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The benefits of doing good: a meta-analysis of corporate philanthropy business outcomes and its implications for management control

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Abstract Numerous studies have investigated the business benefits of corporate philanthropy (CP), which can be considered as part of a company's belief systems. However, it remains unclear under which conditions and to what extent philanthropic activities are associated with corporate financial performance (CFP). This study sets out to shed light on the relationship between CP and CFP by means of a meta-analysis. A total of 183 effect sizes from 45 empirical studies are statistically integrated and analyzed within several subgroups. Particular attention is paid to time-lagged variable measurements that allow interpretation for causality. The general relationship between CP and CFP is found to be significantly positive. Furthermore, results reveal that CP is positively related to subsequent CFP across a wide range of different study designs, including different operationalizations of CFP and CP, different sample criteria, and the control for moderating variables. This paper goes beyond the question of *if* CP affects CFP and provides a status quo for a more detailed discussion on *how* and *when* CP influences CFP. Consequently, integrating research on mediating variables and adding perspectives of management control literature to the CP research field are suggested as promising avenues for future research.

Keywords Corporate philanthropy · Corporate financial performance · Corporate giving · Corporate social responsibility · Corporate social performance · Meta-analysis

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1 Introduction

Against the argument of Friedman (1970) that the only social responsibility of a corporation is to generate profit, the contemporary understanding is that companies are closely intertwined with and dependent on the society around them (Porter and Kramer 2002) and should be controlled accordingly. Consumers, employees, and other stakeholders expect business organizations to meet legal requirements and minimize damage inflicted on society and, moreover, they want them to actively engage in solving societal problems (Carroll 1991) and expect management attention to be directed towards these objectives. The associated general concept of business interacting with society is referred to as corporate social responsibility (CSR; Dahlsrud 2008), whereas the combination of CSR principles, processes, and outcomes is defined as corporate social performance (CSP; Wood 1991). Corporate philanthropy (CP), understood as the voluntary donation of firm resources to society, forms an important part of this concept and is often used as a proxy when financial outcomes of CSR activities are evaluated (Wang et al. 2015). However, CSP is a multidimensional construct, including aspects such as fair employee treatment, legal compliance, environmental performance, or community involvement (Rowley and Berman 2000). Each of these specific dimensions has its own characteristics and their outcomes need to be controlled (Chenhall 2003) and evaluated separately (Wang et al. 2016). Particularly for CP, where doing 'good' for society is not directly associated with the main business purpose of a company (Kourula and Halme 2008), there is an ongoing discussion as to whether corporate donations only inflict costs on a company or if they may also lead to financial benefits (Liket and Simaens 2015; Gautier and Pache 2015).

Much research has focused on the question of whether philanthropic activities, besides being socially desirable, can be associated with economic success of companies and has empirically investigated the relationship between CP and corporate financial performance (CFP). Various studies have used stakeholder theory to argue that CP would indirectly be connected with financial benefits because it can improve the reputation of a company, foster customer relations, and increase employee motivation, thereby enhancing the firm's overall business performance (Seifert et al. 2004; Wang et al. 2008; Lim 2010; Muller and Kräussl 2011a). While some empirical results supported these arguments (Tian 2012; Qiu 2013; Iatridis 2015), others did not (Seifert et al. 2003, 2004). Again others found a negative relationship (Balabanis et al. 1998; Gao et al. 2012), supporting arguments of agency theory that CP is used by managers for their personal benefit and has a negative relationship with a firm's financial performance (Brammer and Millington 2005). Although past meta-analyses have distinguished CP as a specific dimensions of CSP (Orlitzky et al. 2003; Allouche and Laroche 2005; Margolis et al. 2009; Wang et al. 2015), these studies did not pay particular attention to different study designs, which would have allowed for causal interpretation within the CP subsample, and were unable to resolve confusion surrounding contradictory results.

In consequence, recently conducted literature reviews (Liket and Simaens 2015; Gautier and Pache 2015) came to the conclusion that the question of whether CP leads to higher CFP has not yet been answered. Gautier and Pache (2015) found that "many variations appear across firms, industries, and periods, as robust and widespread conclusions remain to be drawn" (Gautier and Pache 2015). At the same time, Liket and Simaens (2015) stated that "when studying the relationship between CP and CFP in a direct way, the evidence seems to paint a mixed picture." In this context, our study intends to advance the discussion on business benefits of CP by providing a comprehensive empirical and theoretical analysis of subgroups of studies investigating this phenomenon.

