A meta-analysis of the financial performance of family firms: Another attempt

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ABSTRACT

This study presents the results of a meta-analysis of the financial performance of family firms. Drawing on a sample of 380 studies, we find that family firms show an economically weak, albeit statistically significant, superior performance compared to non-family firms. Furthermore, we find moderating factors to significantly condition the relationship. These results show that the positive effect of family firms on financial performance is more pronounced in samples of public and large firms and when an ownership definition of family firms is used. It is also notable that family firms do best when their performance is assessed by ROA, a measure that is not as influenced by financial structure as ROE. Based on the broad empirical evidence obtained, we discuss implications and avenues for future research.

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Introduction

There has been a long and controversial debate in family business research about the performance differences between family and non-family firms. Scholars have presented arguments both in favour of and against the superior performance of family firms. Family altruism and family nepotism proponents, for example, suggest a negative effect of being a family firm on performance (Bloom & Van Reenen, 2007; Pérez-González, 2006), whereas those insisting on a long-term orientation and lower owner-management agency costs suggest a positive effect (Audretsch, Hülsbeck, & Lehmann, 2013; Miller & Le Breton-Miller, 2005). These conceptual differences have been mirrored in the many empirical works on the topic.

In attempting to reconcile such conflicting findings, O'Boyle, Pollack, and Rutherford (2012) conducted a meta-analysis of the performance differences between family and non-family firms. In aggregate, they found a small and insignificant positive effect of family involvement on firm performance (effect size = 0.006). In addition, they detected little evidence of moderating influences on

the country, firm, or study levels. Two related but more restrictive meta-analyses were conducted on family firm performance effects for large public US firms by Carney, van Essen, Gedajlovic, and Heugens (2013) and van Essen, Carney, Gedajlovic, and Pursey (2014). Given the weak statistical results and the relatively small sample sizes of these prior meta-analyses.[1] We believe that the question of whether family firms differ from other firms in performance has not yet been answered conclusively. We attempt to contribute to the debate in the present paper.

Our meta-analysis incorporates 380 primary studies from 41 countries. Thus, the likelihood that we would not find a statistically meaningful effect due to small sample size is greatly reduced. Our results show that in 61% of our primary studies, a positive effect of family governance on financial performance is observed (Table 3). Our meta-analysis also confirms that this effect is statistically significant but economically relatively small. More importantly, there is much heterogeneity in effect sizes, and some significant conceptual and study-specific moderators influence the relationship between family firm governance and financial performance. For example, the superior performance of family

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[1] There were 95 studies in O'Boyle et al. (2012), 78 studies in Machek, Brabec, and Hnilica (2013), 48 studies in Carney et al. (2013), and 74 studies in van Essen et al. (2014).

firms becomes stronger when an ownership definition of family firms is used. Other important moderators are firm size, public listing, and the performance measure used. The breadth and depth of studies included in this analysis and the painstaking consideration of moderating factors adds credibility to our contribution.

The remainder of our paper is organised as follows. The next section introduces our dataset of primary studies, our variables, and the specific meta-analysis method employed. The section that follows shows our results, which are then discussed in the final section.

Data and method

To obtain articles on the performance of family firms, we undertook a comprehensive literature search, encompassing four steps. First, we used the procedure of ancestry by searching and tracking the references of related previously published meta-analyses or review articles (Basco, 2013; Carney et al., 2013; O'Boyle et al., 2012; Stewart & Hitt, 2012) and two highly cited journal articles on family firm performance research (i.e., Anderson & Reeb, 2003; Villalonga & Amit, 2006). Second, we conducted a comprehensive keyword search in various bibliographic electronic databases including Google Scholar, JSTOR, EBSCOhost, and China National Knowledge Infrastructure (http://www.cnki.net/). To obtain as many potentially relevant articles as possible, we employed broad search terms.[2] Third, we conducted a manual issue-by-issue search of scholarly journals that publish family business research.[3] Fourth, we corresponded with authors who participated in a leading family business conference (The Annual Conference of the International Family Enterprise Research Academy (IFERA) in 2012 and 2014) and sent out emails via mailing lists (e.g., the Academy of Management Entrepreneurship List), explaining the goal of our research and asking for unpublished or in-press articles on our topic. After obtaining the papers, we examined each one for potential inclusion in our study. To be included in our meta-analysis, the paper had to report either a correlation or a regression coefficient that showed the focal relationship between family firm governance and performance. We excluded papers that used self-reported performance measures because we sought to focus our investigation on objective outcomes. Table A1 in the appendix lists the primary studies that were included in our analysis. An overview of the inclusion and exclusion criteria is presented in Table 1. The full references of our primary studies are available on the website www.familyfirms.de.

After identifying the papers for inclusion in our meta-analysis, we coded each one. Our coding was designed to extract as much information as possible from each primary study. A senior researcher and two junior researchers coded the primary studies and checked the information drawn. The senior researcher created a coding protocol to extract the relevant information from the primary studies. The junior researchers were trained on how to use the coding protocol to ensure that the coding would be consistent among the three coders. All primary studies were carefully coded by the first coder (the senior researcher) and checked consecutively by the two other coders.

In our coding, we differentiated among family ownership, family management, a combined measure of the two, and self-reported family business classification. For the performance measures, we distinguished among ROA, ROE, ROS, sales growth and market-to-book value. We coded several conceptual moderators: a firms' listing

Table 1
Inclusion and exclusion criteria for primary studies.

A. Inclusion criteria
 1. Primary studies showing either correlation and/or regression coefficients between the focal variables were considered.
 2. Family firms were explicitly defined in primary studies and measured by dummy, percentage, or self-reported variables. Both ownership, management, and combined definitions of family firms were considered.
 3. Studies with a wider definition of family firms that also include founder firms were considered and marked by an indicator variable. Studies without a family firm measure and only a founder firm measure were <u>not</u> considered.
 4. Performance was measured in primary studies with ROA, ROE, ROS, sales growth, or market-to-book value.
 5. We included effect sizes from peer reviewed articles, working papers, PhD theses, and master's theses and effect sizes calculated from relevant unpublished datasets.
 6. No restriction regarding time, language, research field, and geography were applied.
 7. Primary studies with public, private and mixed samples were included.

