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ABSTRACT

This study examines how large family firms react to a macroeconomic shock in terms of their internationalization depth and breadth. Building on new internalization theory and acknowledging the dysfunctional manifestations of bifurcation bias in large family-owned MNEs, we argue that an unexpected shock induces family firms to recombine their family firm-specific resources with their thus far underutilized or unequally treated nonfamily resources. This recombination allows most family firms to economize on bifurcation bias and leverage their resources as firm-specific advantages (FSAs) resulting in an increased depth and breadth of internationalization post shock (while some of them may continue to suffer from bifurcation bias). Testing our theory on a panel dataset incorporating large family-owned (compared to nonfamily-owned) MNEs headquartered in Germany before and after the global financial crisis lends support to our theory. We discuss how our study contributes to new internalization theory, to the broader IB literature on MNEs' unexpected shock response, and to family firm internationalization research.

Keywords: Family firms, MNEs, macroeconomic shock, global financial crisis, bifurcation bias, family firm-specific resources, FDI, market entry.

INTRODUCTION

Macroeconomic shocks induce firms to revisit their strategic decisions (Wenzel, Stanske, & Lieberman, 2020) and associated resource mobilization (Agarwal, Barney, Foss, & Klein, 2009). Despite the prevalence of unexpected exogenous shocks and their widespread impact for multinational enterprises (MNEs) (e.g., Kano & Oh, 2020; Oh & Oetzel, 2022), prior IB studies predominantly examine how somewhat predictable and continuous macroeconomic factors like corruption, political instability, or cultural differences affect firms' internationalization decisions such as entry, expansion, and exit (e.g., Dai, Eden, & Beamish, 2017; Holburn & Zelner, 2010). Thus, IB studies tend to focus on periods and situations of 'normality' (Andriani & McKelvey, 2007; Oh & Oetzel, 2017) and on systematic uncertainties, which MNEs can predict and prepare for (Oh & Oetzel, 2022). In contrast, the role of discontinuous and unexpected shocks (e.g., economic crises, the COVID-19 pandemic, or technological and natural disasters (Kano & Oh, 2020; Oetzel & Oh, 2014; Oh & Oetzel, 2022)) receives less research attention.

Specifically, little is known about multinational family firms and their reaction to a macroeconomic shock in terms of their internationalization (compared to nonfamily firms). This void is surprising as research outside the IB context highlights that family firms are rather resilient and differ in their response to shocks (e.g., Ciravegna, Kano, Rattalino, & Verbeke, 2020; Salvato, Sargiacomo, Amore, & Minichilli, 2020). The resilience of family firms has often been attributed to their family firm-specific resources such as their reputation, social capital, and long-term orientation (Ciravegna et al., 2020; Kano, Ciravegna, & Rattalino, 2021). Family firms can draw on these unique resources and recombine them with nonfamily resources to develop firm-specific advantages (FSAs) that can enable successful internationalization (Ciravegna et al., 2020; Kano et al., 2021).

However, recent research also points out that when responding to a macroeconomic shock, some large family-owned MNEs may not leverage their specific resources as FSAs to internationalize due to the dysfunctional manifestations of bifurcation bias (Calabrò, Chrisman, & Kano, 2022). Bifurcation bias is defined as the "de facto differential treatment of family […] assets versus nonfamily assets" (Kano & Verbeke, 2018: 158). As bifurcation bias can shape decisions regarding internationalization depth and breadth (Arregle et al., 2021), it may be a central explanation for the risk averse and sometimes inefficient internationalization even of large family-owned MNEs (Calabrò et al., 2022; Ciravegna et al., 2020). Despite the widespread consequences of macroeconomic shocks for MNEs' strategies in general and the particularities of family firms in specific, the question *how a macroeconomic shock may impact the internationalization depth and breadth of multinational family-owned firms remains largely unanswered.*[1]

We argue that a macroeconomic shock induces most multinational family (compared to nonfamily) firms to foster their internationalization depth (in terms of FDI amount) and breadth (in terms of number of foreign markets entered with FDI). We rely on new internalization theory (NIT) (rather than 'classic versions' of internalization theory) because of NIT's explicit focus on resource recombination (Arregle et al., 2021; Narula, Asmussen, Chi, & Kundu, 2019) and because FSAs can be critical determinants of recovery management following unexpected shocks (Bowman, Foulser-Pigott, & Beamish, 2022). Drawing on NIT we explain that, first, induced by a shock, most family firms *recombine their family firm-specific resources* (i.e., bonding and bridging social capital and reputation) *with (existing and new) nonfamily resources* (e.g., nonfamily executive talent, international management capabilities). By drawing more intensively on previously undervalued or unequally utilized nonfamily resources, this recombination allows for access to and a more objective evaluation

[1] Notably, Calabrò et al. (2022) recently opened the discussion around this issue for the post-pandemic world.

of post shock FDI opportunities, and reduces the uncertainty associated with these opportunities. Second, we argue that family firms exploit these FDI opportunities mainly based on their long-term orientation. While we acknowledge that some large family firms may continue to employ their resources in dysfunctional ways post shock, we explain how most of them may economize on bifurcation bias by recombining family firm-specific resources with previously undervalued or unequally utilized nonfamily (human) resources as a response to a shock. Empirically, we consider the 2008–2010 global financial crisis (GFC) as an exogenous macroeconomic shock that suddenly and broadly disrupted many sectors of the economy worldwide (Lins, Servaes, & Tamayo, 2017; Singh, Mahmood, & Natarajan, 2017). We leverage a panel dataset (2002–2013) from the Central Bank of Germany to test how the GFC impacts the internationalization depth and breadth of 112 large family and 432 nonfamily MNEs headquartered in Germany.

This study makes three contributions. First, we demonstrate that family-owned MNEs' internationalization depth and breadth increases following an unexpected macroeconomic shock. Our theory offers novel explanations on *how* family firms may recombine their family firm-specific resources with nonfamily (human) resources, when reacting to a shock, and *why* this recombination fosters greater internationalization depth and breadth post shock based on their long-term orientation. Hence, by focusing on shock induced resource recombination into FSAs and their implications for internationalization depth and breadth, we contribute to the recent discussion developed by Kano, Verbeke, and colleagues (2016, 2018, 2021) about transforming family firm resources into FSAs that can shape internationalization choices.

Second, by following recent research emphasizing the need to consider the role of unexpected shocks for multinational firms' foreign market expansion and entry (Oetzel & Oh, 2014; Oh & Oetzel, 2022), we advance the broader IB literature, which, so far, predominantly examines the role of predictable and continuous macroeconomic factors for

firms' internationalization (e.g., Daude & Stein, 2007; Holburn & Zelner, 2010). We contribute by showing that firm governance (in the form of family ownership and control) and associated unique resources are important to consider when studying how firms react in terms of internationalization depth and breadth to macroeconomic shocks.

Third, by explaining how most large family-owned MNEs post-shock economize on bifurcation bias, access FDI opportunities, and reduce uncertainty, we link-in with the recent debate on how family-owned MNEs may respond to an unexpected shock (Calabrò et al., 2022). We extend recent insights into bifurcation bias and its (dys)functional manifestations (Calabrò et al., 2022), safeguarding against this bias (Eddleston, Sarathy, & Banalieva, 2019), and family firms' longevity (e.g., Ciravegna et al., 2020). Particularly, we discuss the importance of resource recombination (treating non-family resources equally), leveraging FSAs, and a long-term orientation when revisiting investment planning following a shock.

THEORY & HYPOTHESES

Family Firms' Internationalization Depth and Breadth

We refer to family firms when a firm is majority owned and thus controlled by one or more families (Arregle et al., 2012; Gómez-Mejía, Campbell, Martin, Hoskisson, Makri, & Sirmon, 2014). Majority ownership distinguishes family 'control' from family 'influence' and implies that family members hold key positions or at least appoint those who hold them (Arregle et al., 2012). In large publicly listed firms, this governance structure ensures family control over major strategic decisions such as internationalization through FDI.

The internationalization of family firms has received considerable research attention (Arregle et al., 2021; Debellis, Rondi, Plakoyiannaki, & De Massis, 2020; Pukall & Calabrò, 2014). While studies originally debated whether family firms are more or less internationalized than nonfamily firms (Gómez-Mejía et al., 2010; Zahra, 2003), recently "scholars have argued that the search for a general relationship (i.e., whether family firms are indeed more or less internationalized than nonfamily ones) is an elusive, if not futile, task"

(Arregle et al., 2021, p. 1170). In turn, the debate moved more towards family firm heterogeneity (DeBellis, Torchia, Quarato, & Calabrò, 2022; Kano & Verbeke, 2018), the role of non-family talent (Almodóvar, Verbeke, & Rodríguez-Ruiz, 2016; Eddleston et al., 2019), and the unique context or institutional features in which their decisions are taken (Arregle et al., 2017; Berrone et al., 2020).

That said, earlier research from a variety of settings provides indications for family firms' internationalization choices in terms of breadth and depth (reviewed in Arregle et al., 2021). Studies examining smaller, private family firms, suggest (with some exceptions (e.g., Zahra, 2003)) that family firms are rather conservative in their foreign investments, resulting in lower international diversification (Carney, van Essen, Gedajlovic, & Heugens, 2015) and lower export intensity (Fernández & Nieto, 2006). Furthermore, research of larger, publicly listed family firms exhibits their cautious approach to international diversification (e.g., Gómez-Mejía et al., 2010; Van Essen, Carney, Gedajlovic, & Heugens, 2015). Studies also show that family firms' preferential treatment and (over)protection of key family-related resources (Kano & Verbeke, 2018; Kano et al., 2021), the associated reliance on personal network ties and locally bound stakeholder relationships (Arregle et al., 2021; Tsang, 2020), limited professional managerial capabilities or outsider involvement (D'Angelo, Majochhi, & Buck, 2016), and overall high resource demands (Baronchelli, Bettinelli, Del Bosco, & Loane, 2016; Xu, Hitt, & Dai, 2020) result in lower internationalization breadth due to discounting of nonfamily resources. Other studies note that family firms' bonding and bridging social capital (with family involvement in management) can foster internationalization breadth (Jimenez, Majocchi, & Piana, 2019). Breadth increases through bridging social capital, boards dominated by non-family directors often lead to higher FDI geographic scope (Debellis et al., 2022). In addition, improving relationships between equally treated family and nonfamily employees may improve human asset quality and thereby

increase internationalization (Almodóvar et al., 2016). Yet these studies offer little explanation of the conditions under which family MNEs are more likely to economize on their bifurcation bias by drawing more intensively on nonfamily resources while also treating them equally. As such, "the key difference" may be "between bifurcation biased family MNEs and all other MNEs" (Kano & Verbeke, 2018, p. 158). Therefore, we next discuss large family firms' specific resources and their potential (dys)functional contributions to these firms' internationalization.

