firm ownership and management in building this resilience. Based on stewardship theory, we posit that family management and ownership help firms to navigate through a global crisis. To test our predictions, we analyze how Covid-related negative events affect the stock market reactions of 300 German listed firms and how family ownership and management moderate these effects. Our cross-sectional regression results show a positive effect of family management while no such effect was found for family ownership. We contribute to the research on family involvement and stewardship in crisis situations by showing that family ownership and management constitute distinct determinants of stewardship behavior and by bringing a context element into family business stewardship research that was missing so far in the literature. Practical implications exist for family firm’s top management employment policies and capital market communication in crisis situations.

1. Introduction

Global crises, such as the Covid-19 pandemic (hereafter Covid pandemic), can threaten firm survival and performance (Dowell, Shackell, & Stuart, 2011; Flammer & Ioannou, 2021). As family firms constitute the backbone of most economies and most firms around the world are family firms, it is important to understand how the specific characteristics of family firms influence how family firms cope with such survival-threatening global crises (Chrisman, Chua, & Steier, 2011; Madsen & Rodgers, 2015; Miller, Minichilli, & Corbetta, 2013; Salvato, Sargiacomo, Amore & Minichilli, 2020). Prior research thereby distinguishes between family ownership and management as two separate dimensions of family firms and emphasizes the (financial) stewardship role attributed to families as firm owners and managers (Le Breton-Miller, Miller, & Lester, 2011; Neckebrouck, Schulze, & Zellweger, 2018). The ability of firms to mitigate the negative consequences during crises is argued to grow stronger with families as firm owners or managers because of their strong identification with the firm, their long-term orientation and their alignment with stakeholder goals (Miller et al., 2013; Neckebrouck et al., 2018).

However, in the context of a global crisis, this stewardship role of families as firm owners and managers has rarely been analyzed explicitly. In fact, we know little about which form of family involvement really matters during a (global) crisis and how it affects firm value. The two most closely related papers to ours compare firm performance after crises to pre-crisis levels, but do not focus explicitly on crises periods (Minichilli, Brogi and Calabrò, 2016; Amore et al., 2021). Further, these papers focus on the interplay of family ownership and family management and provide conflicting empirical evidence on whether family-managed firms benefit from family owners. In contrast to these studies, we focus on which specific form of family involvement in ownership and management matters during a crisis. We exploit crisis-related events and their valuation effects during an ongoing exogenous global crisis and provide insights about how the market assesses the stewardship behavior and capabilities of family owners and managers during crisis situations.

From a theoretical perspective, these forms of family involvement can be associated with pro-organizational stewardship behavior and capabilities and thus an increase of firm resilience (Corbetta & Salvato, 2004; Davis et al., 1997; Kellermanns & Eddleston, 2004; Le Breton-Miller, Miller, & Lester, 2011; Miller et al., 2013; Neckebrouck, Schulze, & Zellweger, 2018). Irrespective of how the family is involved,
they may use their networks and strong links to stakeholders as well as their high motivation to attenuate negative financial consequences for the firm. Nevertheless, different ways and roles of family involvement exist and it might indeed make a difference whether a family is involved as an owner and/or a manager. Families in their role as owners may support the firm through the provision of additional financial capital or forgoing dividends while families who act as managers may use their experience, social capital and strong goal alignment with shareholders to help the firm through the crisis. Ultimately, it is an open and empirical question which form of family involvement matters in a situation of a global crisis.

To study the stewardship behavior of the different forms of family involvement, we make use of the Covid pandemic as an example of a global crisis. Due to our rich dataset, we are able to distinguish between different forms of family involvement, e.g., solely family-owned and solely family-managed firms. This enables us to independently study which form of family involvement leads to good (financial) stewardship and thus matters most in a crisis. In our event study, we analyze how daily stock market reactions of a sample of German-listed firms to negative Covid-related events are influenced by different forms of family involvement. Our focus on daily stock returns allows us to study the reactions of the stock market to specific negative Covid-related events and mitigates econometric and interpretative challenges that exist for wider event windows (weekly, monthly, yearly returns) that are influenced by several colliding and opposing events within these event windows. The negative Covid-related events comprise virus propagation, economy disturbance, and the political restriction of public gatherings during the first wave of the Covid outbreak. Our focus on the first wave ensures that the specific Covid-related events are exogenous to our sample firms as the Covid pandemic occurred sudden and abrupt.

Our results show that only family management has an effect and reduces the negative firm valuation effects; family ownership was found to have no effect. The results persist when we study different types of Covid-related events separately. Robustness tests (in the Online Appendix) confirm our results. We conduct placebo tests, match firms with family involvement to firms without family involvement, ensure that our results are independent from common cut-off levels with regard to family ownership, use continuous proxies for family ownership and management, and include further control variables to rule out alternative explanations.

Our study contributes to research on the stewardship role of families during (exogenous global) crises (Dyer, Nenque, & Hill, 2014; Lange, Boivie, & Westphal, 2015; Miller et al., 2013) as well as to research on the valuation consequences of financial stewardship in such situations (Miller et al., 2013; Neckebrouck et al., 2018). In contrast to prior literature that associates a less common stewardship behavior of family firms and thereby add a contextual element to stewardship theory that seems to be largely missing in the literature on stewardship behavior in family firms.

Next to the contribution to stewardship research our study also contributes to corporate governance research about (global) crises (Bae, Baek, & Kang, 2012; Baek, Kang, & Suh Park, 2004; Conyon, Judge, & Useem, 2011; Crespi & Martin-Oliver, 2015; Dowell et al., 2011; Johnson, Boone, Breach & Friedman, 2000; Lemmon & Lins, 2003) by illustrating that it is the management and not the ownership dimension that is crucial in the context of crisis management. This finding complements prior literature suggesting that board structure (Lemmon and Lins, 2003), CEO characteristics (Dowell et al., 2011), and control (Baek et al., 2004; Block, 2010), capital structure (Crespi & Martin-Oliver, 2015), minority shareholder protection (Johnson et al., 2000; Bae et al., 2012), as well as the macroeconomic environment (Conyon et al., 2011) can influence strategic reactions to crises. In this sense, we identify another influencing factor – family management – for firms to better overcome crisis situations. Moreover, our results are in contrast to prior evidence that family ownership is detrimental to firms (Bae et al., 2004). Our findings suggest that family ownership does not hurt stock-market performance during a crisis, and that family management is a valuable resource enabling quick decision-making and strategic flexibility.

Finally, we contribute to recent research on the Covid pandemic and its impact on financial markets (Amore et al., 2021; Ding, Levine, Lin & Xie, 2021; Fahlenbrach, Rageth, & Stulz, 2021; Ramelli & Wagner, 2020) by showing that family-managed firms exhibit less negative returns than other firms. Prior finance research on the Covid pandemic studies the stock market reactions to firms with a larger exposure to the virus propagation (Ramelli & Wagner, 2020), more leverage (Ramelli & Wagner, 2020), cash holdings (Fahlenbrach et al., 2021; Ramelli & Wagner, 2020), and organizational as well as corporate governance characteristics (Ding et al., 2021; Amore et al., 2021). In contrast to these studies, we do not limit our analyses to virus propagation events, but also study economic and political events, for which our sample firms exhibit even stronger stock market reactions. Since we study daily stock price reactions, we further overcome the limitations of prior literature studying and interpreting broad event windows. Our study also adds to recent Covid research in the family business field. Our results are, for example, in line with Jaufenthaler (2022), who finds that family firms are perceived as more attractive employers in the Covid pandemic owing to the perception of greater job security. Our basic argumentation is also in line with a family social capital perspective positing that family members role as owners or managers provide social capital that help the firm to assess important resources to survive in unforeseen crisis events (Hadjielias et al., 2022). Finally, the results of our study also relate to a recent study by Bertschi-Michel et al. (2022), who find that in a survival-threatening liquidity crisis situation family ownership increases the likelihood of operational, portfolio, and financial moves and decreases the likelihood of management turnover. The result about the operational, portfolio and financial moves in line with our finding that family management (and not family ownership) makes the difference in a crisis situation. This could be explained through the fact that our sample contains publicly listed firms whereas the study of Bertschi-Michel et al. (2022) refers to private firms. The finding about the lower management turnover of family-owned firms in crisis situations fits with our argumentation and can be interpreted as a sign of stewardship behavior. Even in a survival-threatening situation family-owned firms stay with their family CEO and want to take an
active management role.