Using a meta-analysis approach (Hedges and Olkin 1985; Hunter and Schmidt 2004), we integrated the results of 45 empirical studies, including 183 effect sizes, on the relationship between CP and CFP. Based on a contingency perspective, we explore how different study design factors, such as variable measurement, sample characteristics, as well as controlled moderating variables, influence the results. Particularly, we focus on the implementation of temporal sequences in study designs, i.e. time-lagged measurement of variables, as only these results are valid for the interpretation of causal relationships (Mitchell and James 2001). As a consequence, our study helps to establish a status quo of a positive relationship between CP and subsequently measured CFP across a range of different study designs. More importantly, it moves the discussion away from the question *if* a relationship between CP and CFP exists towards the question *how* and *when* CP positively affects CFP by identifying aspects that beg closer examination. Furthermore, we highlight how the levers of control framework of Simons (1994) might help to explain the causal link between CP and CFP and adds another intersection to be explored by scholars of both CP and management control research fields.

After the introduction, the paper is set up as follows. The "theoretical background" section provides definitions of the analyzed variables, outlines the fundamental inter-relations between them, and formulates research questions to investigate the influence of time-lagged variable measurement, study design factors, and methodological moderators on the CP–CFP relationship. The third section briefly explains the employed method with respect to the data sample, coding, and meta-analytical integration of study results. In the "results", meta-analysis outcomes are presented for the general relationship between CP and CFP, and for the particular relationship of CP and subsequent CFP with respect to study design factors and moderating variables. The "discussion" section sums up findings regarding the posed research questions. Furthermore, limitations of this study and recommendations for further research are presented.

2 Theoretical background

2.1 The relationship between CP and CFP: Doing well by doing good?

Before discussing the relationship between CP and CFP, it is important to clarify what these terms represent in this study. Very few scholars which have addressed the topic of CP have offered clear definitions about their understanding of what CP exactly

is (Gautier and Pache 2015). This might cause confusion about which activities are considered as part of CP. Madden et al. (2006) define CP as "the voluntary business giving of money, time or in-kind goods, without any *direct* commercial benefit, to one or more organizations whose core purpose is to benefit the community's welfare". This definition is consistent with definitions used by several other authors (Schwartz 1968; Godfrey 2005) and is taken as the basis of the research conducted within this study.

In the context of the CP literature, the question has been raised by many if 'doing good' in a societal sense is related to 'doing well' in financial terms (Griffin and Mahon 1997; Margolis et al. 2009). Doing well financially is commonly expressed by the term CFP (Hamann et al. 2013). CFP captures the "social and economic outcomes resulting from the interplay among an organization's attributes, actions, and environment" (Combs et al. 2005) and is represented by indicators such as profit, sales growth, or market returns (Hamann et al. 2013).

There are many reasons that suggest a positive relationship between CP and CFP. On the one hand, with a healthy enterprise that generates considerable profits each year, decision makers can afford to give money to charity. If most capital is earmarked for retaining the enterprise's profitable status and avoiding bankruptcy, there might be few resources, in the form of time or money, left to engage in philanthropic activities. For this reason, slack resource theory proposes that strong CFP represents an essential prerequisite of CP, suggesting a causal effect of CFP on CP (Adams and Hardwick 1998; Buchholtz et al. 1999; Seifert et al. 2003). On the other hand, several theoretical arguments which are mainly derived from stakeholder theory (Freeman 1984), and can also be based on ideas of Simons' levers of controls framework (Simons 1994), propose that companies can benefit from engaging in CP, indicating a positive causal effect of CP on CFP.

Engaging with society by donating cash, in-kind goods, or employee worktime can improve an organization's performance on several internal and external levels. Externally, philanthropic giving can enhance reputation. This might help to establish a more loyal customer base (Luo 2005), ensure the license to operate within communities (Lim 2010), and serve as a reputational insurance in case of negative events (Godfrey 2005). Furthermore, governmental and financial institutions might be more willing to support companies which are associated with strong community support (Ye and Zhang 2011).

Organizations also benefit from CP on the internal level. As Porter and Kramer (2002) describe, a business is unable to thrive without the right environment. This includes not only a community's good will and infrastructure, but also its attractiveness for possible employees of the company. Companies need to attract a highly qualified and motivated workforce. Organizational values and belief systems (Simons 1994), which can be shaped and reinforced by mission statements, company CSR reports, as well as by corporate donations, can enhance employee identification and provide an enterprise with a competitive advantage to secure their access to these high-quality workers (Turban and Greening 1997; Balakrishnan et al. 2011; Arjaliès and Mundy 2013). Moreover, employees within the company show higher job commitment and job performance when they feel that they are part of a company that believes in giving back to society (Ke et al. 2015). Finally, value systems supported by CSR and philanthropic

activities can provide opportunities for growth and innovation as, "in the absence of problems, belief systems motivate individuals to search for new ways of creating value" (Simons 1994).