Large Family Firms' Specific Resources and Bifurcation Bias

According to NIT, value creation in internationalization hinges on resource recombination and exploitation (e.g., Narula & Verbeke, 2015; Verbeke & Kano, 2015) and on how firms change their boundaries "to develop and utilize their FSAs when interacting with their external environments" (Grøgaard et al., 2019: 1312). NIT "is known for its resiliency, flexibility, and validity in analyzing MNEs" and explaining IB-related decisions (Narula et al., 2019; Oh & Oetzel, 2022, p. 11). Fostering a link between NIT and the family firm literature, Kano and colleagues (2021) argue that family governance serves as a platform for developing FSAs for international deployment, namely if the family firm recombines family firm-specific resources with nonfamily resources (e.g., nonfamily executive talent, international management capabilities, local knowledge) and transforms them into FSAs. Notably for economizing on bifurcation bias, it is important that in this recombination nonfamily resources are treated equally and fairly.

The family firm-specific resources that most family firms can recombine with nonfamily resources into FSAs are their (bonding and bridging) social capital, reputation, and long-term orientation (Ciravegna et al., 2020; Kano et al., 2021). *Bonding social capital* encompasses a close-knit network with trusting ties within family firms because of the presence of family members (Arregle, Hitt, Sirmon, & Very, 2007; Ciravegna et al., 2020) and greater stability

of personnel (Cruz, Gómez-Mejía, & Becerra, 2010). Furthermore, kinship, social, and historical ties in their communities as well as trusted external stakeholder relationships provide for *bridging social capital* (outside the firm) (Ciravegna et al., 2020). Bridging social capital of family firms usually pertains to existing foreign markets (Jimenez et al., 2019) but can even extend beyond these markets (Bertrand & Schoar, 2006) and facilitate FDI in new markets (Debellis et al., 2022). Most family firms care deeply about their external stakeholders and are likely to have proactive and long-lasting relationships with their suppliers and customers (Cennamo, Berrone, Cruz, & Gómez-Mejía, 2012; Hennart, Majocchi, & Forlani, 2019). Most family firm members also strongly identify with the firm and care about its *reputation*, often more so than members of nonfamily firms (Deephouse & Jaskiewicz, 2013). Studies show that most family firms are perceived as highly reliable (Bennedsen & Fan, 2014), as efficient innovators, and are known for their craftsmanship, quality products, and brands (Hennart et al., 2019; Audretsch, Lehmann, & Schenkenhofer, 2018). Finally, *long-term orientation* reflects transgenerational continuity concerns and results in the firms' long-term survival frequently taking priority over short-term returns (Bennedsen & Henry, 2016; Lumpkin & Brigham, 2011). Long-term orientation often manifests in patient capital (Kano et al., 2021; Sirmon & Hitt, 2003) and relatively lower pressure on senior managers to meet short-term goals (Berghoff & Köhler, 2020). It may also lead to avoidance of divestitures (Feldman, Amit, & Villalonga, 2016) and often more favorable evaluation of long-term projects (than in publicly listed nonfamily firms) (Zellweger, 2007). In essence, most family firms' time horizon in opportunity evaluation is longer than that of most publicly listed nonfamily firms, which are frequently driven by shorter-term financial goals and analyst expectations (Brochet, Loumioti & Serafeim, 2012; Gentry & Shen, 2013).

However, recent research also highlights that in bifurcation-biased family firms the above-mentioned resources can have dysfunctional manifestations that curtail international expansion or make family firms' internationalization inefficient (Calabrò et al., 2022). For instance, overreliance on the family firm's social capital can limit drawing on relevant nonfamily or external knowledge providers (Mazzelli, De Massis, Petruzzelli, Del Giudice, & Khan, 2020), the development of internationalization capabilities (Stadler, Mayer, Hautz, & Matzler, 2018), and reduce international partner and alliance choices (Kano & Verbeke, 2018). Unconstrained pursuit of transgenerational continuity can reduce the ability to benefit from nonfamily executives' international knowledge and capabilities and lead to high entry barriers for and distrust of the latter executives (Calabrò et al., 2022; Memili, Chrisman, & Chua, 2011). Excessive focus on grooming the next generation of family managers reduces availability and quality of managerial talent necessary for international expansion (Verbeke & Kano, 2012). Unequal treatment of nonfamily employees may curtail the required adaptation of human assets to the needs of foreign markets (Almodóvar et al., 2016). Internationalization efforts even of large family firms may be constrained by the pursuit of non-economic goals such as retention of full control through 100% ownership of foreign operations (Kano & Verbeke, 2018) or local production preferences (Ciravegna et al., 2020). Overvaluation of family heritage assets may lead to excessive internalization (Calabrò et al., 2022; Kano & Verbeke, 2018), regionally and culturally proximate usage of reputational resources (Kano et al., 2021), and lack of protection for nonfamily assets (Calabrò et al., 2022).[2] Thus, family firms may be under-utilizing their nonfamily resources and hence have lower levels of internationalization.

[2] This list of dysfunctional manifestations of bifurcation bias is not conclusive. For example, Calabrò et al. (2022) also point to political rent-seeking (e.g., through bribery or coercion) to preserve outdated family assets. However, "political rent-seeking […] will most often occur in developing economies" or markets with weak institutions (Calabrò et al., 2022: 929) and, therefore, may be less relevant in the present research context.

As several studies argue, micro- and macro-level practices safeguarding against bifurcation bias can reduce or eliminate some dysfunctional manifestations of family firm-specific resources (Kano et al., 2021; Kano & Verbeke, 2018). For instance, bifurcation bias and its dysfunctional manifestations can be curtailed by professionalization in hiring, promotion, and decision-making, business-related professional education of family members, and joint socialization of family and nonfamily executives. Not only can these firms rely consistently on nonfamily executives and treat them equally to family members, but many of the family owners of MNEs invest in the preparation of future generations for operational or supervisory roles well in advance, sometimes starting in teenage years and ensure they compete with other talent (Ciravegna et al., 2020; Leleux & Glemser, 2011). Prior research highlights that among the micro-level practices to economize on bifurcation bias the involvement, equal treatment and results-oriented appraisals of, and trust in nonfamily executive talent is essential (Eddleston et al., 2019; Kano & Verbeke, 2018) and that family firm-specific resources can only be productively deployed as FSAs when accessible to and managed by nonfamily managers (Kano et al., 2021). Professionalization of internal practices is critical for family firms to take advantage of their strengths as such practices establish mutual support and trust among firm leaders and employees (Eddleston et al., 2019) and potentially also among family and non-family members. On the macro-level, legal requirements, such as in Germany where the law mandates a division of powers among the firm's top management and its supervisory board, may reduce the occurrence of bifurcation bias (Verbeke & Kano, 2012).

That said, some dysfunctional consequences for internationalization may remain even in large professionally managed MNEs. For example, the Continental Group or Bertelsmann have revealed family driven dysfunctional decisions and managerial quarrels which undermined the potentially positive impact of competent nonfamily managers. Thus, on the

one hand, family firms possess unique resources that they can recombine with nonfamily (human) resources and draw on as FSAs for international opportunity access and exploitation; on the other hand, they suffer from bifurcation bias which may refrain them from doing so or lead to dysfunctional outcomes for internationalization (Calabrò et al., 2022). Importantly, biased and unbiased decision-making may coexist in family firms and shift over time depending on efforts to economize on bifurcation bias. Yet, what may induce most family firms to economize on bifurcation bias and leverage their FSAs for international expansion? To answer this question, we next turn to the literature on unexpected macroeconomic shocks.

Unexpected Macroeconomic Shocks and Family Firms

Unexpected shocks arise in one country or market and can have cascading effects on other countries, hence affecting MNEs globally, often requiring adaptation and revisiting strategic plans (Oh & Oetzel, 2022). Even though multinationality may enhance resilience to unexpected shocks (Puhr & Müllner, 2022), publicly listed companies focus on protecting core domestic assets and leave foreign markets in response to a macroeconomic shock (Zhou, Li, & Svejnar, 2011). Chung, Lee, Beamish, and Isobe (2010) find that subsidiaries' across-country growth orientation and associated regional networks allow for expansion in terms of sales, whereas subsidiaries focused on within-country growth contract after the Asian economic crisis. Oetzel and Oh (2014) link unpredictable shocks (e.g., natural and technological disasters) to overall lower foreign entry and expansion. However, they find that firms experienced with high impact shocks are more likely to make follow-up investments but refrain from new market entry. Pek, Oh, and Rivera (2018) find that industrial disasters reduce foreign entry, but this negative effect is mitigated by different capabilities. Recent studies also cover the role of experience and willingness to learn from other organizations to prepare firms for natural disasters, which is higher when exposed to high-impact, low frequency disasters (Oetzel & Oh, 2021). The effect of natural disasters on MNEs' entry into

disaster-affected provinces in China is contingent on proximity to other (trusted) entities such as subsidiaries of the same MNE or of MNEs from the same home country and related industries (Oh, Oetzel, Rivera, & Lien, 2020). Foreign joint venture investment (exit) following a disaster depends on higher (lower) levels of asset specificity, country as well as disaster experience (Bowman et al., 2022). In sum, prior research tends to show that macroeconomic shocks and other disasters are generally a deterrent to market entry and (follow-up) FDI (Oh et al., 2020), even leading to divestment (Buca & Vermeulen, 2017) and deglobalization (Ahlstrom et al., 2020).