The main result of our study has practical implications for family firms, in particular regarding their top management employment policies and capital market communication in crisis situations. Our results suggest that in the situation of a global crisis publicly listed family firms should proactively communicate that their firm is run and managed by a member of the owner family. Such a communication would lead to positive valuation effects.

2. Stewardship theory and crisis behavior

In this section, we draw from the literature on (financial) stewardship (Davis, Schoorman, & Donaldson, 1997; Neekbrouck et al., 2018) and describe why pro-organizational stewardship behavior can be a valuable resource in crisis situations. The term stewardship comprises human caring, loyalty, generosity, and devotion to social groups (e.g., by contributions), institutions, or other stakeholders (Davis et al., 1997; Donaldson & Davis, 1991; Eddleston & Kellermanns, 2007; Zahra, 2003). Stewardship theory relies on a model of man that describes stewards as self-actualizing and other-serving rather than self-interested and self-serving. Therefore, stewardship theory assumes that stewards will align their personal interests to those of the other stakeholders, thereby focusing on organizational and not on individual goals. In this sense, stewardship theory substitutes the assumption of opportunistic behaviors by agents that agency theory (Jensen & Meckling, 1976) relies on and that result in individualistic, opportunistic, and self-serving behavior.

In contrast to agency theory, stewardship theory assumes that agents (referred to as stewards) aspire to higher purposes at their jobs, are intrinsically motivated by goals other than private interests, and act with altruism for the benefit of their organization and its stakeholders (Davis, Schoorman, & Donaldson, 1997; Donaldson & Davis, 1991). Even with non-aligned interests, stewards focus on the cooperation with principals and other stakeholders (Corbett & Salvato, 2004; Davis et al., 1997; Kellermanns & Eddleston, 2004). Thus, stewards make decisions that benefit the organization as a whole as well as the needs of other stakeholders (Le Breton-Miller & Miller, 2009; Miller, Le Breton-Miller, & Scholnick, 2008), even when the decisions can be costly for them personally (Davis et al., 1997). Through this behavior stewards can foster a stewardship culture in their organization (Hernandez, 2008; Pearson & Marler, 2010; Eddleston, 2008) and obtain a higher organizational performance (Eddleston & Kellermanns, 2007; Eddleston et al., 2008; Miller et al., 2008). Stewardship behavior has often been associated with the behavior of family firms and their owner families. The behavior or motivation of owner families is described as long-term, stakeholder-oriented and motivated by a strong overlap of family and firm identity (Le Breton-Miller et al., 2011; Zellweger et al., 2010).

Stewardship behavior arises among individuals of similar social networks who have stable relationships with one another that are characterized by interdependence as well as numerous interactions (Bourdieu, 1986; Nahapiet & Ghoshal, 1998; Putnam, 2000). Stewardship behavior is more pronounced among individuals, e.g., executives or leaders, that aim for (business) continuity, for establishing and preserving an empowering corporate culture, and for strong relationships with stakeholders, who might be of help in crisis situations (Miller et al., 2008).

In crisis situations, there is a high focus, pressure, and responsibility on individuals, e.g., executives or majority owners of firms, to ensure business continuity and performance (Miller & Le Breton-Miller, 2005; Miller et al., 2008). Leaders have to incorporate overwhelming amounts of information as a basis for their decisions or monitoring activities, have to manage their networks and dependencies to ensure business continuity, and require strategic flexibility for quick and effective decision-making (Zahra, Hayton, Neubaum, Dibrell & Craig, 2008). Stewardship theory shares this high focus on individuals and their behaviors. Therefore, it is a useful theory to explore differences in (leadership) behaviors of different types of leaders (e.g., managers and owners) along with the stock-market performance of their firms during the Covid pandemic. Above the leader characteristics, stewardship theory offers several components that are critical to master a crisis. These components comprise a functioning network, management of dependencies with stakeholders, and strategic flexibility to respond to threats in the competitive environment.

We argue that due to an increased focus on individuals in crisis situations, individual differences in behaviors and reactions to crisis situations become more pronounced and result in performance differences between stewards and agents. First, in uncertain environments stewards tend to be more entrepreneurial and are able to obtain a higher performance due to their extraordinary commitment and proactivity (Aragon-Correa & Sharma, 2003; Lumpkin & Dess, 2001). Second, stewards maintain networks that support them with information and trustworthy relationships to other stakeholders. Stewards can benefit from these networks and information to proactively search for innovative strategies and new opportunities to deal with and arising from crisis situations (Miller & Le Breton-Miller, 2005; Miller, Le Breton-Miller, & Scholnick, 2008; Salvato, Chirico, & Sharma, 2010). Third, numerous interactions and dependencies align the goals of stewards and other stakeholders. Instead of competition, these groups support one another to mutually navigate through a crisis (Bourdieu, 1986; Nahapiet & Ghoshal, 1998; Putnam, 2000). Fourth, stewards can rely on the established corporate culture to ensure business continuity and performance. This corporate culture allows stewards to respond quickly and effectively to competitors’ actions, customers’ needs, to successfully navigate through the major uncertainties associated with a global crisis situation (Combs, Ketchen, Ireland & Webb, 2011; Helfat & Raubitschek, 2000), and to identify opportunities for growth in order to revitalize and expand the business, especially when stewards are involved in daily operations (Cruz & Nordqvist, 2012; Nordqvist, Habbershon, & Melin, 2008). Fifth, the pro-organizational behavior of stewards as well as their intrinsic desire to serve the firm and align with other stakeholders’ interests mitigates negative effects that could result under opportunistic behavior, especially during crises (Corbett & Salvato, 2004; Hernandez, 2008; Zahra et al., 2008). Due to the pro-organizational behavior of stewards, they will not become risk-averse and will not opportunistically avoid certain strategic choices that carry the risk of financial losses, although their personal wealth and utility may be dependent on their continued employment (Wiseham & Gomez-Mejía, 1998). Due to stewards’ alignment with stakeholder goals, firms have to invest less in monitoring and control mechanisms, creating value for organizations (Chrisman, Chua, & Litz, 2004; Combs, Penney, Crook & Short, 2010; Davis et al., 1997; Chrisman, 2019). For the same reasons, stewards do not use their information advantage to exploit less influential and less well-informed stakeholders, e.g., expropriate minority shareholders (Villalonga & Amit, 2006). In addition, stewards will not engage in shirking or free-riding behavior that may result in entrenchment or altruism towards close relatives to support them in getting into or remaining in key positions (Bertrand & Schoar, 2006; Wang, 2006; Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson & Moyano-Fuentes, 2007).

3. Study context and hypotheses

3.1. Context of the study

We examine our hypotheses in the empirical context of the Covid pandemic, which hit Germany relatively early (Robert Koch-Institut, 2021). The first case was detected as early as 27 January 2020 (Spiegel, 2020), only 15 days after the World Health Organization confirmed that a novel coronavirus had caused respiratory illnesses in China (World Health Organization, 2020). In the following weeks, several clusters of Covid infections were detected across several German regions leading to curfews, border closures to neighboring countries,
and the shutdown of whole industries (Tagesschau, 2020a). Economically, the severe responses to the Covid pandemic induced a collapse in exports, supply chain disruptions, and let to an economic crisis (Federal Ministry of Finance, 2020; Handelsblatt, 2020; Tagesschau, 2020a). By the end of the first quarter of 2020, almost half a million firms in Germany used “Kurzarbeit”, a government-subsidized short-time working program (Hamburger Abendblatt, 2020), for roughly 10 million employees (Tagesschau, 2020b). Despite this program, during the following weeks the unemployment rate in Germany increased by 25% on a year-to-year basis (Deutsche Welle, 2020) and exports from German firms dropped by 31% compared to the previous year, an unprecedented decrease since 1950 (Süddeutsche Zeitung, 2020). Germany’s gross domestic product decreased by 9.7% during the second quarter as compared to the first quarter of 2020 and by 11.3% on a year-to-year basis (Federal Statistical Office of Germany, 2020). Compared to the 2019 levels, the gross domestic product of Germany in 2020 decreased by 5.0% (Federal Statistical Office of Germany, 2021).