Despite the aforementioned rationales for a positive relationship between CP and CFP, there are also some arguments that propose a negative association of CP and CFP. When comparing different CSR activities for their strategic motivation and the associated business success, Schaltegger and Burritt (2015) argue that CP is a reactionary form of CSR. As such, CP is "neither expected nor implemented to generate profits but to keep critics at bay" (p. 10) and will mainly cause costs instead of leading to economic benefits (Schaltegger and Burritt 2015). Furthermore, even when assuming that well-intended and strategically directed donations might have positive effects on a firm's financial performance, agency theory suggest that managers (i.e. agents) may show opportunistic behavior when deciding over CP activities (Iatridis 2015). When not properly controlled by the shareholders (i.e. principals), managers may use firm resources to donate to causes which enhance their personal image instead of the company's reputational capital (Navarro 1988; Amran et al. 2007; Cowan et al. 2013). These agency costs may outbalance potential benefits of CP and may lead to an overall negative association between CP and CFP.

However, the existence of a positive or a negative relationship between CP and CFP does not have to be exclusive. Wang et al. (2008) as well as Chen and Lin (2015) proposed and empirically verified an inverted u-shaped relationship. They suggest that negative effects of CP, as implied by agency theory, from a certain point on are greater than the benefits generated by gratifying the stakeholders. As a consequence, the financial net effect of charitable donations for companies is first positive, than levels out, and eventually turns negative (Wang et al. 2008).

While various studies have found empirical support for a positive relationship between CP and CFP (Hall and Rieck 1998; Su and He 2010; Tian 2012; Qiu 2013; Iatridis 2015), others have not (Seifert et al. 2003, 2004), and again others have even found negative relationships (Balabanis et al. 1998; Gao et al. 2012). Although the main purpose of this study is not to reaffirm the general link between CP and CFP but to take a closer look at different circumstances and study designs which affect this relationship, it is necessary to establish a starting point of our inquiry. This is why our research question 1 (RQ1) examines the existence of a generally positive relationship between CP and CFP across all study designs integrated within our meta-analysis.

RQ1: Is there a positive relationship between CP and CFP?

2.2 Investigating causality with time-lagged measurements

When investigating the relationship between CP and CFP, it is important to keep in mind that a mere statistical association of two variables does not allow for any conclusion about causality (Mitchell and James 2001; Van der Stede 2014). The relationship between CP and CFP could be a result of a causal effect of CFP on CP, i.e. companies with stronger financial performance give more because they can, or of a causal effect of CP on CFP, i.e. positive effects of CP on reputation and employee motivation lead to higher CFP, or both. To find evidence that allows for an inference of causation,

researchers can measure variables in a temporal sequence by introducing a time lag. If, for example, CFP is measured 1 year after the corporate donation amount was measured (subsequent measurement), a statistical correlation between the two measures can plausibly be interpreted to imply that CP has an effect on CFP. If both indicators are assessed at the same time (concurrent measurement), on the other hand, no causal relationship can be inferred from the results (Bausch and Pils 2009).

To take implemented time lags into consideration, CFP indicators are assessed as to whether they are measured prior, concurrently, or subsequently to the CP indicator. The consideration of these time lagged measurements within all study designs and across all subgroups of effect sizes is a key aspect within this study. The relationship we want to focus on is between CP and subsequently measured CFP to assess the causal effect of CP on the latter. The existence of this effect would also suggest that CP activities need to be integrated into management control systems to exploit positive outcomes of CP, such as stakeholder reputation and employee motivation, and limit negative consequences in the form of managerial opportunism.

Besides the temporal sequence of measured events, another important aspect that needs to be considered is the temporal distance of indicator measurement (Mitchell and James 2001). As positive reputation and employee motivation, representing the main mediators for the effect of CP on CFP, can be considered as inducing mid- or long-term effects, a time frame of at least 1 year seems adequate. Conveniently, when studies investigate this relationship and consider the temporal sequence for these two variables, they usually depend on archival data provided on a yearly basis and, thus, implement a sufficient time lag of at least 1 year.

If we want to lead a more specific discussion on two variables' relationship including causality effects, we need to differentiate empirical studies that considered the temporal sequence of variable measurement. Therefore, based on RQ1, our research question 2 (RQ2) focuses on differences in findings for prior, concurrent, and subsequent measurement of CFP in relation to CP.