Studies outside the IB literature show that often family firms are resilient to shocks and respond differently to such shocks than nonfamily firms. Most family firms recover from unexpected shocks ranging from macroeconomic crises to natural disasters (e.g., Minichilli, Brogi, & Calabrò, 2016; Salvato et al., 2020). Research into family firm longevity also highlights that during periods of macro-level shocks, family firms may recombine their specific resources, such as bonding or bridging social capital, with nonfamily resources to ensure firm survival (Ciravegna et al., 2020). Longevity depends on family firms' ability to react to macro-level shocks with "strategic responses on the part of a firm (such as readjustment of the business portfolio […]), so as to enable regeneration and renewal" (Sharma & Manikutty, 2005, p. 295). Recovery plans in family firms are also aimed at ensuring stable employment and wages. To enable such strategic responses and portfolio renewal, most family firms revisit strategic planning and can draw on their family firm-specific resources.

In the following, we explain how family firms may react to a macroeconomic shock in terms of their internationalization depth and breadth. Our rationale underlying the hypotheses encompasses two steps (cf. Figure 1). First, we argue that in reaction to a shock, most family firms economize on bifurcation bias by recombining their bonding social capital, bridging

social capital, and reputation, respectively, with nonfamily (human) resources. This recombination leads to FSAs that enhance FDI opportunity access, reduce uncertainty, and enable a more objective evaluation of these opportunities by economizing on bifurcation bias. Second, we explain why only in combination with family firms' long-term orientation this recombination results in changes in internationalization depth and breadth post shock.

--- Insert Figure 1 about here ---

In line with Calabrò et al. (2022), we follow the notion that *most* of the large family MNEs in our sample economize on bifurcation bias post shock; however, *some* of them may continue to suffer from bifurcation bias and deploy their resources in dysfunctional ways.

Hypotheses

According to Calabrò et al. (2022), post shock most family firms (on average) will pursue goals and use their resources in functional ways for international expansion, while economizing on bifurcation bias. Consistent with this prediction, we argue that most family firms increase their FDI in existing markets in reaction to a shock. First, as many foreign markets are disrupted by the shock, planning for foreign subsidiaries needs revisiting. Through bonding social capital there may be a call for support (Glaser, Fourné, Brennecke, & Elfring, 2021) or call for propping up from local subsidiaries because of the disruption caused by the shock. Following a shock, subsidiary managers may draw on their relationships and trusted bonds with headquarters to voice their concerns and ensure commitment to their foreign markets (Bertrand & Schoar, 2006). In terms of economizing on bifurcation bias, induced by the shock, most family firms may be able to recombine their bonding social capital with nonfamily managerial talent internally by involving foreign market leaders in strategic planning meetings more intensively (than in 'normal times' when family firms' strategic planning is more top-down, orchestrated from headquarters). Engagement and integration practices become more important post shock to leverage nonfamily managers'

knowledge, allowing them to openly share their local market knowledge when revisiting strategic planning. These practices also align interests of family and nonfamily managers (Ciravegna et al., 2020), likely focusing on how to recover from the shock. By interacting with nonfamily managers, ideally those possessing host country experience and administrative knowledge (Majocchi, D'Angelo, Forlani, & Buck, 2018), new opportunities to support and prop-up subsidiaries emerge and may be openly discussed in the shock induced planning process. By relying more on the international management capabilities and local knowledge of nonfamily subsidiary managers, liabilities of foreignness and uncertainty regarding expansion in existing markets is reduced. In turn, expansion opportunities are evaluated more objectively, family members' favoritism for specific existing subsidiaries may be curtailed, and opportunities are more likely to be supported both by key internal family and nonfamily stakeholders.

Because of their long-term orientation, family firms are less concerned about short-term earnings and a temporary profitability decline (Villalonga & Amit, 2010), but they tend to persevere longer with investments and have a greater tolerance for downside risk (Alessandri, Mammen, & Eddleston, 2018; Zellweger, 2007), especially in challenging times (Zhou et al., 2011). Hence, calls for additional FDI post shock that may emerge from augmenting bonding social capital may become a priority in most family firms as they are more long-term recovery focused. In contrast, most nonfamily firms, due to their more limited bonding social capital, may notice fewer opportunities to prop-up subsidiaries, and due to their usually stronger focus on short-term earnings (expectations) (Gentry & Shen, 2013) and shorter time-horizon in strategic planning (Zellweger, 2007) are more likely to refrain from such longer-term investment opportunities.

Second, through bridging social capital most family firms may detect opportunities for post shock follow-up investment (Debellis et al., 2022) and for intensifying partnerships with

suppliers and customers in existing foreign markets. A shock induces partners in a supply chain to revisit their collaboration terms (as, for instance, existing contracts may no longer be fulfilled due to supply bottlenecks in vulnerable global value chains (Ciravegna & Michailova, 2022) or due to limited access to capital (Jüttner & Maklan, 2011)). In such a scenario, most family firms benefit from enduring external stakeholder relationships (Cennamo et al., 2012), strive to continue relationships with buyers and suppliers (Feldman et al., 2016), and have better interface capabilities with their suppliers and customers (than most nonfamily firms). Post shock most family firms may economize on bifurcation bias through mutual engagement with (existing and new) suppliers and customers to align values, build trust and collective knowledge, and discuss critical issues (e.g., regarding contract fulfillment) to jointly tackle the crisis more effectively. Consistent with Ciravegna et al. (2020), we argue that family firms post shock may recombine bridging social capital with corporate diplomacy. This, in turn, may lead to information advantages and thus reduced uncertainty during times of shock and to opportunities for intensifying and creating new partnerships in existing markets. For instance, through augmenting bridging social capital family firms may also notice potential customers who have concerns about supply shortages due to the shock and are, in turn, willing to switch. Also, since most family firms may reduce bifurcation bias by discussing how to tackle the macroeconomic shock with existing and potential suppliers and customers, they may lower their hesitation to partner with foreign firms. In combination with their long-term orientation, these opportunities may be acted-upon to ensure continuity and growth "with credible mutual commitments, which involve bilateral asset-specific investment by partners" (Ciravegna et al., 2020: 120) in existing markets.

Third, most family firms may leverage their reputation in reaction to a macroeconomic shock. If family firms divested post shock, their reputation (e.g., for quality brands or long-term employment) could be threatened. Rather, they may strive to preserve the family legacy

and heritage (Feldman et al., 2016) and avoid layoffs (van Essen et al., 2015). In terms of economizing on bifurcation bias, most family firms may recombine their reputation with intensified reliance on local knowledge in order to engage in brand portfolio development in existing foreign markets. In line with research showing that reputation creates opportunities for alliances, joint ventures, or acquisitions (Gu & Lu, 2014), we argue that recombination provides additional FDI opportunities in existing markets. In conjunction with their long-term orientation, family firms may pursue follow-up FDI to signal their long-term commitment (e.g., by augmenting their brand portfolio) and to live-up to their reputation (e.g., in key regions) especially in times of shock. For instance, directly following the GFC, the family-owned Merck Group expanded in the U.S. Former CEO Karl-Ludwig Kley explained that this was a unique opportunity for building the firm's reputation and brand portfolio in North America by showing commitment to the life sciences part of the business: "We had a business in traditional Life Science products such as solvents and we had a household name for Life Science products anywhere except in the U.S." (Fuller, Edmondson, Beyersdorfer, & Labruyere, 2018: 7). His team completed a US$5.2bn acquisition of Millipore. The acquisition had a positive impact on Merck's reputation, transforming Merck into a "world-class partner […] in high growth market segments such as bio-research and -production" (Fuller et al., 2018: 8). While most nonfamily firms are likewise concerned about their reputation in key markets, they are more likely to refrain from additionally pursuing FDI to augment their brand image or portfolio post shock as this usually materializes financially only in the longer run (Davis, 2002). In sum, we argue:

> *H1: (Compared to nonfamily firms,) family firms increase their depth of internationalization in existing markets following an unexpected macroeconomic shock.*

Next, we argue that most large family MNEs increase their internationalization breadth post shock. First, it needs to be acknowledged that family firms' social capital is often selectively used (Cesinger et al., 2016) and in particular bonding social capital is often firm- and regionally-bound and may therefore limit breadth of internationalization (Arregle et al., 2021). However, second, we argue that family firms' bridging social capital can extend beyond the countries in which they operate (Bertrand & Schoar, 2006), and can be augmented post shock in a way that increases internationalization breadth by providing access to FDI opportunities in new foreign markets. The knowledge and connections underlying family firms' bridging social capital can support FDI in new markets (Debellis et al., 2022). In particular, the shock leads to concerns about home and existing markets' decline. This likely stimulates a strategic planning discussion about how to augment and leverage the family firms' bridging social capital to ensure a full recovery from the shock (e.g., through foreign market diversification). Induced by shock recovery planning, there is increased openness to consider partnerships in new markets, corporate diplomacy with a focus on new external partner familiarization and engagement augments most family firms' bridging social capital and reduces bifurcation bias (Ciravegna et al., 2020). Partner familiarization and engagement is likely to occur as both, the family firm and potential foreign organizations seek to develop recovery plans to emerge even stronger out of the crisis (Sung & Goebel, 2018). Recombining bridging social capital with corporate diplomacy ensures that foreign market knowledge of nonfamily managers of both the family firm and potential partner organizations is shared and critically discussed. This discussion about how to offset the negative impact of the macroeconomic shock can unearth FDI opportunities in previously untapped markets. This argument is in line with research showing that knowledge of new foreign market opportunities is often gathered through inter-personal ties and precedes foreign market entry (Ellis, 2000). Most family firms focus on long-term growth in the strategic planning

following an unexpected shock, and new market entry prepares for post shock growth in both nearby and emerging markets. This growth can compensate for shrinking or stagnating home market conditions.