The Covid pandemic is different from all other prior global crises regarding its cause, scope, and severity (Ding et al., 2021). In contrast to prior crises, Covid induced a viral pandemic that abruptly and severely constricted global economic activity, resulting in supply chain disruptions due to shutdowns of whole industries as well as border closures and simultaneously evaporated demand due to increased unemployment and short-time working programs. For governments, this resulted in a trade-off between health protection and stimulus to the economy. For companies, the Covid pandemic led to a situation of huge uncertainty where firm owners and managers switched abruptly into a crisis mode looking to find new answers. A study by Stiftung Familienunternehmen (2020)1 investigates how large German family firms were hit by the first wave of the Covid pandemic. The study comprises a survey and compares the answers from 115 of the 500 largest German family firms with comparable non-family firms. The results show that family firms were slightly more negatively affected by the Covid pandemic than non-family firms. The severity of the crisis differed by industry with the manufacturing and services sector hit harder than, for example, the construction sector. The mean expected sales decrease in the year 2020 as compared to pre-crisis levels was estimated at minus 24.3%. Family and non-family firms were found to differ in their reactions to the crisis. Family firms were more likely than non-family firms to increase their (short-term) liquidity and equity base, whereas non-family firms were more likely to engage in (employment) downsizing. Overall, these results point towards a higher likelihood of stewardship behavior of family versus non-family firms in the Covid pandemic. The results are also in line with Block et al. (2022), who investigate the liquidity management of small firms in the first phase of Covid pandemic and find that more experienced and long-term oriented entrepreneurs are more likely to engage in bootstrap financing to secure liquidity.

3.2. Family ownership and stewardship in the Covid pandemic

We argue that during the Covid pandemic family owners behave like stewards. First, family owners view crises as a severe threat to their wealth and their commitments to society (Madison et al., 2016; Pearson & Marler, 2010). The Covid pandemic poses such a crisis for family owners’ wealth as not only the survival of their firms is at risk due to supply chain disruptions, demand side evaporation, and business closures, but also their reputation as firm owners and stable employers. To deal with this threat, stewardship theory proposes that family owners are active owners intensifying their monitoring activities of the firm to support the management in seizing opportunities for recovery (Zahra & Pearce, 1989; Daily, Dalton, & Rajagopalan, 2003; Le Breton-Miller et al., 2011; Miller, Le Breton-Miller, Minichilli, Corbetta & Pittino, 2014). Monitoring activities during the Covid pandemic are challenging, because family owners need to deal with high uncertainty and overwhelmingly amounts of new information about the (economic) consequences of the abruptly occurring Covid pandemic. However, due to their motivation and high commitment (Davis et al., 1997), we argue that family owners provide the required monitoring activities and thus are beneficial owners to their firms.

Second, the strong long-term and dynastic orientation of owner families manifests itself in the provision of additional financial capital or forgoing dividends (Neckebrouck, Manigart, & Meuleman, 2017) to ensure survival of the family firm. The severely and abruptly occurring Covid pandemic reduced financial flexibility and cash holdings of firms, as the revenues stopped due to business closures and supply chain disruptions (Fahlenbrach et al., 2021). Due to family owners’ strong interest in the continuity of their business (Miller et al., 2008), we argue that they are more willing to provide additional capital or forgo dividends, when their firms need this financial flexibility most.

Third, due to shared goals with stakeholders and stable long-term relationships to them, family owners can credibly build and maintain relationships to other stakeholders based on mutual trust and loyalty for the long run (Carr, Cole, Ring & Blettner, 2011; Chrisman, Chua, & Kellermanns, 2009). During the Covid pandemic, these strong relationships and the trustworthiness of family owners can be a competitive advantage for the family-owned firm (Barney & Hansen, 1994; Chrisman et al., 2009; Faccio & Parsley, 2009; Salvato et al., 2020; Sirmon & Hitt, 2003) and ensure the necessary support from its stakeholders. For example, strong relationships of family owners result in better borrower-lender relationships (D’Aurizio, Oliviero & Romano, 2015) and easier as well as cheaper access to badly needed capital resources in a situation of such a global crisis. As the pursuit of long-term orientation and business continuity by family owners decreases the likelihood of opportunistic actions, banks are more willing to provide the required resources to family owners (D’Aurizio, Oliviero & Romano, 2015).

We argue that family owners operate in an environment that fosters stewardship behavior, as it is characterized by stable as well as strong relationships to stakeholders and consists of individuals aiming for business continuity. Apart from intensified monitoring activities, family owners are both more willing to provide additional capital on their own and due to their good and long-term relationships with banks are able to provide their firms with access to external capital. The following hypothesis should apply:

Hypothesis 1. Family ownership reduces the negative stock market reactions to the Covid pandemic.

3.3. Family management and stewardship in the Covid pandemic

We argue that during the Covid pandemic family managers behave like stewards. First, family managers tend to identify strongly with the firm as the firm is also part of their own family and personal identity (Corbett & Salvato, 2004; Zellweger, Edelston, & Kellermanns, 2010). Hence, they are deeply committed to navigating the firm successfully through the Covid pandemic, which poses an enormous risk for the performance and survival of the firm (Ding et al., 2021). Due to the high identification of family managers with their firm, any threats to the existence of their firm, immediately put their personal identity at stake (Corbetta & Salvato, 2004; Zellweger, Edelston, & Kellermanns, 2010).

Second, due to the focus on organizational goals and stakeholders’ interests family managers build strong social capital in particular with the employees of the firm. Prior research shows that family managers provide employees with opportunities for personal growth, self-
actualization, and job security (Bassanini, Breda, Caroli & Rebérioux, 2013; Block, 2010; Sraer & Thesmar, 2007). During crises such as the Covid pandemic family managers can then rely on their employees’ commitment (Corbetta & Salvato, 2004; Davis et al., 1997), proactivity (Miller et al., 2008) and productivity (Barth, Gulbransden, & Schöne, 2005; Sraer & Thesmar, 2007), resulting in a competitive advantage (Knott, Bryce, & Posen, 2003; Nahapiet & Ghoshal, 1998). Recent research by Amore et al. (2021) suggests that family managers benefit from their strong stakeholder ties during a crisis, because these ties allow them to make the necessary organizational adjustments to overcome crisis-related challenges. In addition to these close relationships, family managers implement and foster an empowering corporate culture (Miller et al., 2008) that during the Covid pandemic can support family managers in incorporating an overwhelming amount of new information immediately to influence business decisions (Ding et al., 2021).

Third, job security and long tenure of family managers (Davis et al., 1997; Le Breton-Miller et al., 2013), provides them with a high tolerance towards temporary uncertainties (Davis et al., 1997; Le Breton-Miller et al., 2011). Especially during the Covid pandemic, risk and uncertainty tolerance are beneficial for effective crisis management and can result in a competitive advantage vis-à-vis other managers, since family managers as stewards are not distracted by pursuing their own interests and do not follow risk avoidance strategies that harm their stock-market performance (Le Breton-Miller et al., 2011; Miller et al., 2013). This allows family managers to focus on effective solutions for the organization and its stakeholders, for example by leveraging their social capital to mitigate pandemic induced supply chain disruptions.

Fourth, the long tenure of family managers provides them with high experience and deep knowledge about the firm which contributes to their decision-making competence, again representing a competitive advantage vis-à-vis other managers (Henderson, Miller, & Hambrick, 2006; Miller et al., 2013; Miller & Shamsie, 2001; Minichilli, Corbetta, & MacMillan, 2010). As family managers are embedded in an organizational structure that empowers them with a great decision-making latitude and power, they are not only willing to take the necessary decisions to survive the Covid pandemic, but are also able to do so (Kets de Vries, 1993; Miller et al., 2013). This can make the difference in a situation such as the Covid pandemic, where decisions have to be taken quickly, under high outcome uncertainty, and where new challenges require entrepreneurial thinking for solving them effectively.