RQ2: Does the relationship hold for subgroups of studies that used different temporal sequences of variable measurement?

2.3 Study design factors

Even if a relationship between CP and subsequent CFP can be empirically shown to allow for the inference of causality, the important question of the conditions under which this relationship holds remains. After all, the existence of a positive or negative relationship might depend on differences concerning the study design and the context of respective CP activities. To account for these differences within a meta-analysis, empirical results can be sorted into subgroups according to their study design attributes and contextual factors. This kind of subgroup analysis might shed some light on questions about the conditions under which CP can have a significant influence on CFP. As a consequence, it needs to be investigated how the relationship is influenced by different study designs. While RQ3 postulates the general question on this issue, the following subquestions demand more specific answers for different subgroups of studies.

RQ3: Does the relationship hold for subgroups of studies that differed with regard to study design?

Operationalization of CFP An important and usual attribute to start with is the measurement of CFP (Combs et al. 2005; Hamann et al. 2013). Other studies investigating the relationship between CFP and CSP or corporate environmental performance (CEP) have mainly focused on the differentiation of accounting-based indicators, e.g., return on assets (ROA) or return on equity (ROE), and market-based measures, e.g., stock market returns or market risk values (Orlitzky et al. 2003; Allouche and Laroche 2005; Margolis et al. 2009; Endrikat et al. 2014). Following these approaches, the same classification is introduced for CFP measures in this study. Earlier meta-analyses have found that the correlations between CSP and CFP are stronger when using accounting-based rather than market-based measures of CFP (Orlitzky et al. 2003; Margolis et al. 2009). The argument which was used to explain these findings is presented by Wood and Jones (1995), who argue that "there is no theory to explain why stockholders would or would not prefer a company that gives one percent of pre-tax earnings to charity […]". Building on these findings, research question 3a asks:

RQ3a: Does the relationship hold for subgroups of studies that differed with regard to the employed CFP indicator?

Operationalization of CP Just as there exist different possibilities to measure CFP, several distinct indicators have been used to represent the philanthropic activities of firms. While some have measured CP by a dummy variable, evaluating the overall existence of charitable donations (Hall and Rieck 1998; Qiu 2013), others have assessed the total amount of donations made (Patten 2008; Wang and Qian 2011), and again others computed the percentage of donated amounts relative to total assets, pre-tax income, or sales (Jia and Zhang 2014; Chen et al. 2015; Iatridis 2015). Generosity in the form of relative donations could be more important to customers and other stakeholders than the absolute amount of donations (Patten 2008) or the mere existence of donations. Furthermore, according to the theory of an inverted u-shaped relationship between CP and CFP (Wang et al. 2008; Chen et al. 2015), one could expect that the initial participation in donation programs yields higher CFP benefits than ever-increasing sums of charitable donations. This is why we ask whether a positive relationship persists for these different types of CP indicators.

RQ3b: Does the relationship hold for subgroups of studies that differed with regard to the employed CP indicator?

Besides the general indicator measuring CP, there are more aspects to be considered about the charitable donation indicators that have been assessed for empirical analyses. The first aspect concerns the donation medium that was captured. According to the definition of CP, charitable donations can be made in the form of cash, in-kind goods, or volunteered time (Madden et al. 2006). These different forms of resources donated to society might be perceived differently by stakeholders. Company volunteering programs, which temporarily release company paid workers from their business duties in order to work for social causes, can increase motivation of employees and foster brand identification of customers (Jones 2010; Veleva et al. 2012; Mattila and Hanks

2013). In-kind donations, which include the donation of company products, generate a marketing effect and simultaneously make it possible to write off excess inventory (Gao et al. 2012). As a result of these additional benefits of specific kinds of donations, it is expected that these might influence the found relationship but that the positive relationship holds for all subgroups.

RQ3c: Does the relationship hold for subgroups of studies that differed with regard to the donation medium included in the CP measure?

The second aspect that is notably different about the type of CP evaluated within empirical analyses concerns the time horizon of the donation. Whereas many studies examined continuous donation efforts over periods of 1 year or longer (Diltz 1995; Balabanis et al. 1998; Chen et al. 2015; Iatridis 2015), others focused on donations made directly at or after a specific event, mostly natural disasters (Muller and Kräussl 2011b; Gao et al. 2012; Qiu 2013). The special context and increased media attention of disaster relief donations might influence the impact on CFP, which is why we intend to investigate RQ3d.

RQ3d: Does the relationship hold for subgroups of studies that differed with regard to the time horizon of donations included in the CP measure?