Third, in general terms, a firm's reputation may precede a firm's entry in a foreign market and therefore ease the market entry (Lu & Beamish, 2004). For instance, the reputation for quality and reliability of most German family firms is highly regarded in many markets worldwide and most German family firms strive to uphold this reputation in face of discontinuous changes (Kammerlander & Ganter, 2015). But family firms are also selective in relying on their reputation and protect it in 'normal times'. Post shock, however, when revisiting strategic planning and discussing how to rebound from the shock, most family firms are more likely to economize on their bifurcation bias with respect to their reputation by drawing more on nonfamily managers with international management capabilities and backgrounds. This, in turn, allows for tapping into more ideas related to new markets for the recovery strategy and for more objectively assessing how and where to leverage the family firm's reputation in previously untapped markets.

FDI opportunities also become available in new markets in times of macroeconomic shock as also local firms and government institutions seek to mitigate the long-term impact of the shock and try to attract reputable firms as new investors. According to Gao et al. (2017), reputation not only leads to investment opportunity access, but also to transaction cost advantages and transactional confidence due to reduced uncertainty, which ultimately facilitates the pursuit of FDI in new markets. Also, reputation has been shown to increase the ability to choose among high quality partners (Dollinger, Golden, & Saxton, 1997) and, at least to some extent, leads to alliance and joint venture formation in new markets (Gu & Lu 2014; Stern, Dukerich, & Zajac, 2014) - when these new opportunities are considered and acted upon. Following a shock, most family firms are willing to act upon some of these

market entry opportunities and to adjust firm boundaries as they are more likely to recognize the long-term value of exploiting their reputation in new markets. Patient capital also allows for funding of alliances or JVs that have long-time horizons. Even if partnerships were rejected, through their reputation and by recombining it with new nonfamily talent, acquisition options and new greenfield investment opportunities may arise and transaction risks can be reduced for family firms (Gao et al., 2017).

In sum, recombining their family firm-specific resources with nonfamily managerial capabilities to gain access to new market FDI opportunities and acting upon them in new markets can lead to new partnerships and investments post shock, increasing breadth of FDI. In new markets, family firms will be welcome investors because of their reputation and the belief among stakeholders that the family firm "will survive crises", "fulfill its obligations" (Gao et al., 2017: 2148), and is unlikely to divest in future (Feldman et al., 2016). In times of shock, new market entry is in alignment with family firms' long-term orientation. FSA supported market entry allows most of them to diversify and ensure growth where supportive ties can be drawn upon and the firm's reputation precedes its investments, both of which reduce the uncertainty and the liability of foreignness. Hence, we argue:

> *H2: (Compared to nonfamily firms,) family firms increase their breadth of internationalization following an unexpected macroeconomic shock.*

METHODS

Sample and Data

We test our hypotheses on a dataset from the Central Bank of Germany. All Germany-based firms with a foreign subsidiary-related balance sheet value of more than €3 million are required to report their foreign investments to the Central Bank. Variables are available in the form of annual firm- and subsidiary-level observations from 2002 to 2013. As some firms may fall below the inclusion criterion and some new firms may qualify, our starting sample

comprises an unbalanced panel of 654 (4,674 firm-year observations) distinct publicly listed firms. We exclude 367 firm-year observations for foreign subsidiaries or parent firms that report zero employees or zero sales in a given year to ensure that the focal firms are active. The 593 firms (4,307 firm-year observations) of the final sample have €8.8 billion in domestic sales on average. The sample firms are in the following main industry sectors: chemicals and machinery manufacturing (34.56%), financial services (17.54%), electrical equipment and car manufacturing (16.49%), trade (12.81%), and other services (12.11%).

Measurement

Dependent variables. The first dependent variable is depth of internationalization captured by *foreign direct investment (FDI)*. We define FDI according to Central Bank standards, that is, attributable shares in the registered capital plus capital and surplus reserves, profit or loss brought forward, net profit or loss minus deficits uncovered by equity, and loans from the investor and associated companies (Fourné & Zschoche, 2020; Merz, Overesch, & Wamser, 2017). This FDI definition corresponds to those of the OECD and International Monetary Fund, except for loans to shareholders and affiliated organizations and claims on affiliated shareholders and organizations. The Central Bank's FDI figures include investments using different modes (greenfield, acquisition, and so forth). When a foreign investment is made within a joint venture, only the share of the focal parent firm is considered. On average, the firms in the sample have €508 million in FDI. Owing to skewness, we log transform the variable following convention (Wooldridge, 2015).

The second dependent variable is breadth of internationalization captured by the *number of foreign countries* (*NOC*) in which a firm has operations.

Family firm and macroeconomic shock variables. The indicator variable *family firm* takes a value of one for a family firm and zero otherwise. Family ownership is defined as the majority of a firm being owned by individuals from the same family. In this context,

institutional unit B controls enterprise A when B controls, directly or indirectly, more than half of the shareholder voting power or more than half of the firm's shares (Foreign Affiliate Trade Statistics, Article 2). This definition is in line with other studies in the family firm literature that use a high ownership threshold to be assured of full family control (Arregle et al., 2012; Gómez-Mejía et al., 2014). It is a conservative measurement as family control and, in turn, family influence is guaranteed over the internationalization decisions that we capture with our dependent variables. The investment decisions of firms classified as family firms are not strongly influenced by other large shareholders such as banks, insurance companies, or pension funds (which are common in continental Europe) (Barontini & Caprio, 2006).

We draw on the 2008–2010 GFC to capture an unexpected macroeconomic shock. Such a shock affects many sectors suddenly and simultaneously (Singh et al., 2017) since integration of the world economy facilitates shock transmission through flows of trade, information, capital, and people across borders (Oh & Oetzel, 2022). The GFC started with the mortgage crisis in the U.S., lead to the sale of Bear Stearns and later in 2008 to the bankruptcy of Lehman Brothers, and spread to financial institutions worldwide (Starkey, 2015). The shock constrained availability of capital, led to a severe deterioration of economic sentiment across the globe (Lins et al., 2017), and presented firms with unexpected 'hard times' that demanded revisiting strategic planning and developing a recovery strategy.

Post shock is an indicator variable that captures the macroeconomic shock. It takes the value of one to capture the post shock period (2011–2013) and zero otherwise.

Control variables. We control for firms' internal vulnerability, by including the *debt-to-equity ratio*, measured by a firm's foreign debt (aggregated for all foreign subsidiaries) divided by foreign equity (aggregated for all foreign subsidiaries) in a given year (Berk, Stanton, & Zechner, 2010). To control for experience in foreign markets, we measure the *duration of international activities* (Clarke, Tamaschke, & Liesch, 2013; Erramilli, 1991). As

subsidiary information is supplied as panel data from 1996, we track such duration starting in 1996. As a measure of foreign operations' unabsorbed *slack*, we include the ratio of current assets to current liabilities (Chrisman & Patel, 2012). Previous studies show that performance below or above aspiration determines a firm's strategic decisions (Chrisman & Patel, 2012; Greve, 2003). Following Chrisman and Patel (2012: 985), we construct the variable *negative aspiration gap*, for which we use the absolute value of the aspiration gap (return on assets at *t*–1 minus return on assets at *t*–2) if it is negative, and zero otherwise, making this variable right-censored. Similarly, the variable *positive aspiration gap* is a left-censored continuous variable, in which the absolute value of the gap is used if the gap is positive, and zero otherwise. We control for *firm size* as the number of employees of the corporate group. We also control for the overall *time trend* by including a variable that counts the observation years. We thus absorb the general time trend during the observation period, which might otherwise conceal the distinct changes in internationalization patterns of family and nonfamily firms during the observation period. Lastly, *industry dummies* control for effects associated with particular industries. The industry classification follows the NACE Rev. 1 categories of the European Union, developed by Eurostat. The level of differentiation is 4-digit. In our sample, firms are associated to 58 different industries. All explanatory variables and control variables are lagged by one year.

Empirical Strategy

As we compare the dependent variables for two different groups (family and nonfamily firms) in two different periods (pre and post shock), we employ a difference-in-difference design. As our attention is directed to the different reactions of family firms and nonfamily firms to the shock, typical problems associated with FDI stock data are less pronounced in our design. Investing in foreign subsidiaries does not necessarily mean that the parent firm is active in a focal location. Instead, MNEs might just make use of tax minimization or more

developed financial markets. Further, exchange rate developments might bias FDI numbers (Beugelsdijk, Hennart, Slangen & Smeets, 2010). By focusing on the change of FDI (and NOC) across two periods (pre and post shock), we mitigate the problem that absolute FDI numbers per se might be difficult to interpret.

To increase the comparability of the internationalization of family and nonfamily firms, we adopt a coarsened exact matching (CEM) approach. Studies have identified consistent differences between family and nonfamily firms, e.g., in terms of social, reputational, and financial capital (Bertrand & Schoar, 2006; Kano et al., 2021; Sirmon & Hitt, 2003). Whereas control variables may be unable to effectively capture these persistent and other differences, matching family firms and nonfamily firms can reduce the unobserved heterogeneity in the sample (Blackwell, Iacus, King, & Porro, 2009; Feldman, Amit, & Villalonga, 2016). As matching technique, CEM is preferable to other procedures (e.g., propensity score matching) because of its reliability in creating a balance between the two matched groups (Birhanu & Gambardella, 2021). The technique is implemented in STATA by the *cem* command. We match family and nonfamily firms in 2007, the year just before the shock. We match firms on domestic size as sales in the home country (four quartiles), industry affiliation (9 groups), and amount of FDI (four quartiles) to estimate the dependent variable *NOC*. When *FDI* is the dependent variable, we only use domestic size and industry affiliation for matching. Through the matching procedure, we lose 49 firms (337 firm-year observations) being unmatched with the other firms of the sample. Hence, the matched sample encompassing 544 firms (112 family firms and 432 nonfamily firms) and 3,970 firm-year observations a bit smaller than the initial sample (593 firms and 4,307 firm-year observations).

RESULTS

Table 1 depicts the main and control variables' measurements, means, and standard deviations for the entire observation period. The pairwise correlations are presented in Table

2. We also calculate the variance inflation factors (VIF), which are all close to 1. Thus, we do not detect any serious multicollinearity problems.