We argue that family managers operate in an environment that fosters stewardship behavior, as it is characterized by an empowering corporate culture that fosters the growth of social capital and consists of individuals aiming for business continuity. Apart from that, family managers are highly committed, can rely on their employees support, flexibility and productivity, and are heavily involved in daily operations to overcome new challenges imposed by the Covid pandemic. The following hypothesis should hold:

**Hypothesis 2.** Family management reduces the negative stock market reactions to the Covid pandemic.

4. Data and method

4.1. Sample and data sources

We gather a sample of Covid-related announcements pertaining to virus expansion, economy disturbance, and political restrictions during the first wave of the Covid outbreak in Germany that hit German firms exogenously. We obtain this information from tagesschau.de, the main German national and international news service, and from the Handelsblatt, a German-language business newspaper. We extend this dataset with data on the Covid propagation from the Robert Koch Institute, which monitors the virus propagation in Germany, and with data from the Johns Hopkins Coronavirus Resource Center, which monitors the worldwide Covid-19 propagation.

Our sample of firms comprise firms from the German composite stock market index (CDAX) as of December 31, 2019. For these firms, we collect accounting, subsidiary, ownership, and management data from Bureau van Dijk’s Amadeus database as well as stock price data from Bloomberg. We supplement these data with information on family involvement as owners, managers, or chairmen.

These data and news sources enable us to ascertain when a Covid-related event occurs and which firms are affected by that event. We use the data from the Robert Koch Institute to identify which firms in which German districts and federal states are affected by news pertaining to the virus propagation. We assume that firms with headquarters, legal incorporation, or subsidiaries in a district or state in which a Covid event occurs are more affected than firms in other German districts or states. The same rationale applies to the use of the Johns Hopkins University data in the international context. For example, the more exposure a firm has to a country, e.g., due to subsidiaries in the country that is affected by a Covid-outbreak, the more likely this firm is also affected. With this approach, we exploit the heterogeneity of our sample firms in terms of geographic diversification.

We exclude financial firms (Standard Industrial Classification, or SIC, codes 6000–6999) and missing information for total assets or other firm-specific codes 6000–6999) and missing information for total assets or other firm-level control variables. Moreover, we do not consider firms for which we cannot calculate abnormal returns because these firms are thinly traded and exhibit more than 40% missing returns or more than 60% returns of zero within 2019, our estimation window. This leaves us with a sample of 300 firms and altogether 32,110 firm-day observations for our sample period ranging from January to end of August 2020.

4.2. Variables and summary statistics

4.2.1. Dependent variable

The purpose of our research is to assess the stock market reactions to negative Covid-related events for firms with different forms of family involvement and accordingly financial stewardship. We therefore rely on daily abnormal returns as our dependent variable. We calculate abnormal returns for all event days and sample firms. With this approach, we follow a large body of literature that uses daily stock market information, e.g., abnormal returns, as the dependent variable to study short-term reactions (Hail, Muhn, & Oesch, 2021; Larcker, Ormazabal, & Taylor, 2011).

4.2.2. Independent variables

We control for three Covid-related announcement types. The virus expansion dummy applies to negative news about the evolution of infections. For example, we classify the first virus case in a country as a negative event. On a district level, we classify the passage of a 7-day virus incidence of 35 or 50 (dependent on the state threshold) as a negative event. The 7-day incidence is defined as the number of new infections. For example, we classify the first virus case in a country as a negative event.

The virus expansion dummy applies to negative news about the economy, e.g., negative news about consumer confidence, supply chain disruptions, worse order situations in firms/industries, or negative news about job markets. The political restriction dummy is used for instances when negative news about political restrictions impede businesses, e.g., when political decisions hamper inter-country trade due to border closures or result in production stops/cuts.

Furthermore, we include variables capturing different forms of family involvement. The family ownership dummy characterizes firms in which a founding-family blockholder owns more than 25% of the voting shares of the firm. Family blockholders comprise the founder(s) and their family members. The family management dummy refers to firms where the founding-family is represented on the executive board and the family chairman dummy refers to firms where the founding-family provides the chairman of the supervisory board. In our
robustness tests, we also employ alternative measures of family involvement, e.g., continuous measures of family ownership.

We also include a number of standard firm-level control variables that, according to the literature, can have an effect on stock market reactions (Andres, Jacob, & Ulrich, 2019; Ding et al., 2021; Giroud & Mueller, 2010). The controls are: R&D (R&D expenses/lagged total assets), capital expenditures (capital expenditures/lagged total assets), cash holdings (cash & equivalents/lagged total assets), one-year sales growth, leverage (total debt/lagged total assets), firm size (natural logarithm of total assets), return on assets (earnings before interest, taxes and depreciation, amortization/lagged total assets), and firm age (natural logarithm of years since initial public offering).

Table 1 presents summary statistics for our sample firms. In this table, we present the mean and the standard deviation for all of our employed variables. For our continuous variables, we additionally depict the 25th, 50th, and 75th percentiles. Since our Covid-related event dummy variables in Panel B may overlap, the sum of the three variables does not add up to one. Table A of the Appendix provides a detailed description of our variables. Table 2 illustrates the correlations for all of our employed variables and documents that the family ownership and management dummies are correlated to a non-concerning degree. Additional tests for multicollinearity of all of our independent variables confirm that the variance inflation factors are far away from critical thresholds. Hence, multicollinearity does not pose a problem for our analyses, although these analyses comprise many dummy variables.

Table 1: Summary statistics. This table presents descriptive statistics for the sample firms. Panel A provides summary statistics for the outcome variable, Panel B presents summary statistics for the Covid-19 related event variables as described in Table A of the Appendix, Panel C provides summary statistics for the firm-level control variables, Panel D for the family involvement variables, and Panel E presents an overview about the sample. Column (1) reports the mean and Column (2) the standard deviation for each variable. Column (3) reports the 25th percentile, column (4) the 50th percentile (median), and column (5) the 75th percentile for each continuous variable. For variable definitions please refer to Table A of the Appendix.

| Variables                         | (1)  | (2)  | (3)  | (4)  | (5)  |
|----------------------------------|------|------|------|------|------|
| **Panel A: Outcome variable**    |      |      |      |      |      |
| Daily abnormal returns          | -0.001 | 0.041 | -0.018 | -0.001 | 0.015 |
| **Panel B: Covid-19 related event variables (negative exogenous shocks)** |      |      |      |      |      |
| Virus expansion                  | 0.771 | 0.420 |      |      |      |
| Economy disturbance             | 0.274 | 0.446 |      |      |      |
| Political restrictions          | 0.150 | 0.357 |      |      |      |
| **Panel C: Firm-level control variables** |      |      |      |      |      |
| Family chairman dummy           | 0.131 | 0.338 |      |      |      |
| R&D                              | 0.038 | 0.071 | 0    | 0.006 | 0.049 |
| Capex                            | 0.043 | 0.040 | 0.017 | 0.003 | 0.057 |
| Cash & Equivalents               | 0.221 | 0.290 | 0.069 | 0.134 | 0.243 |
| Sales Growth                     | 0.073 | 0.274 | -0.012 | 0.044 | 0.136 |
| Leverage                        | 0.231 | 0.304 | 0.041 | 0.176 | 0.318 |
| Ln(Assets)                       | 13.28 | 2.52  | 11.69 | 13.06 | 14.91 |
| Return on Assets                 | 0.091 | 0.171 | 0.057 | 0.110 | 0.158 |
| Ln(Firm Age)                     | 2.71  | 0.81  | 2.48  | 3.00  | 3.09  |
| **Panel D: Family involvement variables** |      |      |      |      |      |
| Family ownership dummy           | 0.282 | 0.450 |      |      |      |
| Family management dummy          | 0.188 | 0.391 |      |      |      |
| **Panel E: Sample overview**     |      |      |      |      |      |
| Number of observations           | 32,110 |      |      |      |      |
| Number of firms                  | 300   |      |      |      |      |

4.3. Empirical strategy

In our empirical tests, we study the reactions of German CDAX firms to Covid-related events. Our identification strategy relies on the variation in treatment to Covid-related events across our sample firms and across time. This variation in treatment is caused by German regions being affected by Covid to varying degrees and at different times (Robert Koch-Institut, 2021), providing important variation for our identification strategy. Additionally, Germany’s federal system and its different and varying responses to Covid has contributed to many Covid-related events that affected different firms at different times. Furthermore, varying degrees of the engagement of German firms in global regions ensures valuable variation in treatment status to Covid-related events across firms and time.