Sample data Other contextual factors that could influence the study outcomes are the country and the year in which the data was gathered. Because of important cultural, economic, institutional, and legal differences between developed and developing countries, it is argued that the relationship between CP and CFP might differ within these two contexts (Su and He 2010; Ye and Zhang 2011). Arguments and respective findings have gone in both directions. On the one hand, in developing countries with greater market inefficiencies, CP can help to improve political connections and protect property rights (Su and He 2010). On the other hand, markets are more transparent and CSR awareness is said to be higher in developed countries. This leads to higher visibility of companies among more demanding stakeholders and could increase the influence of CP efforts on CFP (Ye and Zhang 2011; Wang and Qian 2011). Furthermore, especially in China where political affiliation is a more salient issue than in other countries, managers might use donations to enhance their political connections on a personal level instead of benefiting the company. Due to these higher agency costs assumed in countries like China, we need to ask the question:

RQ3e: Does the relationship hold for subgroups of studies that differed with regard to sample country?

Regarding the year of the investigation, it can be expected that found relationships have become stronger over time for several reasons. First, study designs are generally assumed to improve over time to yield stronger relationships (Combs et al. 2011). Furthermore, for this particular meta-analysis, as the differentiated analysis of specific CSR dimensions has become more important over recent years (Wang et al. 2016), more studies are expected to exist for recent decades, implying more robust meta-analysis results with growing sample sizes. Finally, due to digital technology and extended non-financial reporting, growing transparency between stakeholders and companies might have increased the impact of strategic philanthropy for business and

society (Porter and Kramer 2002; Saiia et al. 2003; Gao et al. 2012; Rangan et al. 2015)

RQ3f: Does the relationship hold for subgroups of studies that differed with regard to the year of sample collection?

2.4 Methodological moderators

When investigating the relationship between CP and CFP, it is important to consider that there are also other variables, such as firm size, advertising intensity, or ownership structures, which might have an impact on the measured relationship. These moderating variables should be held constant or controlled for when measuring a relationship and are referred to as control variables. To account for control variables, their effect can be eliminated by using partial correlations, which hold the moderating variables constant and measure the 'true' relationship between CP and CFP. A number of moderators have been considered by existing studies, including firm size, industry effects, advertising intensity, R&D spending, past financial performance, or public ownership (Balabanis et al. 1998; Lev et al. 2010; Chen et al. 2015). Before taking a closer look at the mentioned control variables individually, it is an interesting question as to whether the overall relationship between CP and subsequent CFP changes if only partial correlations are considered. A number of studies have already included control variables into their measurements, but their results can not readily be mixed with bivariate effect sizes, so these are investigated as a separate sample within our study. Based on the arguments made above, a significant correlation is still expected when the effects of other variables are partialed out and the 'true' relationship is measured.

RQ4a: Does the relationship hold for studies that calculated partial correlations in general?

Besides the integration of all partial correlation coefficients controlling for different sets of control variables, these can also be analyzed separately. For example, numerous studies controlled for firm size, which has an effect on public visibility and is, thus, suggested to influence the CP–CFP relationship (Balabanis et al. 1998; Chen et al. 2015; Iatridis 2015). Furthermore, within distinct industries, different levels of CP or profitability are common and shareholder returns vary, which is why industry effects should be controlled for (Seifert et al. 2004). Advertising is an important way to create intangible assets, such as firm reputation or brand identification. As these can have a considerable impact on future firm performance and at the same time are associated with CP, advertising intensity is an important variable to be taken into consideration when evaluating CP business impacts (Wang et al. 2008). Furthermore, Wang and Qian (2011) argue that stakeholders are unlikely to respond positively to the CP activities of companies if these failed to fulfil their basic financial needs in the past. The past financial performance, hence, influences the impact of CP on future CFP and should be considered as a control variable. Another important moderating variable is public ownership. Especially in China, where many firms are partly owned by the state, it is argued that private firms need to be more strategic in directing their donations to generate public goodwill (Zhang et al. 2010; Qiu 2013). Based on the made

arguments, all of the mentioned variables are expected to have a significant impact on the relationship. Consequently, it should be examined whether the relationship holds for subgroups of studies that controlled for the respective moderators.

RQ4b: Does the relationship hold for studies that calculated partial correlations controlling for firm size?

RQ4c: Does the relationship hold for studies that calculated partial correlations controlling for industry?

RQ4d: Does the relationship hold for studies that calculated partial correlations controlling for advertising intensity?

RQ4e: Does the relationship hold for studies that calculated partial correlations controlling for past CFP?

RQ4f: Does the relationship hold for studies that calculated partial correlations controlling for public ownership?