B. Exclusion criteria
 1. Qualitative primary studies were excluded.
 2. Studies with only founder firm measures were excluded.
 3. Studies with self-reported performance measures were excluded.
 4. Studies with extreme effect sizes were removed as a result of the outlier diagnostics.

on the stock market, firm size, and Hofstede's cultural dimensions (Hofstede, Hofstede, & Minkov, 2010) to investigate the effect of country differences on family firm performance. We also coded study-specific moderators (publication status, year of publication, and journal quality). Table 2 presents the construction of the variables used in our meta-analysis.

Our focal measures in the primary studies were correlation and regression coefficients. To compare regression and correlation coefficients, we converted the former into partial correlations using the Peterson and Brown (2005) formula. To justify the aggregation of these coefficients into a composite variable, we conducted a t-test. It revealed no significant difference between the correlations and partial correlations ($t = -0.41$, $p = 0.68$). Thus, the aggregation was justified (O'Boyle et al., 2012). Because some primary studies reported multiple effect sizes, we followed Hunter and Schmidt (2004) and averaged these to compute the general mean effect size per study to achieve independence among effect sizes for different studies. In the final step, we transformed effect sizes into Fisher's z measures to reduce the skewness of the distribution.

We employed the Hedges and Olkin Meta-Analysis technique (HOMA), opting for a *random effect* analysis to estimate the mean effect size of a distribution of effects (Borenstein, Hedges, Higgins, & Rothstein, 2009). This approach allows us to make a more realistic unconditional inference of an overall average effect size of a population of studies that is larger than the set of sampled studies (Field, 2001). In addition, we addressed the possible variation in the mean effect size of our *random effect* meta-analysis with subgroup and sensitivity analyses based on our moderator variables. The residual heterogeneity is accounted for by the restricted maximum likelihood estimator. Although the *random effects* model overestimates variability and yields larger confidence intervals, it represents the more conservative approach (Overton, 1998) because its estimators are approximately unbiased and efficient (Raudenbush, 2009; Viechtbauer, 2005). For the analysis we employed the R metafor package described in Viechtbauer (2010).

Results

Outliers, publication bias, and distribution of effect sizes across primary studies

As the first step in our empirical analysis, we computed outlier statistics. The analyses consisted of standardised residuals

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Table 2
Variable definitions.

Variables	Definition
Overall relation	Effect size reported in the primary study concerning the relationship between family firms and performance
Conceptual moderators	
Family firm measure	
Family ownership	Dummy is 1 if a family ownership measure is used in the primary study
Family management	Dummy is 1 if a family management measure is used in the primary study
Combined measure	Dummy is 1 if a combined measure based on ownership, management, and/or control is used in the primary study
Self-reported	Dummy is 1 if a self-reported family measure is used in the primary study
Performance measure	
ROA	Dummy is 1 if the dependent variable effect size is return on assets (ROA); return is measured either through earnings before interests and tax (EBIT), earnings before interest tax depreciations, and amortisation (EBITDA), or net income (NI)
ROE	Dummy is 1 if the primary study uses return on equity (ROE) as a performance measure
ROS/profit margin	Dummy is 1 if the primary study uses return on sales (ROS) or profit margin as a performance measure
Sales growth	Dummy is 1 if the primary study uses sales growth as a performance measure
Market-to-book value	Dummy is 1 if the primary study uses market-to-book value or Tobin's Q as a performance measure
Listed on stock market	
Only public firms	Dummy is 1 if the primary study uses a sample of only publicly listed firms
Private and mixed	Dummy is 1 if the primary study uses either a mixed sample (both public and private firms) or a sample of only private firms
Firm size	
SMEs	Dummy is 1 if the primary study uses a sample of only small- and medium-sized firms (SMEs)
Large firms	Dummy is 1 if the primary study uses a sample of only large firms
Country culture	
Individualism low/high	Dummy is 1 if the sample in the primary study is from a country where the Hofstede value of individualism is greater (smaller) than the median of the Hofstede values of all included primary studies
Power distance low/high	Dummy is 1 if the sample in the primary study is from a country where the Hofstede value of the power distance of a country in a primary study is greater (smaller) than the median of the Hofstede values of all included primary studies
Masculinity low/high	Dummy is 1 if the sample in the primary study is from a country where the Hofstede value of masculinity is greater (smaller) than the median of the Hofstede values of all included primary studies
Uncertainty avoidance low/high	Dummy is 1 if the sample in the primary study is from a country where the Hofstede value of uncertainty avoidance is greater (smaller) than the median of the Hofstede values of all included primary studies
Study-specific moderators	
Publication status	
Published	Dummy is 1 if the primary study is published in a journal
Unpublished	Dummy is 1 if the primary study is a working paper, a PhD thesis, or a master's thesis
Year of publication	
Before 2008	Dummy is 1 if the primary study is published between 1980 and 2007
2008 – 2009	Dummy is 1 if the primary study is published between 2008 and 2009
2010 – 2012	Dummy is 1 if the primary study is published between 2010 and 2012
After 2012	Dummy is 1 if the primary study is published in 2013 and beyond
Journal quality	
low/high Hirsch-factor	Dummy is 1 if the primary study is published in a journal with a Hirsch factor (h-factor) greater (smaller) than the median of the h-factor of all included primary studies

(standardised z values) to identify outliers. We kept the values in the interval of $[-2; 2]$ and removed 19 effect sizes lying outside this interval (Viechtbauer & Cheung, 2010). To check for publication, selection and availability bias, we computed a funnel plot, presented in Fig. 1. Such biases exist when authors have a preference for statistically significant results or when the primary studies included are a biased sample of all existing studies on this topic (Hunter & Schmidt, 2004; Stanley, 2005; Lipsey & Wilson, 2006). In the absence of publication bias, the effect sizes from small primary studies with small sample sizes are spread out on the bottom of Fig. 1. Otherwise, the effect sizes of primary studies with a large sample size narrow towards the peak. The heterogeneity in the funnel plot, however, shows that such biases are unlikely and suggests the appropriate conditions for conducting a meta-analysis (Geyskens, Krishnan, Steenkamp, & Cunha, 2009).