To capture the short-term effects of negative Covid-related events on firms with different forms of family involvement, we apply event study methodology and measure daily abnormal returns to all of our sample firms on each trading day from January to August 2020. We estimate daily abnormal stock returns using the Fama-French-Carhart six-factor model for Europe. The model includes five factors proposed by Fama and French (2016) as well as the momentum factor as suggested by Carhart (1997). The factors correct the daily returns for market, size, value, profitability, investment, and momentum patterns so that none of these patterns can be a driver for abnormal returns. We estimate the parameters of the six-factor model for each firm in our sample over all trading days in 2019. We choose all trading days of 2019 (and none of 2020) as an estimation window to avoid influences from Covid-related events on the estimation of the parameters. Daily abnormal returns during the sample period are calculated by subtracting the expected return implied by the six-factor model from the realized return. Our event study method is consistent with standard event study methodology (Brown & Warner, 1980; Kolari & Pynnönen, 2010).

Since Covid-related events simultaneously have an impact on several of our sample firms, these firms share the same event period and hence exhibit some degree of cross-sectional correlation in abnormal returns which biases conventional test statistics. Thus, we test for statistical significance using the t-statistic of Boehmer, Masumeci, and Poulsen (1991) and adjust it with the Kolari and Pynnönen (2010) adjustment factor so that the test statistics account for cross-sectional correlation in abnormal returns across sample firms. This is the state-of-the-art technique to account for cross-sectional correlation (Kolari & Pynnönen, 2010).

To investigate the cross-sectional determinants of the market reaction to Covid-related events, we regress the daily abnormal returns on the forms of family involvement proxies and on additional firm characteristics. The cross-sectional regressions allow us to control for time varying and time-invariant trading day characteristics as well as industry and firm characteristics that go beyond the patterns identified by Fama and French (2016) and may influence daily stock price reactions to Covid-related events. Due to cross-sectional correlation of the daily abnormal returns, we use the portfolio weighted least squares approach of Chandra and Balachandran (1992) to adjust our cross-sectional tests for cross-sectional correlation. We follow Fernando, May, and Megginson (2012) in the application of this approach and thereby ensure that cross-sectional correlation does not bias our regression results.

5. Event study and regression results

5.1. Family involvement and stock market reactions to negative Covid-related events

Table 3 explores how firms with different forms of family involvement react to negative Covid-related events. Firms with family ownership exhibit a negative but insignificant average abnormal return of −0.09% points during negative Covid-related events. In contrast, firms
with no family involvement exhibit a statistically significantly negative average abnormal return of −0.23% points (p = .003). The difference in means for family-owned vis-à-vis firms with no family involvement is 0.14% points and statistically significant (p = .012). In line with Hypothesis 1, this result suggests that family-owned firms exhibit less negative stock market reactions to negative Covid-related events. We obtain similar results for family management. Firms with family management do not statistically significantly react to negative Covid-related events, while firms with no family involvement experience negative and statistically significant average abnormal returns. Consistent with Hypothesis 2, family-managed firms exhibit statistically and economically significantly less negative stock market reactions to negative shocks during the Covid pandemic as compared to firms with no family involvement (0.20% points, p = .003).

Since the reactions of firms to negative Covid-related events are likely to be influenced by firm and industry characteristics, we explore the stock market reactions to different forms of family involvement in a multivariate setting. Our multivariate regressions comprise firms with different forms of family involvement as well as non-family firms. In Table 4, Models 1 and 2, we confirm our event study results in cross-sectional analyses, in which we regress our dependent variable daily abnormal returns on event-specific and firm-level controls (as defined in Table A of the Appendix) as well as on day and industry fixed effects. Due to not enough firms switching their form of family involvement during our eight-month sample period, we cannot use firm fixed effects, but instead employ several firm-level control variables. Throughout the different models of Table 4, the constant is statistically and economically significantly negative, indicating that the Covid pandemic negatively affects firms with no family involvement. Consistent with Hypothesis 1, Model 1 documents that family-owned firms exhibit by 0.11% points less negative abnormal returns than firms with no family involvement. This difference is statistically significant (p = .081) and economically meaningful. In line with Hypothesis 2, in Model 2, family-managed firms experience by 0.36% points less negative abnormal returns vis-à-vis firms with no family involvement. This result is statistically and economically significant (p = .000).

Due to the coexistence of family ownership and management in some of our sample firms, as documented in the correlation matrix of Table 2, our event study results could be spurious. This could mean that the less negative stock market reaction attributed to family ownership might be driven by family management. As our univariate event study analysis is unable to detect spurious correlations, we investigate this issue in our multivariate analyses in Table 4, Models 3 to 8. We include all of our form of family involvement variables simultaneously. In our baseline model (Model 3), we do not control for other firm- or industry-specific characteristics and find that family-owned and -managed firms experience statistically significantly less negative abnormal returns. In further analyses (Models 4 to 8), we show that family-owned firms do not exhibit abnormal returns that are statistically significantly different from the returns of non-family firms after simultaneously controlling for the forms of family involvement. Family-managed firms, however, experience statistically significantly less negative abnormal returns (p < .027), which is consistent with Hypothesis 2. The effect of family management is also economically meaningful and indicates higher stock market returns vis-à-vis non-family firms of between 0.17 to 0.35% points. In addition, family-managed firms exhibit statistically significantly less negative abnormal returns than family-owned firms. In model 7, for example, the abnormal returns of family-managed firms are by 0.30% points higher than for family-owned firms. This return difference is statistically significant (p = .038) and suggests that family management provides firms with relatively better short-term stock market returns during a crisis. In line with stewardship theory, our results suggest that different forms of family involvement during crises focus on different duties and hence lead to variations in financial stewardship behavior. These variations in financial stewardship result in divergent stock market reactions to family owners and managers. The results of Table 4 alleviate our positive view of family ownership and suggest that

### Table 2
Correlation matrix. This table reports the correlations for the dependent and independent variables and the respective variance inflation factors. Italicized correlations are statistically significant at p < .05. VIF = variance inflation factor.

|                | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | VIF |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|-----|
| (1) Daily abnormal returns | 1.00 | 0.01 | 0.02 | 0.00 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| (2) Family ownership dummy | 0.02 | 1.00 | 0.02 | 0.00 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| (3) Family management dummy | 0.00 | 0.02 | 1.00 | 0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (4) Family chairman dummy | -0.02 | -0.01 | -0.01 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (5) Political restrictions | -0.02 | -0.01 | -0.01 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (6) Economy disturbance | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (7) Virus expansion | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (8) Ln(Assets) | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (9) Ln(Firm age) | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (10) R&D | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| (11) Capex | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| (12) Cash & equivalents | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| (13) Leverage | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 |
| (14) Sales growth | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| (15) Return on assets | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

### Table 3
The stock price reactions of firms with family involvement to Covid-related events. This table reports the mean abnormal returns to Covid-related announcements for different forms of family involvement, e.g., family ownership and management, vis-à-vis firms with no family involvement. For mean abnormal returns, t-statistics are computed with Boehmer, Masumeci, and Poulsen’s (1991) standardized cross-sectional method and adjusted for cross-sectional correlation (Kolari and Pynn¨onen, 2010). The t-statistics for the differences in means assume unequal variances across the respective two samples and are computed with the cross-sectional variances of abnormal returns in two-tailed tests.