3 Method

3.1 Sample

To find studies on the topic of CP, we used the search words (corpor* OR company* OR business OR enterprise* OR firm*) AND (donat* OR philanthrop* OR "charitable giving" OR volunteer*). Additionally, wherever possible, we employed the complementary search terms (data OR empirical OR test OR statistical OR finding* OR result* OR evidence) to narrow down the search results to quantitative studies (David and Han 2004). This search equation was applied to scan the databases Emerald Insight and ScienceDirect as well as a number of other databases, namely Academic Source Complete, Business Source Complete, EconLit with Full Text, E-Journals, and GreenFILE, which were accessed through the host platform EBSCOhost®. From the database result lists, only the articles or books which had conducted quantitative empirical analyses about the relationship between CP and CFP were included in the sample. The database research for literature was completed by the end of May 2015. Furthermore, the authors of recently conducted literature reviews (Liket and Simaens 2015; Gautier and Pache 2015) were contacted and kindly provided support in contributing additional articles to the final sample. Including cross references identified within the found literature, an initial dataset of 69 publications was selected for further analysis.

To be included in the final sample of studies used for the meta-analysis, the studies had to report empirical results that were convertible into r correlation coefficients with the help of respective transformation formulas (Greene 2000; Lipsey and Wilson 2001; Rosenthal and DiMatteo 2001). Furthermore, as recommended by Dalton and Dalton (2005), correlations had to rely on a sample size of at least 30 to be included into the meta-analysis. In case of incomplete data (e.g. no sample size reported), studies were removed from the sample. After applying these selection criteria, a final sample of 45 publications provided the database for this study. Observations and reported results of the relevant empirical analyses were distinguished according to the employed sample, statistical relationship (i.e. bivariate or partial), applied time lag, and operationalization

of the CP and CFP variable. Finally, a total of 183 captured effect sizes were used for the conducted meta-analysis. These effect sizes split into 100 bivariate and 83 partial correlation coefficients.

3.2 Coding and integration of effect sizes

Besides the captured information regarding effect size statistic and sample size, each effect size result was coded for the study design factors outlined in the "Theoretical background" section. The first, and for this study most important, distinction of the study results was made regarding the time lag that was used for the measurement of CP and CFP variables. Time lags can be used to imply causal relationships between two variables. To take implemented time lags into consideration, CFP indicators are categorized as being measured prior, concurrently, or subsequently to the CP indicator (Bausch and Pils 2009). Furthermore, according to the employed statistical method, an effect size was captured as describing either a bivariate or a partial relationship.

The CFP indicator was represented by accounting (e.g. ROA) or market-based measures (e.g. stock return). Hybrid measures such as Tobin's Q or earnings per share (EPS) were assigned to both groups for the subgroup analysis of the CFP indicator. In all other cases, they entered the analysis only as one effect size. The CP indicator was assessed by a donation dummy, the total amount of donation, or relative donations (e.g. percentage of pre-tax earnings). Furthermore, the inclusion of only cash, in-kind, or volunteered time donations into the CP measure, as well as the time horizon of the donation (i.e., continuous or disaster relief donations), were coded. The country of origin and observation year of the sample data was also captured. Additionally, the partial relationship effect sizes were coded for the moderating control variables they had included in the analysis. For a more detailed overview of coding categories and codes, supplementary material from the authors is available upon request.

To integrate the empirical results of the relevant studies, all reported effect sizes were transformed to r product momentum correlation coefficients using the respective transformation formulas (Greene 2000; Lipsey and Wilson 2001; Rosenthal and DiMatteo 2001). Whenever several observations were made within one study, we had to decide whether the measured effect sizes could be treated as independent from each other. While treated as independent, each effect size could enter the meta-analysis individually without introducing a significant bias to the results (Hunter and Schmidt 2004). In case effect sizes from one study could not be considered as independent, e.g. when observing the same sample and variables with different regression models, they had to be integrated into a single value or only one of the dependent effect sizes had to be chosen to be entered into the meta-analysis (Geyskens et al. 2009). Following the recommendations and examples of other meta-analyses in the field of management, effect sizes from one study were treated as independent as long as they clearly used different samples, different time lags, or different operationalization for the CP or CFP variable (Bijmolt and Pieters 2001; Orlitzky et al. 2003; Dalton and Dalton 2005; Carney et al. 2011).