--- Insert Tables 1 and 2 about here ---

Figures 2 and 3 depict the mean values for FDI expenditures (Figure 2) and NOC (Figure 3) of family and nonfamily firms throughout the observation period. Both figures depict an increase in FDI and NOC in the years following the shock for the family firms as is consistent with our theory. However, there is also a general trend of both, family firms and nonfamily firms, to increase their depth and breadth of internationalization during the observation period – an issue that we account for in the multivariate regression analyses.

--- Insert Figures 2 and 3 about here ---

Before we present our regression results, we provide basic difference-in-difference findings for the two types of firms as is consistent with Amore et al. (2021). We conducted t-tests to investigate whether there are significant differences in the mean values of both dependent variables pre and post shock for family firms and nonfamily firms, respectively. Table 3 shows that pre shock, nonfamily firms have significantly higher FDI than family firms. Both types of firms increase their FDI during the shock. As a result, post shock, the FDI of nonfamily firms is still significantly higher than the FDI of family firms; however, the difference is smaller and less significant than before the shock. Table 4 depicts that pre shock nonfamily firms have a significantly higher NOC than family firms. However, following the shock, only family firms significantly increase the NOC. Consequently, the difference in NOC between family firms and nonfamily firms is no longer significant post shock. Altogether, the t-tests reveal that family firms significantly increase their internationalization depth and breadth after the macroeconomic shock. Nonfamily firms, on the other hand, only significantly increase their depth of internationalization but not the breadth. Again, these

descriptive results must be treated cautiously given the overall time trend, which might bias the outcome. Therefore, we next perform more fine-grained statistical analyses.

--- Insert Tables 3 and 4 about here ---

Table 5 reports the results of the matched-sample panel estimations to test our hypotheses. We performed Hausman tests (Hausman, 1978) for both dependent variables in order to clarify whether a fixed-effects or a random-effects estimation is more appropriate. Both Hausman tests comparing otherwise identical models with random-effects and fixed-effects clearly support the null hypothesis that the two are consistent with a *p*-value of 0.0000. The support of the null hypothesis leads to the conclusion that the random-effects estimator is efficient while the fixed-effects estimator is not. Hence, we employ a random-effects estimation. We used a pooled sample of the pre and post shock periods with indicators for *family firm* and *post shock* (and their interactions) to test our hypotheses in Model 2 (FDI) and Model 4 (NOC).

--- Insert Table 5 about here ---

In Model 1 (Table 5), we use *FDI* as the dependent variable and include the control variables and independent variables only (baseline model). We find that the *family firm* indicator is negative and significant ($\beta = -0.680$; $p = 0.001$), which indicates that family firms in general undertake less FDI than nonfamily firms. H1 suggests that induced by the shock family firms increase their FDI. Consistent with our theory, we find a significant and positive coefficient on the interaction of *family firm* and *post shock* ($\beta = 0.203$; $p = 0.003$) in Model 2. In terms of effect size, we see that family firms experience a 19.36% increase in the relative share of FDI expenditures while nonfamily firms experience a 13.15% decrease in the relative share of FDI expenditures post shock. Thus, we find support for H1. As Figure 4 reveals, the FDI expenditures of family firms increase relative to the FDI expenditures of nonfamily firms post shock.

--- Insert Figure 4 about here ---

In Model 3, we use *NOC* as the dependent variable. The *family firm* indicator variable is negative and insignificant (β = -1.428; p = 0.106). H2 suggests that induced by the shock, family firms increase their internationalization breadth compared to nonfamily firms. The coefficient on *family firm x post shock* (Model 4) is significant and positive (β = 0.754; p = 0.010) lending support for H2. Analyzing the effect sizes, we find that family firms see a 12.68% increase in the relative share of NOC post shock, whereas nonfamily firms see a decrease of 8.49% in the relative share of NOC. As Figure 5 reveals, the NOC in which family firms have invested increase relative to the NOC in which nonfamily firms have invested post shock.

--- Insert Figure 5 about here ---

Robustness Tests

To further corroborate our findings, we conducted four robustness checks (cf. Tables OA1-OA4 in the Online Appendix). First, we used a set of dummies corresponding to the individual years before and after the shock (Table OA1). We see that in the two years prior to the shock (2006 and 2007), the interaction of the time dummy and the family-firm indicator variable is not significant. In 2008, the first year of the shock, family firms significantly (but only at a 10% level) increase NOC compared to nonfamily firms. From 2009 onwards to 2012, the interactions of the family firm indicator and the year dummies are positive and significant for FDI and NOC, which further supports our hypotheses.

In the second robustness check (Table OA2), we estimated our main models (Table 5) with fixed effects and find similar results for the hypotheses tests. Third, we performed the analyses with an unmatched sample instead of a CEM-matched sample (Table OA3). The unmatched sample results are even slightly stronger, which, however, may be driven due to heterogeneity in size and other factors and not due to the differences between family and nonfamily firms.

Fourth, we calculated the average cultural distance between the host countries and the home country in a given year. Results (Table OA4) suggest that family firms reduce the cultural diversity within their international subsidiary portfolio after the shock.

DISCUSSION

In this study, we drew on NIT to explain how an unexpected shock induces family firms to recombine their family firm-specific resources with nonfamily (human) resources. This recombination allows most family firms to economize on bifurcation bias and leverage their resources as firm-specific advantages (FSAs) for fostering internationalization depth and breadth post shock. To test our hypotheses, we studied the GFC in the years 2008 - 2010 as a macroeconomic shock and how it impacted the internationalization of 112 large family (compared to 432 nonfamily) MNEs headquartered in Germany.

Contributions to theory

Prior studies suggest that family firms can (but not always do) recombine their family-specific resources with nonfamily resources for internationalization (Kano et al., 2021). We also know that family firm-specific resources can have both functional and dysfunctional consequences that may affect family firms' international expansion following a shock (Calabrò et al., 2022). Accordingly, Verbeke and Kano (2018) highlight bifurcation bias as a key explanatory factor in internationalization decision-making that distinguishes family firms with bifurcation bias from other firms. We contribute to this conversation by developing a novel theoretical explanation on how a macroeconomic shock may trigger most family firms to recombine their family-firm specific resources with nonfamily (human) resources and by outlining why this leads to increased international depth and breadth. This way, we also advance prior research which predominantly explains international governance and location choices (when drawing on NIT (e.g., Kano et al., 2021)).

In terms of internationalization depth, according to our theory, family firms invest to prop up subsidiaries, leveraging both their bonding and bridging social capital and the firm's reputation in existing markets. Family firms have been shown to "invest generously to enhance value for all stakeholders" (Le Breton-Miller, Miller, & Lester, 2011: 704) – we find that this may hold true internationally especially in times of a shock (although it needs to be acknowledged that some family firms may continue to deploy some family-related resources in dysfunctional ways, withhold them, or may not treat non-family resources equally).

Furthermore, as a firm's reputation needs to be reinforced continually (Mariconda, Zamparini, & Lurati, 2021), increasing internationalization depth is one way of doing so for family firms, showing increasing commitment in existing markets. It may be interesting for future research to uncover not only the impact of FSAs in family firms on their internationalization decisions, but also what these decisions mean for the continued development of the family firm-specific resources. Our research leaves open whether and when bifurcation bias may increase or reappear and lead to more affect-based decision-making regarding family firm-specific resources once the threat of the shock disappears and recovery progress is satisfactory to the family firm owners. Accordingly, more research into the temporal nature and consequences of bifurcation bias is needed.

Our theory and findings concerning internationalization breadth may also challenge the notion that family firm-specific resources may restrict entry into new markets (as highlighted in the review by Arregle et al., 2021). We infer from our study that recombination of resources with nonfamily managerial talent and insights, strengthening their influence post shock, and relying on their international market expertise in the recovery planning, can in fact lead to more internationalization breadth. This is in line with D'Angelo et al. (2016) who demonstrate that employing professional managers and opening decision-making to external influences safeguards against bifurcation bias and is positively associated with international

scope of smaller family-owned firms. Lohe et al. (2021) explain that for large German firms nonfamily intervention is best to mitigate family members' biases and foster the combination of complementary managerial skills. We encourage future research to probe deeper into the contributions of and equal treatment of nonfamily managers and on other circumstances (e.g., uncertainty or unexpected threats) in which their contributions may be particularly welcome.

Our research also advances the broader IB literature, which has a long tradition of examining the role of predictable and continuous macroeconomic, policy, and institutional factors and the effects of experience with such factors for firms' internationalization (García-Canal & Guillén, 2008; Dai et al., 2017; Daude & Stein, 2007). We advance this literature by 'linking-into' the timely debate on the implications of unforeseen macroeconomic shocks for firms' internationalization (e.g., Oetzel & Oh, 2014; Oh & Oetzel, 2022). In this regard, we respond to the call by Ciravegna et al. (2020: 127) "to examine processes of correcting ex post ill-adapted governance, as a response to or triggered by changes in the macro-environmental context." We show that firms do not react equally to unexpected shocks, but that the governance mode—in our case family ownership—and its associated specific resources warrant explicit consideration. Whereas prior research largely agrees that firms become more cautious regarding FDI in response to a macroeconomic shock (Benito, 1997; Buca & Vermeulen, 2017), insights from our study suggest that a shock can change prior patterns: it may lead to a revisiting of strategic and investment plans – but with a more objective lens due to the involvement of nonfamily managers and with more open-mindedness towards changing the status quo.

Based on these and related insights showing that governance mode shapes market entry choices (Sestu & Majocchi, 2020), future research may examine other types of governance. For instance, the study by Grøgaard et al. (2019) compares state-owned with privately-owned enterprises and examines how the unique resources of the former (e.g., non-economic

motivations, higher risk tolerance) feed forward into different foreign entry mode choices. In line with their notion to bring corporate governance logic into NIT, we encourage researchers to examine if and how the specific resources and associated FSAs implied by other types of governance mode (e.g., profit versus non-profit governance mode, state ownership, co-operatives) are recombined in reaction to a shock and why they are (or are not) useful for and may explain changes of such firms' internationalization. Moreover, while our paper focuses on a specific macroeconomic shock and its implications, it may be interesting for future research to reflect on how other types of shocks (e.g., health crises, natural or technological disasters) may impact family firms' and other types of firms' internationalization.