|                | Family involvement | No family involvement | Difference in Means |
|----------------|-------------------|-----------------------|---------------------|
|                | (1) t-stat (p value) | (2) t-stat (p value) | (1)−(2) t-stat (p value) |
| Family ownership | -0.09% (-1.43) | -0.23% (-0.21) | 0.14% (2.51) |
| Family management | -0.03% (-0.42) | -0.23% (-0.21) | 0.20% (3.00) |

2 Please refer to Table B10 of the Appendix for a detailed version of Table 4 that lists all firm-level control variables and their respective coefficients and t-statistics.
Table 4
Cross-sectional analysis of family involvement and firms’ stock price reactions to Covid-related events. This table reports the results of OLS regressions with daily abnormal returns as dependent variable to investigate the cross-sectional determinants of the market reaction to Covid-related announcements for different forms of family involvement pertaining to family ownership and management. Event-specific control variables comprise dummy variables indicating virus expansion, economy disturbance, and political restriction events. Firm-level controls are defined in Table A of the Appendix. Because sample firms share the same event periods in calendar time, we use the portfolio weighted least squares approach of Chandra and Balachandran (1992), which produces unbiased estimates of the regression coefficients.

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Constant | -0.51 | -0.69 | -0.25 | -0.23 | -0.24 | -0.60 | -0.66 | -0.65 |
| (p = .079) | (p = .226) | (p = .676) | (p = .000) | (p = .000) | (p = .014) | (p = .023) | (p = .026) |
| Family ownership dummy | 0.11 | 0.11 | 0.08 | 0.07 | 0.04 | 0.04 | 0.06 |
| (1.75) | (1.67) | (1.14) | (1.15) | (0.57) | (0.61) | (0.86) |
| (p = .081) | (p = .095) | (p = .256) | (p = .253) | (p = .566) | (p = .540) | (p = .389) |
| Family management dummy | 0.36 | 0.20 | 0.17 | 0.17 | 0.24 | 0.34 | 0.35 |
| (3.89) | (2.76) | (2.23) | (2.24) | (2.90) | (3.40) | (3.20) |
| (p = .000) | (p = .006) | (p = .027) | (p = .026) | (p = .004) | (p = .001) | (p = .002) |
| Event-specific controls | YES | YES | NO | NO | YES | YES | YES |
| YES | YES | NO | NO | YES | YES | YES |
| Day FE | YES | YES | NO | NO | YES | YES | NO |
| YES | YES | NO | NO | YES | NO | YES |
| Industry FE | YES | YES | NO | NO | YES | NO | NO |
| YES | YES | NO | NO | YES | NO | NO |
| Industry-Day FE | NO | NO | NO | NO | NO | NO | YES |
| Observations | 32,110 | 32,110 | 32,110 | 32,110 | 32,110 | 32,110 | 32,110 |
| R-Squared | 0.176 | 0.177 | 0.001 | 0.173 | 0.174 | 0.174 | 0.177 | 0.343 |

(1) the family ownership effect in Tables 3 and 4, Model 1 is spurious and actually driven by family management and that (2) literature solely studying family ownership may suffer from misleading interpretations due to spurious correlations between family ownership and management.

For brevity, we do not depict the coefficients and t-statistics of all the employed firm-level control variables. Please refer to Table B10 of the Appendix for a detailed version of Table 4 that lists all firm-level control variables and their respective coefficients and t-statistics.

5.2. Distinguishing between health, economic, and political Covid-related events

In Table 5, we investigate the reactions of firms with different forms of family involvement to specific negative Covid-related events, e.g., to virus expansion announcements, economy disturbance events, and announcements about political restrictions during the Covid pandemic. In Panel A of Table 5, our event study results reveal less negative abnormal returns of family-owned vis-à-vis non-family firms to economy disturbances and political restrictions. The difference in abnormal returns is statistically and economically significant. On average, family-owned firms experience by 0.56% point less negative abnormal returns to economy disturbance announcements than non-family firms (p = .000) and by 0.85% point less negative abnormal returns to announcements of political restrictions (p = .000). These statistically significant results are in line with Hypothesis 1. In Panel B, family-managed firms exhibit less negative abnormal returns to all three Covid-related events, indicating by between 0.19 to 1.12% points (p < .015) higher stock market returns vis-à-vis non-family firms. These results are consistent with Hypothesis 2. The results of Table 5 provide evidence that the mere focus of prior literature on news about the actual virus propagation neglects other economically more important events that more positively contribute to the relative stock market returns of firms with different forms of family involvement.

To further explore the effects of forms of family involvement on financial stewardship behavior and stock market reactions to Covid-related events, we study all of our family involvement measures in multivariate regressions. In Table 6, we document statistically significant and less negative reactions of family-managed firms to virus expansion, economy disturbance, and political restriction events. These reactions are also economically meaningful and, on average, suggest by 0.22% points less negative abnormal returns to virus expansion announcements (Model 3, p = .031), by 0.50% points less negative abnormal returns to economy disturbance events (Model 6, p = .000), and by 0.67% points less negative abnormal returns to political restrictions (Model 9, p = .002). These results are consistent with Hypothesis 2 and thus suggest that family-managed firms are less negatively affected by negative Covid-related events than non-family firms, which are subsumed in the constant. In contrast to the results of Table 5, family-owned firms do not exhibit different returns than non-family firms. We attribute this no-result for family-owned firms to spurious correlations with the family management variable that is the driver of the significant event study results for our family involvement proxies in Table 5. When we conduct a t-test for the individual differences of our forms of family involvement coefficients, we find that family-managed firms consistently achieve statistically and economically significantly higher abnormal returns than family-owned firms (p < .05). This result is consistent with family managers acting as financial stewards. However, we fail to find evidence that family owners also are financial stewards. Importantly, our results also show that family ownership is not a disadvantage relative to firms with no family involvement during a crisis, as the stock market reactions do not statistically significantly differ from non-family firms. Overall, the findings of Table 6 corroborate our conjecture that not only virus expansion events need to be analyzed, but that non-health-related events exhibit stronger stock market reactions during the Covid pandemic. For example, we find that firms with family managers exhibit by 0.28% point higher abnormal returns during economic disturbances (Model 6–3) and by 0.45% points higher abnormal returns during political restriction announcements vis-à-vis virus expansion announcements (Model 9–3). The t-test for the differences of coefficients is statistically significant (p < .02) and economically meaningful for both differences. We therefore conclude that these non-health-related events are important and thus deserve more attention in the literature.

5.3. Robustness tests and further analyses

To mitigate concerns of alternative explanations for our results we test the robustness of our results in several ways. First, to address concerns that general market trends (e.g., omitted variables) may drive our results, we conduct placebo tests (Tables B1 and B2 of the Online Appendix). In our placebo tests, we randomly assign treatment to our Covid-related announcements among our sample observations. Our placebo tests demonstrate that there is no significant effect when we do
Table 5

The stock price reactions of firms with family involvement to specific Covid-related events. This table reports the mean abnormal returns to Covid-related announcements for firms with family ownership or management vis-à-vis firms with no family involvement. Panel A compares abnormal returns for family owned firms (with at least 25% family ownership) vis-à-vis firms with no family involvement. Panel B compares abnormal returns for family management vis-à-vis firms with no family involvement. For mean abnormal returns, t-statistics are computed with Boehmer, Masumeci, and Poulsen’s (1991) standardized cross-sectional method and adjusted for cross-sectional correlation (Kolari and Pynnönen 2010). The t-statistics for the differences in means assume unequal variances across the respective two samples and are computed with the cross-sectional variances of abnormal returns in two-tailed tests. AR=Abnormal Return.