Our descriptive statistics provide an initial indication of the performance consequences of being a family firm. They show that 61% of our primary studies reported a positive performance effect. This number reduces to 55% when a management-based family firm definition is used, and it reduces further to 51% when the primary study uses a sample consisting only of SMEs. By contrast, using ROA as a performance measure increases the share of primary studies with a positive family firm performance effect to
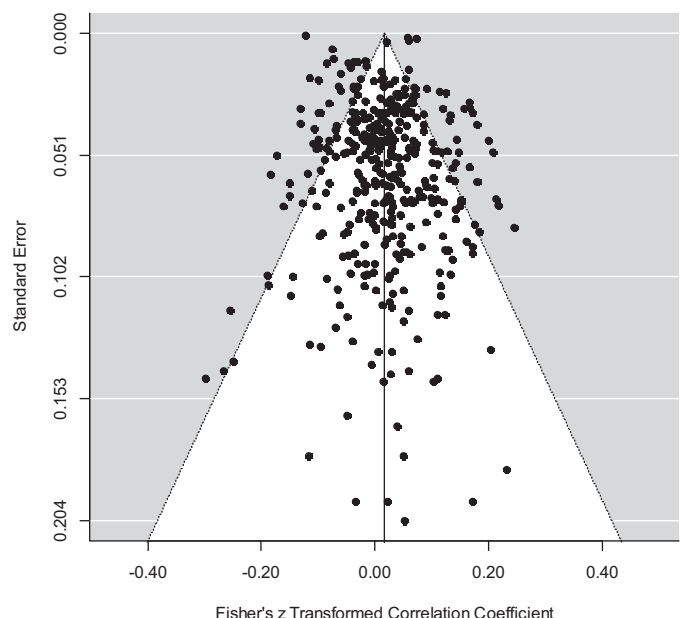

Fig. 1. Funnel plot

Table 3
Summary statistics of meta-analysis sample.

	Number of effects	Percentage of positive effect sizes
A. All primary studies	380	61.3%
B. Primary studies by performance measures		
ROA	137	73.7%
ROE	23	60.9%
ROS/profit margin	8	37.5%
Sales growth	25	52.0%
Market-to-book value	90	55.6%
C. Primary studies by family firm definitions		
Family ownership	221	62.4%
Family management	55	54.5%
Combined measure	75	56.0%
Self-reported	22	54.5%
D. Primary studies by countries		
USA	91	61.5%
Italy	27	59.3%
Taiwan	25	72.0%
Germany	22	63.6%
Spain	22	50.0%
Switzerland	17	70.6%
China	14	64.2%
Malaysia	11	54.5%
Canada	10	50.0%
South Korea	10	50.0%
Other countries	131	60.3%
E. Primary studies by publication status		
Published	261	58.6%
Working paper	92	68.5%
PhD thesis	16	56.3%
Master's thesis	11	72.0%
F. Primary studies by journals		
Family Business Review	34	55.9%
Journal of Family Business Strategy	16	50.0%
Corporate Governance: An International Review	14	64.3%
Entrepreneurship Theory and Practice	14	61.5%
Journal of Small Business Management	11	45.5%
Journal of Management Studies	12	58.3%
Other journals	160	59.4%
G. Primary studies by publication year		
Before 2008	95	66.3%
2008–2009	63	60.3%
2010–2012	109	58.7%
After 2012	112	58.0%

74%. Table 3 provides an overview of the primary studies included in our sample. It also shows the percentages of positive effects for each category of primary studies.

To obtain more detailed findings, we compiled a meta-analysis that incorporated both main effects and conceptually derived and study-specific moderating factors.

Meta-analysis: main effect

Table 4 presents the results of the meta-analysis. The findings show that overall, family firms outperform non-family firms. The mean effect size (ES) is 0.017. The 95% confidence interval (CI) does not include the zero, and hence, the effect is statistically significant (Hedges & Olkin, 1985). This evidence is based on $k = 380$ studies, including $N = 1,561,622$ firms. The Q-statistic displays the homogeneity of the effect size. Its highly significant value suggests that there likely exist moderators that explain the great variability in effect sizes. Thus, we tested for conceptual and study-specific moderators.

Meta-analysis: conceptual moderators

First, we moderated for different measures of family firms, differentiating among various family firm definitions: family ownership, family management, a combination of the two, and self-reported family firm classification. Our findings reveal that using an ownership-based definition has a significant effect on performance (ES = 0.033, $p < 0.01$), whereas a management-based definition (ES = −0.000), a definition based on a combined measure (ES = 0.008), and a self-reported classification (ES = 0.013) do not yield significant results. Furthermore, a z-test indicates that using an ownership-based definition has a significantly stronger effect on performance than a management-based definition ($z = 2.16$; $p < 0.05$) or a definition based on a combined measure ($z = 1.81$; $p < 0.10$), whereas the effect is not significantly different between an ownership-based definition and a self-reported family firm classification ($z = 1.54$; $p = 0.12$).

Distinguishing the overall effect between different types of firm performance, we find a significant impact for ROA (ES = 0.044, $p < 0.01$) but no significant impact on performance measured by ROE (ES = 0.012), ROS (ES = −0.018), sales growth (ES = 0.002), or market-to-book value (ES = 0.011). The difference in effect size is statistically significant between ROA versus ROE ($z = 1.93$; $p = 0.05$), sales growth ($z = 2.96$; $p < 0.01$) and market-to-book value ($z = 2.11$; $p < 0.05$). The meta-analytic findings do not indicate a significant difference between ROA and ROS ($z = 1.48$; $p = 0.14$; note: ROS is used by only eight primary studies in our sample).

We also distinguished studies according to whether the firm was publicly listed. The association with performance is significant in samples of public firms (ES = 0.024, $p < 0.01$) and insignificant in samples of private and mixed firms (ES = 0.008); the difference in these effect sizes is, in fact, significant ($z = 2.07$; $p < 0.05$).

In distinguishing between SMEs and large firms, we find an insignificant impact of family firms on performance for SMEs (ES = 0.001) and a significant effect for large firms (ES = 0.020, $p < 0.01$), and the difference between the two effect sizes is again significant ($z = −2.10$; $p < 0.05$).

Using Hofstede's national culture variables, we moderated for the effect of individualism, power distance, masculinity, and uncertainty avoidance. We find a significant impact of family firms on performance in countries with low levels of individualism (ES = 0.012, $p < 0.10$) and in those with high levels of individualism (ES = 0.021, $p < 0.01$); the difference in effect size is insignificant ($z = −1.09$; $p = 0.28$). The relationship between family firms and performance is significant in low power distance countries (ES = 0.022) and insignificant in high power distance countries (ES = 0.010); however, the difference between these effect sizes is insignificant ($z = 1.33$; $p = 0.18$). We find the association between family firms and performance to be significant in countries with low masculinity scores (ES = 0.017, $p < 0.01$) and those with high masculinity scores (ES = 0.018, $p < 0.05$); again the coefficients do not significantly differ ($z = −0.18$; $p = 0.86$). In countries with low uncertainty avoidance, firm performance is positively influenced by family governance (ES = 0.025, $p < 0.01$), whereas this is not the case in countries with high uncertainty avoidance (ES = 0.007). Here, the difference in effect sizes is statistically significant ($z = 2.13$; $p < 0.05$).