Our study also contributes to the recent debate on how family-owned firms may respond to an unexpected shock. Calabrò et al. (2022) discuss how the COVID-19 pandemic as a macroeconomic shock affects the internationalization of family-owned multinational enterprises. The authors argue that family firms' response to the pandemic with regards to internationalization is dependent on their unique goals, governance, and resources and how they deploy them. According to their discussion of the positive and negative aspects of family firm-specific characteristics, most family firms will pursue globalization strategies post-pandemic, while some may move in the opposite direction. We contribute to this discussion by explaining how resource recombination, leveraging FSAs, and a long-term orientation when revisiting investment planning following a shock and developing a recovery strategy for the family-owned MNE can foster internationalization depth and breadth. We advance extant knowledge also by focusing on German family firms' reaction to the GFC as a macroeconomic shock. We discuss how micro- and macro-level practices safeguarding against bifurcation bias can reduce or eliminate dysfunctional manifestations of family firm-specific resources. Future research may account for sample- and time-specific contributions of (dys)functional family firm-specific resources, as these depend not only on firm

characteristics (such as professionalization) and on the home-country institutional setting, but also on changes in macro-level situations.

Furthermore, we infer cautiously from our findings that post shock family firms' goals focus more than pre shock on stable international growth by increasing internationalization depth and breadth. This may be to guarantee the utilization of capacity (also in the home market, especially when it stagnates or declines), prevent layoffs (van Essen et al., 2015), and support a slow socialization of new talent, thereby augmenting bonding social capital. Also, growth is needed to proactively develop bridging social capital and can buttress the firms' reputation. As such, the pursuit of stable growth in reaction to a macroeconomic shock is a key consideration in family firms' recovery planning. These insights from their reaction to a shock add to research about family firm's longevity (e.g., Ciravegna et al., 2020; Lumpkin & Brigham, 2011) and their long-term orientation (Zellweger, 2007).

Lastly, the results from our cultural distance robustness tests resonate with family firms finding "it more attractive to diversify […] where they can take advantage of their experience and knowledge" (Gómez-Mejía et al., 2010: 229). Culturally related investments increase the ability to leverage especially human asset-based FSAs and the family firm's reputation and thereby reduce liabilities of foreignness. While increasing internationalization breadth usually adds complexity to the MNE and liabilities of foreignness as subsidiaries likely face different aspects of dissimilarity between the home and the new host markets (Denk, Kaufmann, & Roesch, 2012), understanding and being responsive to the respective local business environments is easier if firms enter and remain in culturally similar markets.

Limitations and Additional Future Research Implications

Our study faces several limitations. First, although our empirical analysis draws on an extensive dataset, we lack the ability to match those data with other variables of interest to probe deeper into family control. For example, although we can be assured of family control

and involvement in FDI decisions, we have no information on the exact decision-making mechanisms within the firms in the sample. That said, the family firm classification in this study follows the legal definition, which comes with a fiduciary duty. Future studies could present a microfoundations perspective to explore, for instance, the effects of different psychological makeups of family firms' top management teams. Microfoundations research could account more precisely for family members' board and executive positions (Boellis, Mariotti, Minichilli, & Piscitello, 2016), top managers' share ownership, or incentive systems (Alessandri et al., 2018) when examining how key resources are treated and when analyzing the effects of a shock.

Second, our theory focuses on family firm governance and these firms' specific resources as the underlying theoretical rationale. We are unable to directly measure the family firm-specific resources and their recombination in our study, which is, however a limitation that pertains to many prior family firm internationalization studies (e.g., Amore et al., 2021; Sestu & Majocchi, 2020). We encourage future research to capture family and nonfamily firms' (bridging and bonding) social capital, reputation, and long-term orientation when studying these firms' internationalization more directly.

Third, a firm's home market and its institutions may play a role in explaining not only the presence of unique resource endowments (Berrone et al., 2020), but also how they may curtail the dysfunctional manifestations of bifurcation bias. Consistent with Kano and Verbeke (2018: 179), who outline that "accurate operationalization and quantification of bifurcation bias" remains a major challenge, we are unable to account for the extent to which the firms suffer from bifurcation bias. In our research context of large German family firms, the division of power is mandated by the two-tier structure of a firm's top management team and its supervisory board (Stadler et al., 2018). These regulations may lead to a less biased prioritization and more equal treatment of family and non-family resources (Verbeke &

Kano, 2012). Despite the professionalization of the family firms under study, we identify meaningful differences in their internationalization compared to nonfamily MNEs. To this end, we deem the findings from our research context of large, professionally managed MNEs headquartered in a developed central European economy to be rather conservative.

Fourth, focusing on large family firms from Germany limits the generalizability of our study. Germany as a country of origin may enable family firms to leverage their strengths when internationalizing, for instance, by benefitting from a reputation for quality and prestige (Eddleston et al., 2019; Edman, 2016). Future research may replicate our study with family firms from different countries.

CONCLUSION

Forging a link between the literature on macroeconomic shocks and NIT, we developed theory to explain how large family-owned MNEs respond to an unexpected macroeconomic shock and why this leads to changes in their internationalization depth and breadth. We explained that post shock most large family firms overcome bifurcation bias by recombining key family resources with equally treated nonfamily (human) resources and curtail the associated dysfunctional issues for international expansion. Rather, they develop FSAs which they can leverage for post shock international expansion with reduced uncertainty both in existing and new markets.

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FIGURES AND TABLES

Figure 1: Graphical depiction of the two-step theoretical rationale underlying the hypotheses

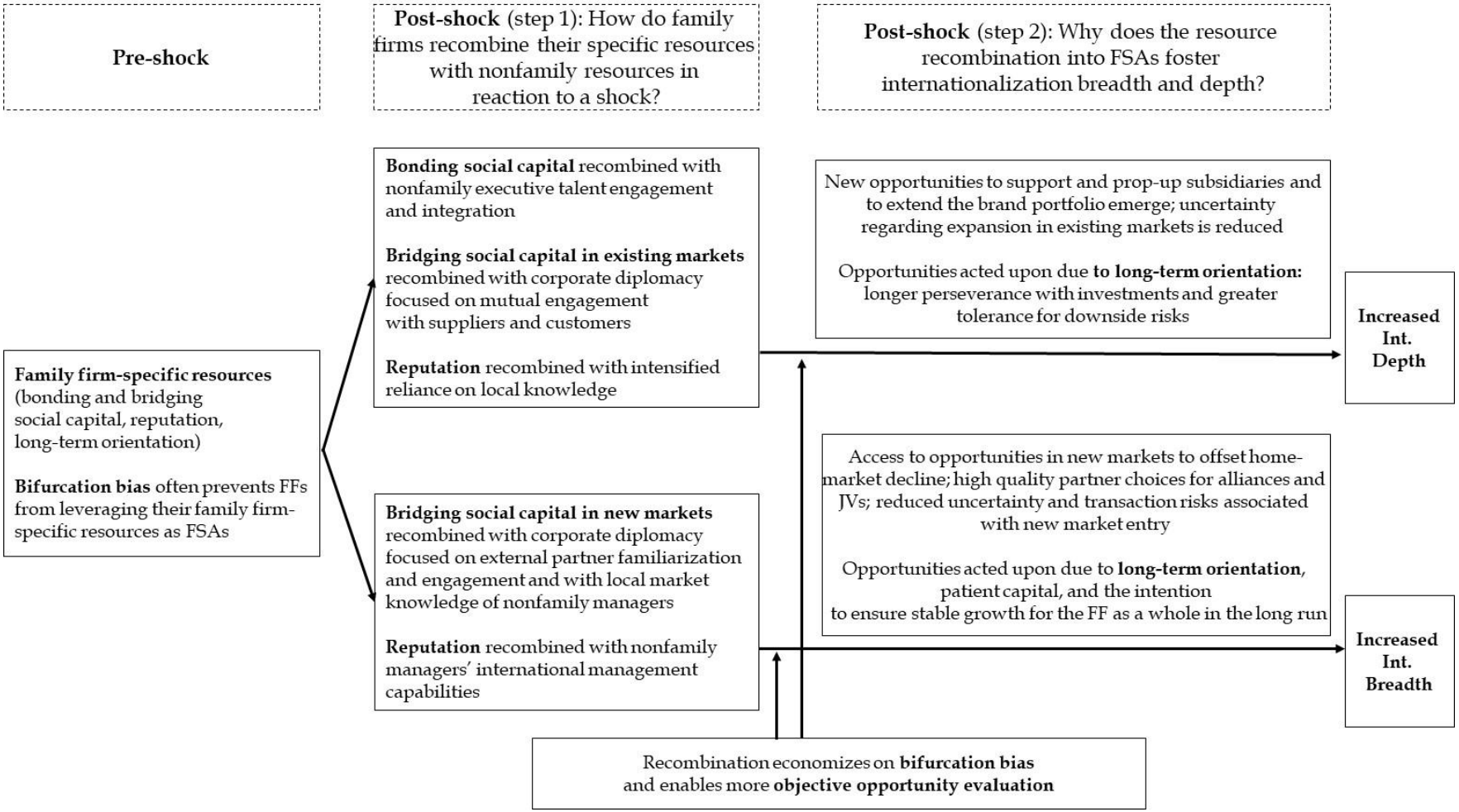

Figure 2: Mean values for FDI expenditures of family firms and nonfamily firms during observation period