However, when a study reported the results of several regression models with changing moderating variables but identical samples, only the effect size from the model

with the highest R^2 was used. When a study used summarizing variables, for example, by computing the factor of other variables (Balabanis et al. 1998), these values were not considered in this meta-analysis, but only the individual variables they were derived from. When a cumulated abnormal stock market return was measured over several days separately for the same sample, only the cumulated value of the last day was included into the analysis as it is suggested that the positive effect is stronger over longer terms (Diltz 1995; Gao et al. 2012).

To consider measurement error, the reliability of the dependent and independent variable was defined to be 0.8, as recommended by Dalton and Dalton (2005), and the correlations were adjusted accordingly (Hunter and Schmidt 2004). The corrected correlations r were integrated using Hedges and Olkin's (1985) approach of converting correlations to Fisher's z and weighting them by their inversed variance. Confidence intervals were constructed at the 90% level and significance p was reported at the 0.10, 0.05, and 0.01 levels. Homogeneity was tested by calculating Q-statistics, and Q-between (Q_B) was used to assess if the heterogeneity between subgroups is explained by the regarding study design factor, in which case a significant p-value is reported for Q_B (Hedges and Olkin 1985). Calculated mean effect sizes r_m are all based on the random effects model (Lipsey and Wilson 2001). Following the recommendation of Dalton and Dalton (2005), subgroup analysis was only performed with a minimum of three effect sizes.

When conducting meta-analyses, publication bias, also referred to as the file drawer problem, is a severe issue which should not be neglected (Geyskens et al. 2009). While journals tend to focus on articles with significant research results to support or reject certain hypotheses, file drawers might be full with null results which never get published (Rosenthal 1979).

To account for possibly unpublished studies which might have altered the results, the fail-safe k was calculated based on Rosenthal's (1979) file drawer method. The fail-safe k indicates the number of studies with a mean effect size of zero that would have been necessary to yield an insignificant ($p = 0.05$) summary effect. All the computations for integrating effect sizes, identifying confidence intervals, and calculating heterogeneity indicators were performed with the help of the software program Comprehensive Meta-Analysis.

4 Results

4.1 The causal relationship between CP and CFP

The analysis of the overall relationship between CP and CFP was based on all the bivariate effect sizes assessing CP–CFP correlations and yielded a significantly positive summary effect of 0.094 ($k = 100$, $n = 132, 319$, $p < 0.001$). When taking into account the file drawer problem by calculating the fail-safe k, these results seemed robust. An additional number of 59,027 null-effect observations would have been needed to make the result insignificant ($p = 0.05$). This result enables us to answer RQ1 with a clear yes and establish the positive relationship between CP and CFP as the starting point for further elaborations of this study (Table 1).

Table 1 Results of the bivariate relationship between CP and CFP

Bivariate relationship	k	n	r_m	90% CI		Q_B	p
CP–CFP (total)	100	132,319	0.094***	0.067	0.120		0.000
CFP time lag						7.93**	0.019
Prior	19	45,470	0.007	−0.067	0.080		0.882
Concurrent	47	53,549	0.136***	0.102	0.170		0.000
Subsequent	34	33,300	0.082***	0.040	0.124		0.002

k number of effect sizes, n total sample size, r_m mean product-moment correlation, CI confidence intervals, Q_B between-group Q statistic, p significance level of r_m/Q_B

*, **, and *** indicate significance of $p < 0.1, 0.05$, and 0.01, respectively

To take a closer look at this relationship and answer RQ2, the sample of effect sizes was split up into subgroups according to the temporal sequence of time measurement. First, it is important to acknowledge that the introduced time lag has a significant impact on the yielded results ($Q_B = 7.93, p = 0.019$). The integrated effect size based on concurrent measurements of CP and CFP shows the strongest relationship between the two variables ($r_m = 0.136, k = 47, n = 53,549, p < 0.001$). However, no conclusions on a causal relationship can be drawn from this result. When looking at subsequent measurement of CFP, we find a significantly positive correlation coefficient ($r_m = 0.082, k = 34, n = 33,300, p = 0.002$), implying that CP indeed has a positive impact on subsequent CFP, which would suggest the implementation of CP into management control systems. When examining the relationship of prior CFP to CP, on the other hand, no significant relationship can be found ($r_m = 0.007, k = 19, n = 45,470, p = 0.882$).

Before analyzing further results, it is important to note that correlations based on concurrent CP and CFP measurements do not imply any causal relationship between these two variables. For these relationships, it is unclear which indicator influences the other. Bearing this in mind, research questions are answered based only on relationships which included a time lag in the measurement. Accordingly, the results presented in Tables 2 and 3 are exclusively derived from subsequent measurements of CFP variables. However, for the sake of completeness and to set further ground for theoretical discussions, results including concurrent measurements are reported within the text.