Meta-analysis: study-specific moderators

We also considered study-specific moderators to account for differences in publication status (published versus unpublished),

Table 4
Results of meta-analysis.

	k	N	ES	s.e.	z	−95% CI	+95% CI	Q-test	I^2	z-test	p-value
Overall relation	380	1,561,622	0.0167***	0.0040	4.2	0.0089	0.0246	12,199***	90.71	90.71	
Conceptual moderators											
Family firm measure											
Family ownership	221	727,253	0.0330***	0.0062	5.3	0.0209	0.0451	1,548***	93.47	Reference category	
Family management	55	36,697	−0.0001	0.0140	0.0	−0.0275	0.0273	213***	81.56	2.16	0.03**
Combined measure	75	792,044	0.0084	0.0121	0.7	−0.0154	0.0321	1,306***	94.22	1.81	0.07*
Self-reported	22	14,661	0.0127	0.0116	1.1	−0.0100	0.0354	30*	34.17	1.54	0.12
Performance measure											
ROA	137	432,394	0.0439***	0.0076	5.8	0.0290	0.0587	743***	91.39	Reference category	
ROE	23	22,138	0.0118	0.0148	0.8	−0.0172	0.0409	68***	72.54	1.93	0.05*
ROS/profit margin	8	6,778	−0.0181	0.0411	−0.4	−0.0986	0.0625	24***	80.62	1.48	0.14
Sales growth	25	254,861	0.0016	0.0121	0.1	−0.0221	0.0252	210***	80.77	2.96	0.00***
Market-to-book value	90	77,919	0.0105	0.0139	0.8	−0.0167	0.0377	1,452***	91.63	2.11	0.04**
Listed on stock market											
Only public firms	209	141,825	0.0241***	0.0056	4.3	0.0131	0.0351	812***	69.83		
Private and mixed	171	1,419,797	0.0077	0.0056	1.4	−0.0033	0.0187	11,207***	93.87	2.07	0.04**
Firm size											
SMEs	63	218,894	0.0010	0.0079	0.1	−0.0144	0.0164	254***	58.24		
Large firms	317	1,342,728	0.0202***	0.0046	4.4	0.0112	0.0291	9,620***	91.12	−2.10	0.04**
Country culture											
Individualism											
Low	158	794,776	0.0117*	0.0065	1.8	−0.0010	0.0244	1,605***	75.87		
High	185	188,787	0.0211***	0.0057	3.7	0.0099	0.0322	558***	73.34	−1.09	0.28
Power distance											
Low	197	908,014	0.0216***	0.0056	3.9	0.0107	0.0326	3,449***	85.04		
High	146	80,859	0.0101	0.0066	1.5	−0.0029	0.0231	391***	61.19	1.33	0.18
Masculinity											
Low	251	221,351	0.0165***	0.0050	3.3	0.0067	0.0263	721***	71.30		
High	92	762,212	0.0182**	0.0082	2.2	0.0021	0.0344	1,138***	77.26	−0.18	0.86
Uncertainty avoidance											
Low	183	182,305	0.0250***	0.0057	4.4	0.0137	0.0362	510***	72.73		
High	160	801,258	0.0069	0.0063	1.1	−0.0055	0.0193	1,556***	76.03	2.13	0.03**
Study-specific moderators											
Publication status											
Published	261	867,152	0.0160***	0.0051	3.1	0.0060	0.0260	2,845***	79.58		
Unpublished	119	694,470	0.0184***	0.0063	2.9	0.0061	0.0307	1,063***	91.57	−0.30	0.77
Year of publication											
Before 2008	95	55,297	0.0306***	0.0083	3.7	0.0144	0.0468	264***	64.56	Reference category	
2008–2009	63	34,951	0.0225**	0.0109	2.1	0.0010	0.0439	204***	69.34	0.59	0.55
2010–2012	109	385,484	0.0165**	0.0073	2.3	0.0023	0.0308	1,006***	88.32	1.28	0.20
After 2012	112	1,085,490	0.0037	0.0068	0.5	−0.0097	0.0171	6,833***	92.92	2.51	0.01***
Journal quality											
Low Hirsch	72	34,641	0.0186**	0.0096	1.9	−0.0002	0.0373	158***	57.34		
High Hirsch	87	53,146	0.0243***	0.0093	2.6	0.0061	0.0425	305***	72.43	−0.43	0.67

k: Number of effect sizes.

N: Total sample size is based on the number of firms in the primary studies.

ES: All effect sizes (ES) were variance weighted. Significance is based on a z-test.

s.e.: Standard error of ES.

CI: Confidence interval.

Q-test: Homogeneity analysis: chi-squared statistic indicating whether the heterogeneity variance is greater than zero; based on z-transformation (see Hedges and Olkin (1985) p. 235).

I^2: Ratio of the study variance due to heterogeneity; low < 0.25; middle < 0.50; strong < 0.75. If $Q <$ df $I^2 = 0$.

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level.

year of publication split into quantiles within our data (before 2008, 2008–2009, 2010–2012, and after 2012) and journal quality (low versus high Hirsch Index). We find a significant effect for both published (ES = 0.016, $p < 0.01$) and unpublished (ES = 0.018, $p < 0.01$) papers, and the difference is insignificant ($z = 0.05$; $p = 0.96$). Studies published before 2008 (ES = 0.031, $p < 0.01$), between 2008 and 2009 (ES = 0.023, $p < 0.05$) and between 2010 and 2012 (ES = 0.017; $p < 0.05$) show a positive and significant influence of family firms on performance.

However, studies published after 2012 (ES = 0.007) show a positive but insignificant effect. The difference in effect size is significant between studies published before 2008 and studies published after 2012 ($z = 2.51$; $p = 0.01$). Finally, studies published in lower-ranked (ES = 0.019, $p < 0.05$) as opposed to higher-ranked journals (ES = 0.024, $p < 0.01$) both show a significant effect of family firms on performance; the difference in effect sizes is not statistically significant ($z = −0.43$; $p = 0.67$).