| Panel A: Family ownership vs. no family involvement |  |  |  |
| --- | --- | --- | --- |
| Events | Family ownership | No family involvement | Difference in Means |
|  | (1) Mean AR | t-stat (p value) | (2) Mean AR | t-stat (p value) | (1)-(2) Mean AR | t-stat (p value) |
| Virus expansion | -0.14% | -1.97 | -0.23% | -3.01 | 0.09% | 1.44 |
| (p = .049) |  | (p = .003) |  | (p = .049) |  | (p = .150) |
| Economy disturbance | 0.08% | 0.31 | -0.48% | -2.46 | 0.56% | 5.35 |
| (p = .759) | (p = .014) |  | (p = .014) |  | (p = .000) |
| Political restrictions | 0.05% | 0.39 | -0.80% | -2.22 | 0.85% | 4.33 |
| (p = .697) | (p = .026) |  | (p = .026) |  | (p = .000) |

| Panel B: Family management vs. no family involvement |  |  |  |
| --- | --- | --- | --- |
| Events | Family management | No family involvement | Difference in Means |
|  | (1) Mean AR | t-stat (p value) | (2) Mean AR | t-stat (p value) | (1)-(2) Mean AR | t-stat (p value) |
| Virus expansion | -0.04% | -0.68 | -0.23% | -3.01 | 0.19% | 2.47 |
| (p = .499) | (p = .003) |  | (p = .003) |  | (p = .014) |
| Economy disturbance | 0.14% | 0.77 | -0.48% | -2.46 | 0.62% | 4.87 |
| (p = .442) | (p = .014) |  | (p = .014) |  | (p = .000) |
| Political restrictions | 0.32% | 1.40 | -0.80% | -2.22 | 1.12% | 4.81 |
| (p = .161) | (p = .000) |  | (p = .000) |  | (p = .000) |

Table 6

Cross-sectional analysis of family involvement and firms’ stock price reactions to specific Covid-related events. This table reports the results of OLS regressions with daily abnormal returns as dependent variable to investigate the cross-sectional determinants of the market reaction to Covid-related announcements for different forms of family involvement pertaining to family ownership and management. Firm-level controls are defined in Table A of the Appendix. Because sample firms share the same event periods in calendar time, we use the portfolio weighted least squares approach of Chandra and Balachandran (1992), which produces unbiased estimates of the regression coefficient standard errors when abnormal returns are heteroskedastic and correlated across firms. Standard errors are clustered by firm and t-statistics as well as p values are in parentheses. FE=Fixed Effects.

| Event | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Constants | -0.56 | -0.56 | -0.56 | -0.56 | -0.71 | -0.71 | -0.71 | -0.71 | -0.71 |
| Virus expansion | -0.20 | -0.47 | -0.56 | -0.22 | -0.60 | -0.71 | -0.41 | -1.24 | -1.10 |
| (p = .000) | (p = .000) | (p = .000) | (p = .000) | (p = .000) | (p = .000) | (p = .000) | (p = .000) | (p = .000) | (p = .000) |
| Economy disturbance | 0.02 | 0.00 | 0.17 | 0.11 | 0.11 | 0.19 | 0.15 | 0.09 | 0.09 |
| (p = .830) | (p = .830) | (p = .830) | (p = .830) | (p = .830) | (p = .830) | (p = .830) | (p = .830) | (p = .830) | (p = .830) |
| Political restrictions | 0.11 | 0.18 | 0.22 | 0.19 | 0.25 | 0.50 | 0.42 | 0.45 | 0.67 |
| (p = .143) | (p = .143) | (p = .143) | (p = .143) | (p = .143) | (p = .143) | (p = .143) | (p = .143) | (p = .143) | (p = .143) |
| Firm-level controls | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Industry | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Observations | 20,720 | 20,720 | 20,720 | 7363 | 7363 | 7363 | 4027 | 4027 | 4027 |
| R-Squared | 0.158 | 0.159 | 0.161 | 0.181 | 0.183 | 0.190 | 0.216 | 0.217 | 0.231 |

not expect any effect. Hence, the results of the placebo tests mitigate the propensity that omitted variables drive our results. Second, we address concerns that differences between family firms and non-family firms may drive our results. We employ a 1:1 matching approach and match each family firm to one non-family firm based on firm size, leverage, sales growth, profitability, and cash holdings. This approach ensures that both groups of firms are similar with regard to these observable control variables: Our matched sample results are similar to our main specifications, indicating that differences across family and non-family firms do not drive our results (Tables B3 and B4 of the Online Appendix). Third, we address concerns that our results might be subject to the choice of the Fama-French-Carhart six-factor model. Therefore, we rerun our event study analyses with the following return models: Fama-French three factor (Fama & French, 1993), Fama-French-Carhart four factor (with momentum), Fama-French five factor (Fama & French, 2016), as well as the market model with the Stoxx Europe 600 and the MSCI World market indices as benchmarks. Further, we rerun our analyses without any market model and estimation period, but solely with raw returns (log returns). Our results are robust to all of these adjustments and reported in Tables B5 and B6 of the Online Appendix. Fourth, our robustness tests show that our results are robust to weighting or not weighting our sample observations (Tables B7 and B8 of the Online Appendix). In our main specifications, observations are weighted to adjust for cross-sectional correlation. Fifth, in Table B9 of the Online Appendix, we conduct further sensitivity analyses for the main results of Table 4. We obtain quantitatively and qualitatively similar results when we employ a random effects model, cluster the standard errors by day or by firm and day (two-way clustering), and use different thresholds of percentage ownership for the family ownership dummy. Sixth, Table B10 of the Online Appendix complements our main results of Table 4 with detailed information on the coefficients and t-statistics of all employed firm-level control variables that we do not depict in Table 4 for brevity. Seventh, in Table B11 of the Online Appendix we examine continuous proxies for the form of family involvement. The results of
managers as corporate leaders possess deep knowledge of the firm, are shaping actively the crisis strategy of the firm. For example, family the firm (Zahra, 2006), family managers act as stewards by relying only on family ownership proxies without considering proxies for family management (Baek, Kang, & Suh Park, 2004; Bae et al., 2012).

How do we interpret our findings? We interpret our results as follows: In contrast to family owners that have a larger focus on monitoring the firm (Zahra & Pearce, 1989), family managers act as stewards by shaping actively the crisis strategy of the firm. For example, family managers as corporate leaders possess deep knowledge of the firm, are active in weighing complex issues and trigger quick actions. These skills and their embedded position allow them to take a very active role in crisis management. In their role as crisis managers, family managers also can rely on information flows and support from their stakeholders that share the same objectives as they do. Therefore, family managers can contribute to better daily decisions, resulting in less negative stock market reactions in crises. Our findings strongly contrast with the view that family managers who are chosen from a smaller talent pool are incompetent (Bertrand & Schoar, 2006; Perez-Gonzalez, 2006) and expropriate minority shareholders in crises, e.g., through the pursuit of non-financial benefits (Chrisman, Chua, Steier, Wright & McKes, 2012; Lemmon & dressing, 2003). This non-finding might be due to the particular nature of our sample comprising only publicly listed firms in a highly-developed country with a well-developed system of corporate governance (Germany).

Which alternative explanations exist for our family management results? One alternative explanation that we can think of is the socio-emotional wealth perspective (SEW). In “normal, non-crisis” times stewardship theory and SEW differ and would lead to different outcomes regarding pro-organizational behavior. Berrone et al. (2012) document that, unlike stewardship theory, the SEW model assumes family managers to pursue selfish (family) objectives for which their firms bear the costs. According to SEW, there is a trade-off between potential gains that accrue to the firm and opportunistic, noneconomic benefits that accumulate to the families. Families therefore have incentives to deviate from pro-organizational behavior, especially in uncertain environments, when pursuing certain business actions that could result in losses and threaten the family endowment. Through opportunistic behavior families can protect their SEW. Gomez-Mejia et al. (2007) and Cruz, Gomez-Mejia, and Becerra (2010) showed that family owners decouple from firm performance to protect their SEW. The situation, however, is somewhat different in “crisis times”. Recent SEW research indicates that family firms tend to behave differently in periods of crises (Laffranchini et al., 2022; Leppäaho & Ritola, 2022), suggesting that family owners and managers feel greater pressure to improve the firm’s financial situation and reduce the risk of failure under such circumstances. This is because corporate bankruptcy would lead to the loss of the total financial wealth and SEW. Drawing on these arguments, we could therefore expect that managers would avoid adopting opportunistic SEW-oriented behaviors during the pandemic to reverse the ongoing hazardous situation. This way, also the SEW perspective can explain why family managers would weather the storm during the pandemic and why the stock market shows positive valuation effects for them.