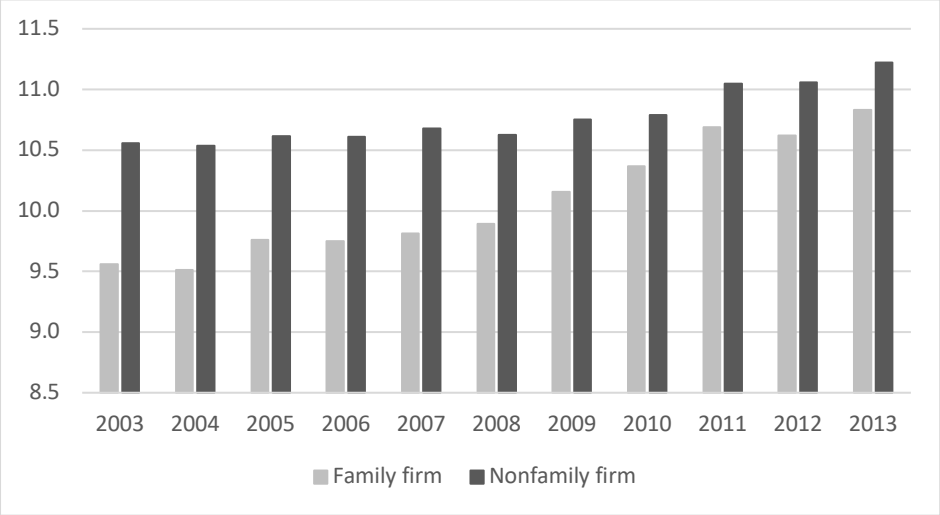

Figure 3: Mean values for NOC of family firms and nonfamily firms during observation period

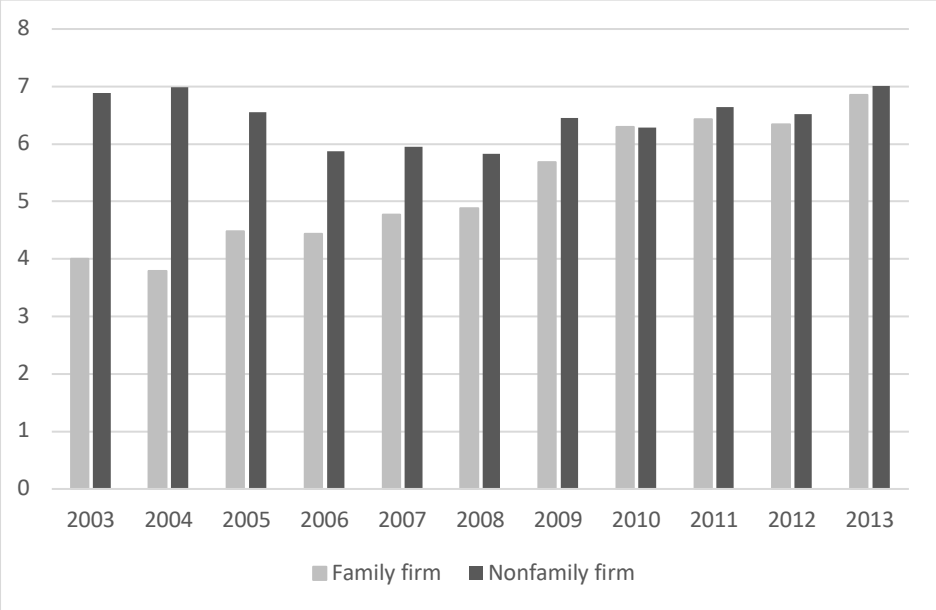

Figure 4: Interaction effect: dependent variable FDI

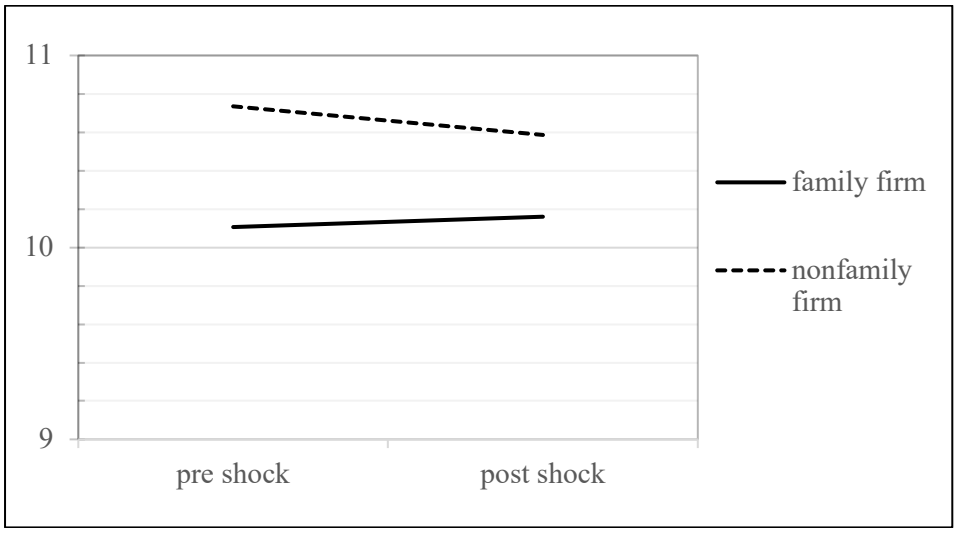

Figure 5: Interaction effect: dependent variable NOC

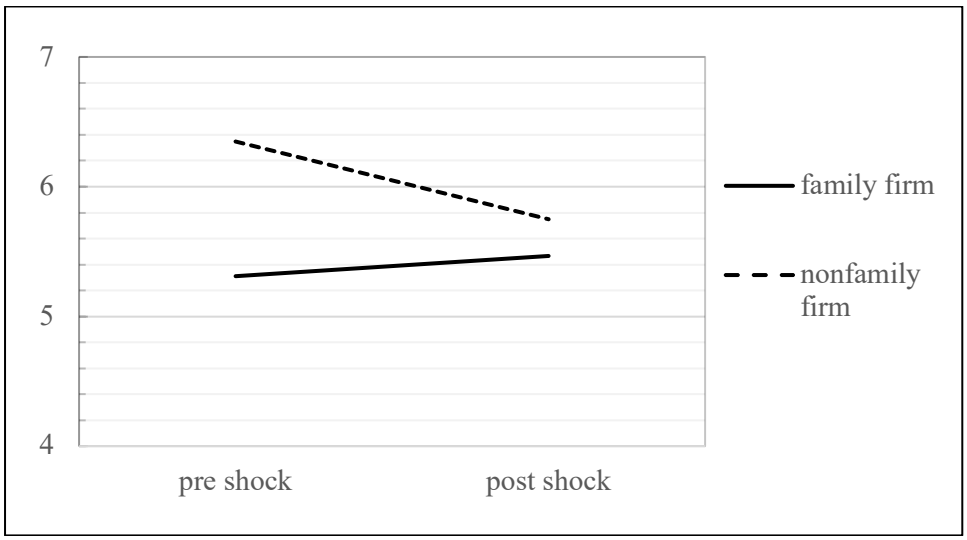

Table 1: Measurement and descriptive statistics

Variable	Measurement	Mean	S.D.
FDI	Stock of foreign direct investment in foreign operations (log transformed)	10.71	2.11
NOC	Number of foreign countries a firm has operations in	6.32	8.93
Family firm	1 if firm is owned by a family or private individual	0.21	0.41
Post shock	1 if years = 2011-2013	0.17	0.38
Debt-to-equity ratio	Foreign debt / foreign equity	3.08	26.08
Duration of international activities	Number of years since first foreign operation (available since 1996)	8.65	4.07
Slack	Assets / liabilities within the foreign operations	3.24	13.07
Positive aspiration gap	Absolute value of return on assets (in t–1 minus return on assets in t–2) if it is positive and zero otherwise	0.04	0.50
Negative aspiration gap	Absolute value of return on assets (in t–1 minus return on assets in t–2) if it is negative and zero otherwise	-0.03	0.19
Firm size	Number of employees corporate group	37,458.78	84,453.9
Time trend	Count of observation years, starting with 1 in the first year	6.17	2.96

Number of observations: 3,970

Table 2: Pairwise correlations of variables

	Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	*FDI*	*1*										
2	*NOC*	0.68*	1									
3	*Family firm*	-0.13*	-0.05*	1								
4	*Post shock*	0.07*	0.02	0.01	1							
5	*Debt-to-equity ratio*	0.03	-0.01	-0.01	0.00	1						
6	*Duration of int. activities*	0.26*	0.21*	0.06*	0.44*	0.00	1					
7	*Slack*	-0.03	-0.05*	-0.02	-0.01	-0.02	-0.02	1				
8	*Positive aspiration gap*	-0.04*	-0.03	-0.02	-0.01	-0.00	-0.01	0.06*	1			
9	*Negative aspiration gap*	0.04*	0.05*	0.03	-0.02	0.02	-0.01	-0.05*	0.02	1		
10	*Firm size*	0.44*	0.40*	-0.16*	0.01	0.03	0.08*	0.01	-0.02	0.02	1	
11	*Time trend*	0.10*	0.02	0.00	0.67*	0.01	0.61*	0.02	0.01	-0.04*	0.00	1

Note: Number of observations: 3,970; * $p<0.05$.

Table 3: Difference in FDI

	Nonfamily firms (1)	Family firms (2)	Difference (2)-(1) (3)
Pre shock (1)	10.695	9.961	-0.735 (0.000)
Post shock (2)	11.139	10.719	-0.420 (0.014)
Difference (2)-(1)	0.444 (0.000)	0.759 (0.000)	0.315 (0.149)

Note: This table provides t-test comparisons of the average foreign direct investment (FDI) for family firms and nonfamily firms before and after the shock. *p*-values for the differences are reported in parentheses.

Table 4: Difference in NOC

	Nonfamily firms (1)	Family firms (2)	Difference (2)-(1) (3)
Pre shock (1)	6.313	5.026	-1.287 (0.003)
Post shock (2)	6.758	6.585	-0.173 (0.421)
Difference (2)-(1)	0.445 (0.843)	1.559 (0.004)	1.114 (0.219)

Note: This table provides t-test comparisons of the average number of countries (NOC) for family firms and nonfamily firms before and after the shock. *p*-values for the differences are reported in parentheses.