Robustness checks

To render our meta-analysis comparable to prior studies on the topic (e.g., Carney et al., 2013; O'Boyle et al., 2012; van Essen et al., 2014), we did not exclude primary studies that used samples consisting only of family firms. When we excluded these, our sample size fell from 380 to 279 firms. However, the reduced sample yields results similar to those reported above[4]: the overall family-performance relationship becomes slightly stronger (ES = 0.020, $p < 0.01$ versus ES = 0.017, $p < 0.01$). Moreover, the moderator analyses show similar results. We find, for example, that family firms show the best performance for a family ownership definition (ES = 0.031, $p < 0.01$), an ROA performance measure (ES = 0.039, $p < 0.01$) and a sample of publicly listed (ES = 0.028, $p < 0.01$) and large firms (ES = 0.022, $p < 0.01$). Another robustness check concerns the outliers that were removed based on the outlier diagnostics. When including the 19 outliers in our sample, we obtain an ES of 0.018 ($p < 0.01$) for the overall relation, which is very similar to our main result (ES = 0.017, $p < 0.01$).

Discussion and conclusion

Discussion of the main effects results

Certainly, the overall tendency in the findings is that there is a positive association between a firm's status as a family business and its financial performance. This finding is encouraging for those who wish to lay to rest the notion that family governance is a liability – hardly a surprising conclusion considering that family firms are the most dominant form of enterprise in the world (La Porta, Lopez-de-Silanes, & Shleifer, 1999). However, the picture is not entirely unambiguous. It appears that family ownership rather than other modes of family involvement in governance is most salutary – a result that makes sense given that owners may be influential and motivated monitors but, particularly in later generations and larger firms, may be less than effective managers (Bloom & Van Reenen, 2007; Block, Miller, & Jaskiewicz, 2011; Miller, Minichilli, Le Breton-Miller, Corbetta, & Pittino, 2014). It is also notable that family firms do best when their performance is measured according to ROA, a measure that is not as influenced by financial structure as ROE.[5] Moreover, given the family firm emphasis on sustainable performance rather than quick returns (Miller & Le Breton-Miller, 2005), it is not surprising that family firms did not shine particularly brightly in their growth rates.

The public–private and SME-large firm contrasts are also instructive. Family firms often treasure secrecy as a major asset. Thus, those that are private (and generally smaller) may understate their performance to stay below the radar and avoid attracting new competitors. Public family firms, which are often larger, and which we have shown to outperform more strongly, do not have the luxury of concealing their good performance and, in fact, might be motivated to do the opposite to please non-family shareholders. Another interpretation is that the negative consequences of family governance, such as nepotism, family altruism, shareholder entrenchment, and ineffective management (Bloom & Van Reenen, 2007; Morck, Wolfenzon, & Yeung, 2005; Pérez-González, 2006),

are reduced when the firm is actively monitored by capital markets and other (large) shareholders.

Although there are no statistically significant differences here, the results regarding individualism and power distance are interesting. They suggest that family firms in individualistic settings do better, perhaps because these allow for less entrenchment and nepotism than family firms in collectivistic settings in which family priorities dominate those of the business. That idea is supported by the power distance findings, where high power distance settings are not as conducive to family firm performance as more egalitarian ones, again suggesting that meritocracy rather than paternalistic or authoritarian power will be used to guide the business. We also find that family firms show higher performance in low uncertainty avoidance countries, which are characterised by low degrees of regulation and an entrepreneurship-friendly environment. Family firms, which are owner-managed or owner-governed, benefit from such settings.

Finally, the nature of the publication – published or not, prestigious or not, the year of publication – did not seem to demonstrate many statistically significant differences in the findings. This is an encouraging finding for the relatively young field of family business research because it demonstrates that the results regarding family firm performance are not driven by publication pressures, trends or journal editors' choices. One finding, however, appears a bit odd. The primary studies published after 2012 report a particularly low effect size. We have no explanation for this finding.

Limitations and further research

As with all empirical studies and meta-analyses, this one also suffers from limitations. Most notably, ours is "only" a univariate meta-analysis. Therefore, we recommend future research on the topic by conducting meta-regression, possibly using Bayesian methods (Block, Miller, & Wagner, 2014) or meta-analytic structural equation modelling on a very large sample of primary studies. This would reduce the possibility of omitted variables bias. In doing so, one could, for example, investigate in more detail how country-specific corporate governance systems moderate the relationship between family firms and performance. Other promising conceptual moderators concern industry characteristics or business cycles. It is conceivable that family firms underperform in capital-intensive industries and outperform in times of economic hardship. More primary studies are needed to address these questions.

Appendix A. Primary studies in meta-analysis

Table A1

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[4] The detailed results for the reduced sample are available from the corresponding author.

[5] Note that ROE equals ROA if the firm does not carry any debt.