Another alternative explanation for our results could be agency theory. Although family researchers turned to the stewardship theory, because family behavior substantially deviates from agent behavior (Madison et al., 2016), both theories could be seen as two sides of the same coin. Agency theory suggests that managers will choose opportunistic behavior and thus deviate from the goals of the principal (Davis et al., 1997; Jensen & Meckling, 1976), while stewardship theory proposes that managers behave in pro-organizational ways that align the interests of the principals and other stakeholders. Hence, agency theory has a negative view on agents, while stewardship theory has a positive view on some agents that are described as stewards. In this sense, we could also have argued that family managers as ‘good’, pro-organizational behaving agents lead to reductions in agency costs vis-a-vis other managers and thus agency theory explains our relatively more positive results for family managers. Alternatively, however, we could also have argued that non-family managers care more than family managers about their value on the labor market (Block, 2011). Yet, as in crisis times the labor market for executives is most likely down as well, non-family managers have a strong incentive to keep their current job and accordingly would also show pro-organizational behavior which would be against our findings. Prior literature identifies manifold circumstances when an agent is of a ‘good’ or ‘bad’ type; in other words, in which contexts managers behaves more like an agent or steward. A more agent-like behavior is observed in firms that have exhibited an increased maturity in terms of age, size, and stock market listing (Davis et al., 1997; Corbetta and Salvato, 2004; Le Breton-Miller et al., 2011; Miller et al., 2013; Madison et al., 2016; Neckebrouck et al., 2018). Also, corporate governance of the (family) firm determines whether managers act as stewards or agents. For example, Madison, Kellermanns, and Munyon (2017) demonstrate that agency governance with its mechanisms to control discourages steward behavior, resulting in the pursuit of individual goals. These results show that both, the personal attitude of the manager as well as the context this manager operates in can foster or diminish steward behavior.

But why do we not find a positive effect for family ownership? Our
insignificant results for family ownership suggest that during a crisis that requires quick, complex, and active decision-making, family owners may be less involved in the daily decision-making processes and more likely to act as investors that monitor the management (Daily, Dalton, & Rajagopalan, 2003; Miller et al., 2014). This interpretation would be in line with crises requiring ‘crisis managers’ and not ‘crisis owners’ or ‘crisis monitors’. This could be one reason why the stock market reactions of family-owned firms do not differ from those of widely held firms. Another reason for the insignificant results with regards to family ownership could be that stock markets do not only expect stewardship but also agency behavior of family owners in a global crisis situation. According to agency theory, family owners in a crisis primarily seek to protect their own financial interests, which negatively affects firm and stock-market performance. (Majority) family owners in crises may expropriate minority shareholders (Chrisman et al., 2012; Lemmon & Lins, 2003), which has a negative effect on the stock-market performance. While stewardship theory proposes a positive effect of family owners in crisis situations, agency theory view family owners negatively. Therefore, the two opposing effects could outweigh each other, resulting in an insignificant result for family owners.

In economic terms, our results suggest that family-managed firms exhibit by 0.17 to 0.35% points less negative abnormal returns vis-à-vis non-family firms and by 0.10 to 0.30% points less negative returns vis-à-vis family-owned firms. These economically meaningful and statistically significantly more positive reactions of family-managed firms suggest that the stock market differentiates between different forms of family involvement. When new, negative, and Covid-related information becomes publicly available, the stock market incorporates this information and revalues certain firm characteristics, e.g., different forms of family involvement. Hence, already known information about family ownership or management is complemented with new public information about negative Covid-related events. Our results are consistent with stock market participants attributing a competitive advantage in crisis management to family-managed firms and thus react more favorably to family-managed firms.

How can our study help to assess the value of stewardship behavior for other types of firms, e.g., private family firms? To the best of our knowledge, our paper is the first to provide insights into daily stock for other types of firms, e.g., private family firms? To the best of our knowledge, our paper is the first to provide insights into daily stock market reactions to situations of global crises. Hence, already known information about family ownership or management is complemented with new public information about negative Covid-related events. Our results are consistent with stock market participants attributing a competitive advantage in crisis management to family-managed firms and thus react more favorably to family-managed firms.

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Our study also has practical implications for (listed) family firms, in particular regarding their employment of family and non-family CEOs (Waldkirch, 2020) and capital market or investor communication. While it may, at first sight, appear attractive to hire an experienced non-family manager in a severe crisis situation such as the pandemic, the results of our study suggest otherwise. In our view, an important distinction needs to be made between a self-inflicted, firm-specific crisis situation and a crisis situation caused by an exogenous, global event such as the pandemic. While in a self-inflicted, firm-specific crisis situation, the hiring of a non-family manager may be perceived as a positive signal to external stakeholders or investors, the hiring of a non-family manager in a global crisis situation can be perceived as a (negative) signal that the owner family is no longer committed to the firm. The latter point has clear practical implications for family firm’s capital market and investor communication in crisis situations. Listed family firms with family CEOs should stress the fact that a (highly-committed) family CEO is running the firm being responsible to take the firm through the crisis.

7. Limitations and future research

As most empirical studies, our study has limitations that offer opportunities for future research. One potentially fruitful avenue for further research is to study long-term effects of different forms of family involvement in the context of Covid. To date, it is unclear, whether firms with family involvement may suffer less than other firms in the long run. Short-term event studies provide a short-dated assessment of the reactions of the market to specific events, but cannot provide inferences about the durability and persistence of short-term effects during the Covid pandemic. We also see a research opportunity in identifying which specific duties or stewardship behaviors of family managers contribute to the competitive advantage of family-managed firms. This study relies on the form of family involvement as distal proxy for stewardship behavior, but does not study specific stewardship attitudes of the forms of family involvement. It is beyond the scope of our paper to analyze, whether family managers’ networks, their competences and decision-making skills, or their presence and leadership in a crisis are responsible for better stock market reactions.

Furthermore, future research on the stewardship behavior of firms with family involvement could benefit from a broader scope to study cross-country differences. Our focus on publicly-listed German firms ensures a high similarity among firms and thereby provides a high internal validity to uncover the consequences of forms of family involvement on financial stewardship and stock market reactions. However, our findings cannot be generalized to other countries or jurisdictions. Another important avenue for further research concerns the resilience of private family firms and the stewardship behavior of family managers and owners in such firms. This category of firms is particularly important as they constitute the majority of firms in most economies. Private family firms differ from public family firms in that the owner family and its goals are more prominent. Moreover, they are not subject to any capital market regulation and are typically closer to their main stakeholders and their local community (Baù, Block, Discua Cruz & Naldi, 2021; Basco, 2015). With regard to the latter it would be interesting to investigate how the local roots and regional embeddedness of private family firms shape their stewardship behavior towards their home region in a situation of a global crisis. This question is of high policy importance as many (family) firms have received state aid in various forms to survive the Covid pandemic.

Moreover, we only examine the first Covid wave. This restriction ensures that Covid-related events – due to Covid’s sudden and abrupt occurrence – are exogenous to our sample firms. Stock market reactions to other Covid waves depend much more on the degree of preparation of the firms to mitigate severe Covid-induced business disruptions. In any case, it would be worthwhile to investigate, whether firms led by financial stewards prepare better for difficult market environments than other firms do.

Notwithstanding these limitations, we hope that future research can use our study as a starting point for the analysis of firm governance and firm ownership in the stock market reactions to situations of global crises.

CRediT authorship contribution statement

Joern Block: Conceptualization, Methodology, Writing – original draft, Investigation, Supervision. Lennart Ulrich: Data curation, Methodology, Writing – original draft, Investigation.

Data Availability

Data will be made available on request.
Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.jbfs.2022.100534.

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