Table 5: Matched-sample random effects estimation of international operations

	FDI Model 1	FDI Model 2	NOC Model 3	NOC Model 4
Family firm * post shock (H1 & H2)		**0.203 (0.067) *0.003***		**0.754 (0.291) *0.010***
Family firm	-0.680 (0.213) *0.001*	-0.711 (0.213) *0.001*	-1.428 (0.884) *0.106*	-1.543 (0.885) *0.081*
Post shock	-0.105 (0.037) *0.004*	-0.149 (0.040) *0.000*	-0.435 (0.159) *0.006*	-0.599 (0.171) *0.000*
Debt-to-equity ratio	0.001 (0.000) *0.007*	0.001 (0.000) *0.007*	0.003 (0.002) *0.123*	0.003 (0.002) *0.123*
Duration of international activities	0.145 (0.023) *0.000*	0.145 (0.022) *0.000*	0.521 (0.093) *0.000*	0.520 (0.093) *0.000*
Slack	0.001 (0.001) *0.377*	0.001 (0.001) *0.403*	-0.002 (0.004) *0.602*	-0.002 (0.004) *0.573*
Positive aspiration gap	0.031 (0.023) *0.170*	0.031 (0.023) *0.167*	-0.052 (0.098) *0.597*	-0.051 (0.098) *0.602*
Negative aspiration gap	-0.079 (0.059) *0.179*	-0.081 (0.058) *0.165*	0.030 (0.253) *0.907*	-0.020 (0.253) *0.936*
Firm size	1.91e-6 (3.36e-7) *0.000*	1.96e-6 (3.36e-7) *0.000*	0.000 (1.44e-6) *0.000*	0.000 (1.45e-6) *0.000*
Time trend	-0.062 (0.023) *0.007*	-0.062 (0.023) *0.007*	-0.335 (0.095) *0.000*	-0.335 (0.095) *0.000*
Constant	10.163 (1.720) *0.000*	9.016 (1.690) *0.000*	3.661 (7.007) *0.601*	3.609 (7.006) *0.606*
Industry dummies	Included	Included	Included	Included
R^2 (overall)	0.285	0.287	0.235	0.236

Note: All estimations are from a matched sample of family (112) and nonfamily firms (432). Models 1-4 are random effects estimations of Foreign Direct Investment (FDI) and the number of countries (NOC). Standard errors in parentheses; *p*-values in italics; no. of observations: 3,970.

Multinational family firms' internationalization depth and breadth
following the global financial crisis

Online Appendix: Robustness Tests

To further corroborate our findings regarding family-owned MNEs' internalization depth and breadth following an unexpected macroeconomic shock, we conducted four robustness checks. First, we provide a more fine-grained analysis using a set of dummies corresponding to the individual years before and after the shock (cf. Table OA1). We see that in the two years prior to the shock (2006 and 2007), the interaction of the time dummy and the family-firm indicator variable is not significant. In 2008, the first year of the shock, family firms significantly (but only at a 10% level) increase NOC compared to nonfamily firms. From 2009 onwards to 2012, the interactions of the family firm indicator and the year dummies are positive and significant for FDI and NOC, which further supports our hypotheses.

In the second robustness check (Table OA2), we estimated our main models (Table 5 in the main manuscript) with fixed effects and find similar results for the hypotheses tests.

Third, we performed the analyses with an unmatched sample instead of a CEM-matched sample (Table OA3). The unmatched sample results are even slightly stronger, which, however, may be driven due to heterogeneity in size and other factors and not due to the differences between family and nonfamily firms. Hence, the unmatched sample confirms the results of the more conservative CEM-matched sample regression.

Fourth, as prior studies have found that family firms enter more culturally related markets (Gómez-Mejía et al., 2010), we inspected whether this may also be apparent following a shock. By focusing on culturally related markets family firms may be able to draw on their FSAs (in particular, the firm's reputation and bridging social capital) in order to mitigate liabilities of foreignness (at least to some extent). We collected data on cultural distance and used them as an additional dependent variable (see Table OA4). First, we use the cultural dimensions

developed by Hofstede (1980) (Model 1). Following previous work (Chang & Rosenzweig, 2001), we calculate the square root of the sum of the squared differences between the four cultural dimensions of the respective host countries and Germany. Second, we use the cultural index by the GLOBE Study (House et al., 2004) (Model 2). In both cases, we calculate the average cultural distance between the host countries and the home country in a given year. Both measures deliver identical results: the interaction of family firm and post shock is negative and significant, suggesting that family firms reduce the cultural diversity within their international subsidiary portfolio after the shock. Culturally close expansion is consistent logic of leveraging FSAs and with ensuring resilience post shock also across new markets by avoiding (at least to some extent) liabilities of foreignness. It resonates with family firms finding "it more attractive to diversify […] where they can take advantage of their experience and knowledge" (Gómez-Mejía et al., 2010: 229), i.e., where it is easier to leverage their human asset-based FSAs and their reputation.

Table OA1: Dynamic effects of family ownership

	FDI Model 1	NOC Model 2
Family firm * Shock $_{t = 2006}$	0.050 (0.088) *0.569*	0.563 (0.379) *0.137*
Family firm * Shock $_{t = 2007}$	0.124 (0.087) *0.155*	0.529 (0.376) *0.160*
Family firm * Shock $_{t = 2008}$	0.058 (0.092) *0.530*	0.707 (0.396) *0.074*
Family firm * Shock $_{t = 2009}$	0.258 (0.096) *0.007*	0.928 (0.415) *0.025*
Family firm * Shock $_{t = 2010}$	0.184 (0.098) *0.059*	0.984 (0.421) *0.020*
Family firm * Shock $_{t = 2011}$	0.270 (0.096) *0.005*	1.047 (0.416) *0.012*
Family firm * Shock $_{t = 2012}$	0.293 (0.100) *0.003*	1.418 (0.431) *0.001*
Constant	10.114 (1.694) *0.000*	11.169 (6.969) *0.109*
Controls	Included	Included
Industry dummies	Included	Included
R^2 (overall)	0.270	0.230

Note: All estimations are from a matched sample of family (112) and nonfamily firms (432). Models 1 and 2 are random effects estimations of Foreign Direct Investment (FDI) and the number of countries (NOC). Standard errors in parentheses; *p*-values in italics; no. of observations: 3,970.

Table OA2: Matched-sample fixed effects estimation of international operations

	FDI Model 1	NOC Model 2
Family firm * post shock	**0.191** **(0.067)** ***0.004***	**0.709** **(0.290)** ***0.014***
Family firm	Omitted (FE)	Omitted (FE)
Post shock	-0.146 (0.039) *0.000*	-0.585 (0.169) *0.001*
Debt-to-equity ratio	0.001 (0.000) *0.005*	0.003 (0.002) *0.104*
Duration of international activities	0.083 (0.005) *0.000*	0.188 (0.022) *0.000*
Slack	0.001 (0.001) *0.318*	-0.002 (0.004) *0.683*
Positive aspiration gap	0.035 (0.023) *0.116*	-0.042 (0.098) *0.666*
Negative aspiration gap	-0.090 (0.058) *0.119*	-0.020 (0.251) *0.935*
Firm size	1.08e-6 (3.47e-7) *0.002*	7.95e-6 (1.51e-6) *0.000*
Time trend	Omitted (FE)	Omitted (FE)
Constant	9.954 (0.041) *0.000*	4.454 (0.179) *0.000*
Industry dummies	Omitted (FE)	Omitted (FE)
R^2 (overall)	0.128	0.174

Note: Models 1 and 2 are fixed-effects estimations of Foreign Direct Investment (FDI) and the number of countries (NOC). By design, the main effects that are time invariant are omitted. Standard errors in parentheses; *p*-values in italics; no. of observations: 3,970.

Table OA3: Unmatched-sample random effects estimation of international operations

	FDI Model 1	NOC Model 2
Family firm * post shock	**0.206 (0.067) *0.002***	**0.761 (0.291) *0.009***
Family firm	-0.712 (0.213) *0.001*	-1.545 (0.884) *0.081*
Post shock	-0.146 (0.039) *0.000*	-0.592 (0.170) *0.000*
Debt-to-equity ratio	0.001 (0.000) *0.007*	0.003 (0.002) *0.122*
Duration of international activities	0.143 (0.022) *0.000*	0.513 (0.093) *0.000*
Slack	0.001 (0.001) *0.415*	-0.003 (0.004) *0.563*
Positive aspiration gap	0.032 (0.023) *0.165*	-0.051 (0.098) *0.603*
Negative aspiration gap	-0.080 (0.058) *0.168*	0.023 (0.252) *0.929*
Firm size	1.95e-6 (3.35e-7) *0.000*	1.14e-5 (1.44e-6) *0.000*
Time trend	-0.061 (0.023) *0.007*	-0.330 (0.095) *0.000*
Constant	8.668 (1.681) *0.000*	2.144 (6.972) *0.758*
Industry dummies	Included	Included
R^2 (overall)	0.292	0.236

Note: Models 1 and 2 are random effects regressions of Foreign Direct Investment (FDI) and number of countries (NOC). Standard errors are in parentheses, and *p*-values are in italics; no. of observations: 4,307.

Table OA4: Matched-Sample Random Effects Estimation of Cultural Distance (measured with Hofstede and GLOBE)

	Hofstede Model 1	GLOBE Model 2
Family firm * post shock	**-1.974 (0.748) *0.008***	**-0.098 (0.033) *0.003***
Family firm	4.416 (1.700) *0.009*	0.222 (0.074) *0.003*
Post shock	1.027 (0.443) *0.021*	0.030 (0.019) *0.123*
Debt-to-equity ratio	-0.014 (0.005) *0.003*	-0.001 (0.000) *0.000*
Duration of international activities	-1.507 (0.195) *0.000*	-0.068 (0.009) *0.000*
Slack	0.105 (0.032) *0.001*	0.006 (0.001) *0.000*
Positive aspiration gap	0.267 (0.253) *0.292*	0.012 (0.011) *0.261*
Negative aspiration gap	1.245 (0.679) *0.067*	0.046 (0.030) *0.122*
Time trend	1.239 (0.202) *0.000*	0.060 (0.009) *0.000*
Constant	23.415 (0.927) *0.000*	1.060 (0.040) *0.000*
R^2 (overall)	0.085	0.101

Note: Models 1 and 2 are random-effects estimations of cultural distance measured with Hofstede and GLOBE, respectively. Standard errors are in parentheses, and p values are in italics, no. of observations: 3,818.