Table A1

Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published
Abdullah et al.	2012	841	Malaysia	No	Bhaumik et al.	2009	777	India	Yes	Chu	2009	341	Taiwan	Yes
Abor & Biekpe	2007	120	Ghana	Yes	Binacci & Peruffo	2013	92	USA	No	Chu	2011	786	Taiwan	Yes
Achleitner et al.	2014	402	Germany	Yes	Bjuggren & Palmberg	2010	110	Sweden	Yes	Chung	2012	35	Taiwan	Yes
Acquaah & Amoako-Gyampah	2011	122	Ghana	Yes	Black et al.	2012	665	Korea	No	Claessens	2002	908	Several countries	
Adams et al.	2005	336	USA	Yes	Blanco-Mazagatos	2007	654	Spain	Yes	Corstjens & Preyer	2005	1,446	France	No
Ahrens	2013	290	Germany	No	Block	2010	414	USA	Yes	Corstjens et al.	2004	227	France	No
Al-Dubai et al.	2014	75	Saudi Arabia	Yes	Block	2012	154	USA	Yes	Craig	2013	250	USA	Yes
Alestalo	2010	196	Finland	No	Block	2009	243	USA	No	Cruz & Justo	2008	537	Dominican Republic	No
Ali	2007	500	USA	Yes	Block & Wagner	2013	286	USA	Yes	Cruz et al.	2012	392	Dominican Republic	Yes
Amore & Minichilli	2013	923	Italy	No	Block et al.	2013	248	USA	Yes	Cruz et al.	2014	598	Several countries	Yes
Ampenberger et al.	2013	660	Germany	Yes	Block et al.	2011	419	USA	Yes	Cucculelli et al.	2014	204	Italy	No
Amran	2011	888	Malaysia	No	Bocatto & Rialp	2010	29	Spain	Yes	D'Aurizio et al.	2014	1,833	Italy	No
Amran & Ahmad	2009	896	Malaysia	Yes	Boland et al.	2008	40	USA	Yes	Davis & Stout	1992	500	USA	Yes
Amran & Ahmad	2010	975	Malaysia	Yes	Bona Sanchez et al.	2008	90	Spain	Yes	De Massis et al.	2014	787	Italy	Yes
Anderson	2003	403	USA	Yes	Bona Sanchez et al.	2009	102	Spain	Yes	De Massis et al.	2013	199	Switzerland	Yes
Anderson & Duru	2008	2,000	USA	No	Bonilla & Carvajal	2010	260	Chile	Yes	De Massis et al.	2013	494	Italy	Yes
Anderson & Reeb	2010	2,000	USA	No	Bouzgarrou	2013	239	France	Yes	Deephouse & Jaskiewicz	2013	194	Several countries	Yes
Anderson & Reeb	2003	319	USA	Yes	Bozec & Laurin	2008	400	Canada	Yes	Dehlen	2013	884	Germany	No
Anderson & Reeb	2004	403	USA	Yes	Calbrò et al.	2013	342	Norway	Yes	Dekker et al.	2013	523	Belgium	Yes
André et al.	2014	215	Canada	Yes	Campopiano et al.	2014	130	Italy	Yes	Delgado-Garcia et al.	2010	59	Spain	Yes
Andres	2008	275	Germany	Yes	Carrasco-Hernández & Sánchez-Marín	0	400	Spain	No	Din & Javid	2011	29	Pakistan	No
Arosa & Iturralde	2010	369	Spain	Yes	Casillas & Moreno	2010	449	Spain	Yes	Ding & Zhang	2008	1,011	China	Yes
Astrachan & Kolenko	1994	581	USA	Yes	Chaganti & Damanpour	1991	80	USA	Yes	Ducassy & Prevot	2010	207	France	Yes
Attig & El Ghoul	2011	2,723	Several countries	No	Chakraborty & Sheikh	2008	137	USA	No	Eddelston & Kellermans	2007	60	USA	Yes
Audretsch et al.	2013	386	Germany	Yes	Chang et al.	2012	700	Taiwan	Yes	Eddleston et al.	2012	179	Switzerland	Yes
Averstad & Rova	2007	600	Sweden	No	Chang	2003	419	Korea	Yes	Ehrhardt et al.	2006	124	Germany	No
Azoury et al.	2010	27	Lebanon	Yes	Che & Langli	2014	70,000	Norway	No	Eklund et al.	2010	256	Sweden	No
Bagnoli & Liu	2011	500	USA	Yes	Chen & Jaggi	2000	87	Hongkong	Yes	Elderink	2014	80	Netherlands	No
Banalieva & Eddleston	2011	202	Several countries	Yes	Chen & Hsu	2013	77	Taiwan	Yes	Escriba-Esteve et al.	2009	295	Spain	Yes
Banogli & Liu	2008	415	USA	No	Chen & Hsu	2009	369	Taiwan	Yes	Espinoza Aguiló & Espinoza Aguiló	2012	101	Mexico	Yes
Barbera & Moores	2013	3,364	Australia	Yes	Chen et al.	2014	6,950	Several countries	Yes	Fahlenbrach	2009	361	USA	Yes
Barnett et al.	2009	121	USA	Yes	Chen & Chen	2007	1,311	USA	Yes	Favero et al.	2006	128	Italy	No
Barontini	2006	675	Several countries	Yes	Chen	2010	1,003	USA	Yes	Feito-Ruiz & Menéndez-Requejo	2010	124	Several countries	Yes
Barth & Gulbrandsen	2005	438	Norway	Yes	Chen & Chen	2008	1,204	USA	No	Fernando et al.	2013	295	Several countries	Yes
Baschieri et al.	2014	182	Italy	No	Chen et al.	2013	1,204	USA	Yes	Fernando et al.	2012	500	Spain	No
Bassanini et al.	2013	1,870	France	Yes	Chen & Dagupta	2010	1,500	USA	No	Filatotchev & Lien	2005	228	Taiwan	Yes
Basu	2009	103	USA	Yes	Chen et al.	2005	412	Hongkong	Yes	Filatotchev et al.	2011	447	Hongkong	Yes
Bauguess & Stegemoller	2008	498	USA	Yes	Chen et al.	2007	1,145	USA	Yes	Fitó & Moya	2013	52	Spain	Yes
Bauweraerts	2013	219	Belgium	Yes	Cheung et al.	2005	412	Hongkong	Yes	Franks & Mayer	2010	1,911	Several countries	No

Table A1 (*Continued*)

Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published
Belenzon	2011	101,816	Several countries	No	Ching et al.	2002	236	Hongkong	No	Gallo & Vilaseca	1998	104	USA	Yes
Belenzon et al.	2014	225,683	Several countries	No	Chirico & Salvato	2014	199	Switzerland	Yes	Gallucci & D'Amato	2007	114	Italy	Yes
Belenzon & Zarutskie	2011	183,537	Several countries	No	Chirico et al.	2011	199	Switzerland	Yes	Galve Górriz & Fumás	2005	53	Spain	No
Ben Ali & Lesage	2014	1,097	USA	No	Chirico	2014	199	Switzerland	Yes	Galve-Górriz & Salas-Fumas	2010	51	Spain	No
Ben-Amar	2006	232	Canada	Yes	Choi et al.	2007	464	South Korea	Yes	Gama & Rodrigues	2010	208	Italy	Yes
Benavides et al.	2009	59	Peru	No	Choi & Yoo	2005	443	South Korea	No	Garcia-Castro & Aguilera	2014	6,592	Several countries	Yes
Bennedsen & Nielsen	2007	4,692	Denmark	Yes	Chrisman & Patel	2012	964	USA	Yes	Ghorbani & Zavareh	2012	141	Iran	Yes
Berent-Braun & Uhlaner	2012	64	Several countries	Yes	Chrisman & Chua	2004	1,141	USA	Yes	Giovanni	2009	56	Italy	Yes
Berrone & Cruz	2010	194	USA	Yes	Chrisman et al.	2012	1,060	USA	Yes	Goh et al.	2013	141	Malaysia	Yes
Berrone & Gomez-Mejia	2009	469	USA	Yes	Chrisman et al.	2007	208	USA	Yes	Gomez-Mejia & Larrazza-Kintana	2014	219	Spain	No
Bertrand et al.	2008	586	Thailand	Yes	Chrisman et al.	2009	505	USA	Yes	Gomez-Mejia & Campbell	2013	610	USA	Yes
Gomez-Mejia & Makri	2010	360	USA	Yes	Kraiczy et al.	2014	63	Germany	Yes	Michiels et al.	2013	529	USA	Yes
Gomez-Mejia & Makri	2003	253	Several countries	No	Kuan et al.	2011	1,164	Taiwan	Yes	Miller & Lester	2010	898	USA	Yes
Gonzalez et al.	2012	523	Colombia	Yes	Kunze et al.	2014	69	Germany	No	Miller & Lester	2010	898	USA	Yes
Graves & Shan	2013	4,217	Australia	Yes	Kuo & Hung	2012	1,115	Taiwan	Yes	Miller & Le Breton-Miller	2007	863	USA	Yes
Guizani	2010	42	Tunisia	No	La Rocca & Montalto	2011	231	Italy	No	Miller et al.	2009	170	Korea	Yes
Guzman & Gonzales	2010	523	Colombia	No	Lam & Lee	2008	128	Hongkong	Yes	Miller & Le Breton-Miller	2013	898	USA	Yes
Hadani	2007	430	USA	Yes	Lappalainen	2014	621	Finland	No	Miller & Minichilli	2013	911	Italy	Yes
Han An & Naughton	2006	509	Korea	No	Lappalainen & Niskanen	2012	600	Finland	Yes	Miller & Minichilli	2013	893	Italy	Yes
Haniffa & Cooke	2002	167	Malaysia	Yes	Lee	2004	29	Korea	Yes	Miller & Scholnick	2008	464	Canada	Yes
Hashim & Devi	2007	280	Malaysia	No	Lee	2006	403	USA	Yes	Miller et al.	2011	898	USA	Yes
He et al.	2007	100	China	Yes	Leitterstorf & Rau	2014	153	Germany	Yes	Minichilli & Corbetta	2010	92	Italy	Yes
Ho, Simon & Wong	2001	98	Hongkong	Yes	Li	2013	1,585	USA	No	Minichilli et al.	2014	161	Italy	Yes
Huang	2014	673	Taiwan	Yes	Li	2010	264	China	Yes	Miralles-Marcelo et al.	2014	55	Portugal	Yes
Hufft Jr.	1999	735	USA	No	Liang et al.	2013	902	China	Yes	Mishra et al.	2001	120	Norway	Yes
Huse	1994	75	Several countries	No	Lien & Li	2013	205	Taiwan	Yes	Molly et al.	2010	504	Belgium	Yes
Hwang & Kim	2009	93	USA	Yes	Liew et al.	2011	375	Malaysia	No	Mukherjee & Padgett	2005	199	United Kingdom	No
Hybrechts et al.	2013	555	Belgium	Yes	Lin	2010	6,090	Taiwan	Yes	Munari et al.	2010	1,000	Several countries	Yes
Hybrechts	2011	110	Belgium	No	Lin & Hu	2007	50	Taiwan	Yes	Muñoz-Bullón & Sánchez-Bueno	2012	2,596	Several countries	Yes
Ibrahim & Samad	2011	290	Malaysia	Yes	Lin et al.	2014	364	Taiwan	Yes	Muñoz-Bullón & Sánchez-Bueno	2011	736	Canada	Yes
Isakov & Weisskopf	2009	178	Switzerland	No	Ling & Kellermanns	2009	86	USA	Yes	Muttakin & Khan	2012	141	Bangladesh	No
Isakov & Weisskopf	2014	185	Switzerland	Yes	Lins et al.	2012	8,584	Several countries	No	N.N.	2013	160	Malaysia	No
Isakov & Weisskopf	2014	185	Switzerland	Yes	Lotto	2013	455	United Kingdom	Yes	N.N.	2009	535	United Kingdom	No
Jabeen & Kaleem	2012	62	Pakistan	Yes	Luo & Liu	2014	263	China	Yes	N.N.	2014	203	Germany	No

Table A1 (Continued)

Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published
Jacquemin & Ghellinck	1980	103	France	Yes	Luo & Chung	2012	737	Taiwan	Yes	N.N.	2014	3,890	Spain	No
Jaggi et al.	2009	269	Hongkong	Yes	Luo & Chung	2012	573	Taiwan	No	Nagar et al.	2002	2,713	USA	No
Jang et al.	2005	1,538	Korea	No	Luo & Chung	2009	801	Several countries	Yes	Naldi & Cennamo	2013	1,008	Italy	Yes
Jaskiewicz	2006	175	Germany	No	Lv & Lin	2008	202	Taiwan	Yes	Naldi et al.	2008	217	Sweden	No
Jaskiewicz et al.	2005	99	Several countries	Yes	MacKay	2012	194	Canada	No	Niskanen et al.	2010	476	Finland	Yes
Jesus Nieto & Fernandez	2013	1,500	Spain	Yes	Madision et al.	2014	377	USA	Yes	Olejnik	2013	497	Germany	No
Ji et al.	2006	433	Hongkong	Yes	Madison	2014	77	USA	No	Oswald & Muse	2000	2,631	USA	Yes
Jo & Harjoto	2011	2,493	USA	Yes	Mahto & Khanin	2013	1,740	USA	Yes	Pandey et al.	2010	131	India	No
Jones & Makri	2008	203	Several countries	Yes	Majumar &Varadarajan	2013	61	United Arab Emirates	Yes	Patel & Chrisman	2014	847	USA	Yes
Jungwook & Oksmuro	2011	1,202	Japan	Yes	Majumar & Varadarajan	2013	61	United Arab Emirates	Yes	Patel et al.	2010	663	USA	No
Kammerlander	2013	1,354	Switzerland	No	Mannarino	2013	2,795	Italy	No	Pazzaglia & Mengoli	2013	101	Italy	Yes
Kammerlander	2013	155	Switzerland	No	Mansi et al.	2014	277	India	No	Peng & Jiang	2006	151	Hongkong	No
Kellermanns & Eddleston	2007	51	USA	Yes	Markin	2004	251	Canada	No	Peng & Jiang	2010	634	Several countries	Yes
Kellermanns & Eddleston	2006	74	USA	Yes	Martikainen et al.	2009	159	USA	Yes	Perez-Gonzalez	2006	335	USA	Yes
Kellermanns et al.	2012	33	USA	Yes	Martínez & Stöhr	2007	175	Chile	Yes	Perrini & Rossi	2008	297	Italy	Yes
Kersten Leiber	2008	807	Germany	No	Masayuki	2008	5,000	Japan	No	Pindado et al.	2008	262	Several countries	No
Khan	2003	420	USA	No	Master	2012	167	Netherlands	No	Plötzl	2013	303	Germany	No
Khan et al.	2013	100	Pakistan	Yes	Masulis et al.	2011	22,380	Several countries	No	Prencipe et al.	2011	135	Italy	Yes
Kholmurodova & Bartholdy	2009	245	Denmark	No	Matho & Davis	2013	2,168	USA	Yes	Price et al.	2013	293	Several countries	Yes
Kim & Gao	2013	158	China	Yes	Maury	2006	1,672	Several countries	Yes	Pukthuanthong & Walkter	2013	158	Canada	Yes
Kim & Lee	2008	253	South Korea	Yes	Mazzola et al.	2013	294	Italy	Yes	Randoy et al.	2003	141	Several countries	No
King & Santor	2008	613	Canada	Yes	McConaughy & Phillips	1999	147	USA	Yes	Randøy & Goel	2003	72	Norway	Yes
Klein & Shapiro	2005	263	Canada	Yes	McGuire & Dow	2012	473	USA	Yes	Randøy et al.	2009	98	Sweden	Yes
Kortelainen	2007	416	Norway	No	Memili et al.	2013	2,019	USA	Yes	Sacrístán-Navarro et al.	2011	118	Spain	Yes
Kotlar & De Massis	2012	1,540	Spain	Yes	Memili et al.	2010	163	Switzerland	Yes	Sacristán-Navarro & Gómez-Ansón	2011	53	Spain	Yes
Kotlar & Frattini	2013	437	Spain	No	Menéndez-Requejo	2006	6,094	Spain	Yes	Sacristán-Navarro & Gómez-Ansón	2006	86	Spain	Yes
Kowalewski & Talavera	2010	217	Poland	Yes	Menozzi et al.	2014	327	Italy	No	Saito	2007	1,818	Japan	No
Salvatore et al.	2012	1,035	USA	Yes	Strike & van Essen	2013	1,112	Several countries	No	Wilson et al.	2013	711,624	Germany	Yes
Sanches & Rodriguez	2009	2,759	Several countries	Yes	Su & Lee	2012	314	Taiwan	Yes	Wiwattanakantang	2001	270	Thailand	Yes
Sanchez-Bueno & Usero	2013	892	Several countries	Yes	Sundelius & Magnussen	2011	7,073	Norway	No	Wong & Chang	2010	249	Taiwan	Yes
Sanda et al.	2014	89	Nigeria	No	Tang	2008	110	China	No	Wu	2013	503	Taiwan	Yes
Schmid et al.	2013	641	Germany	Yes	Taufil-Mohd & Md-rus	2013	190	Malaysia	Yes	Xve	2012	121	China	No
Schmid	2013	286	USA	Yes	Tinaikar	2009	420	USA	No	Yang	2012	864	China	No
Schmid & Kappes	2013	701	Germany	Yes	Tong	2008	500	USA	Yes	Yasser	2011	132	Pakistan	Yes

Table A1 (*Continued*)

Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published	Author	Publishing Year	N firms in sample	Country	Published
Schulze et al.	2001	1,376	USA	Yes	Tsao & Chen	2009	688	Taiwan	Yes	Yeh	2005	146	Taiwan	Yes
Schulze et al.	2003	883	USA	Yes	Uhlaner	2004	916	Netherlands	No	Yeh et al.	2001	193	Taiwan	Yes
Hollender et al., 2015	2015	256	Germany	Yes	Uhlaner & Floren	2007	233	Netherlands	Yes	Yi & Peng	2011	744	Several countries	Yes
Laufs et al., 2014	2014	148	Germany	Yes	Van den Berg	2014	50	Netherlands	No	Yoo et al.	2014	444	Korea	Yes
Sciascia & Mazzola	2008	620	Italy	Yes	Vandekerkhof et al.	2014	145	Belgium	Yes	Yoshikawa & Rasheed	2010	210	Japan	Yes
Sciascia et al.	2014	233	Italy	Yes	Vandemaele & Vancauteren	2013	501	Belgium	Yes	Young et al.	2008	492	Taiwan	Yes
Sciascia et al.	2012	199	Switzerland	Yes	Veliyath	2000	122	India	Yes	Yu	2008	115	China	Yes
Serrasqueiro et al.	2011	614	Portugal	No	Venanzi & Morresi	2010	119	Italy	No	Zahra	2008	248	USA	Yes
Shen	2008	465	Taiwan	No	Vieira	2014	35	Portugal	Yes	Zahra	2003	409	USA	Yes
Sherif & Iordanis	2009	258	Greece	No	Villalonga	2006	508	USA	Yes	Zahra	2005	209	USA	Yes
Shi	2009	1,210	China	Yes	Volpin	2002	1,989	Italy	Yes	Zahra	2010	741	USA	Yes
Shi	2008	1,233	China	No	Wall	1998	383	USA	Yes	Zahra et al.	2012	1,289	China	Yes
Shivdasani & Yermack	1999	341	USA	Yes	Wallevik	2009	167	Norway	No	Zahra et al.	2007	209	USA	Yes
Silva & Majluf	2008	165	Chile	Yes	Wang	2014	316	Several countries	No	Zattoni & Gnan	2012	488	Norway	Yes
Singal	2014	100	USA	Yes	Wei et al.	2011	1,486	China	Yes	Zellweger	2006	958	Switzerland	No
Sirmon & Hitt	2008	2,531	France	Yes	Weismeier-Sammer	2011	413	Austria	Yes	Zellweger	2007	358	Switzerland	Yes
Srear & Thesmar	2007	595	France	Yes	Welsh et al.	2014	89	Japan	Yes	Zellweger et al.	2010	523	Switzerland	No
Srinivasan	2005	409	USA	Yes	Werner et al.	2013	1,870	Germany	No	Zellweger et al.	2012	82	Switzerland	Yes
Stavrou & Kassinis	2007	204	USA	Yes	Wesley	2010	268	USA	No	Zellweger et al.	2012	179	Switzerland	No
Stockmans & Lybaert	2013	79	Belgium	Yes	Westhead & Howorth	2006	214	United Kingdom	Yes					

Note: The full references are available on the website www.familyfirms.de.

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