4.2 Study design factors

Operationalization of CFP Results of the performed subgroup analysis according to different study design factors are presented in Table 2. The first study design factor which was assumed to influence the relationship between CP and subsequent CFP was the CFP indicator, represented either by accounting or by market-based measures (RQ3a). Our meta-analysis results indicate that there is no significant difference between subgroups which employed either one or the other operationalization of CFP ($Q_B = 0.305, p = 0.581$). The positive relationship holds for both accounting ($r_m = 0.061, k = 14, n = 21,752, p = 0.028$) and market-based measures ($r_m = 0.085, k = 24, n = 22,102, p = 0.016$). When concurrent measurements were

Table 2 Results for the subgroup analysis of the bivariate CP–CFP relationship according to study design factors

Bivariate relationship	k	n	r_m	90% CI		Q_B	p
CP–CFP subsequent	34	33,300	0.082***	0.040	0.124	–	0.002
CFP indicator	–	–	–	–	–	0.31	0.581
Accounting	14	21,752	0.061**	0.016	0.106	–	0.028
Market	24	22,102	0.085**	0.028	0.143	–	0.016
CP indicator	–	–	–	–	–	1.46	0.483
Donation dummy	3	373	0.234*	0.040	0.428	–	0.078
Donation amount	17	10,570	0.073**	0.015	0.132	–	0.040
Relative donations	14	22,357	0.070*	0.004	0.136	–	0.085
CP donation medium	–	–	–	–	–	6.94**	0.031
Cash only	7	492	0.152***	0.079	0.225	–	0.001
Cash and in-kind	11	9032	0.027	−0.006	0.059	–	0.176
(Incl. volunteering)[i]	(1)	–	–	–	–	–	–
CP time horizon	–	–	–	–	–	0.00	0.986
Continuous	26	32,202	0.082***	0.034	0.130	-	0.005
Disaster relief	8	1098	0.083	−0.010	0.176	-	0.148
Sample country	–	–	–	–	–	0.23	0.632
China	13	23,901	0.055	−0.014	0.124	–	0.193
USA	21	9399	0.077***	0.043	0.112	-	0.000
Sample year	–	–	–	–	–	5.31	0.151
1980–1990	5	315	0.155	−0.008	0.318	-	0.141
(1990–2000)[i]	(2)	–	–	–	–	–	–
2000–2010	17	24,309	0.070*	0.008	0.131	–	0.064

k number of effect sizes, n total sample size, r_m mean product-moment correlation, CI confidence intervals, Q_B between-group Q statistic, p significance level of r_m/Q_B

*, **, and *** indicate significance of $p < 0.1, 0.05$, and 0.01, respectively; [i] for subgroups with $k < 3$, no mean effect size was calculated (in parentheses)

included into the analysis, the relationship for accounting measures ($r_m = 0.129, k = 48, n = 65, 272, p < 0.001$), just as for market measures ($r_m = 0.074, k = 47, n = 50, 136, p < 0.001$), remain significantly positive. In this case, however, there is a significant difference between the two subgroups, with accounting measures showing a stronger relationship ($Q_B = 3.869, p = 0.049$). This result supposes a stronger bidirectional relationship for accounting measures and might explain the findings of earlier meta-analyses, which suggested that the relationship is stronger when accounting measures are used (Orlitzky et al. 2003; Margolis et al. 2009). Nevertheless, the latter results are not to be used to draw a conclusion on the causal relationship between CP and CFP.

Operationalization of CP Just as with the measure of the CFP variable, the indicator representing CP was expected to have an impact on the CP–CFP relationship. It was questioned whether the positive relationship would hold for the use of a donation dummy, the absolute donation amount, or the relative donation amount as a CP measure (RQ3b). Again, our meta-analysis showed that there is no significant dif-

Table 3 Results for the subgroup analysis of the partial CP–CFP relationship, including different control variables

Partial relationship	k	n	r_m	90% CI		Q_B	p
CP–CFP subsequent	30	58,023	0.171**	0.049	0.293	–	0.029
Firm size	–	–	–	–	–	0.65	0.420
Controlled	24	41,047	0.139	−0.004	0.282	–	0.128
Not controlled	6	16,976	0.289*	0.060	0.518	–	0.085
Industry effects	–	–	–	–	–	0.65	0.420
Controlled	24	41,047	0.139	−0.004	0.282	–	0.128
Not controlled	6	16,976	0.289*	0.060	0.518	–	0.085
Advertising intensity	–	–	–	–	–	0.65	0.422
Controlled	4	13,568	0.098***	0.027	0.169	–	0.025
Not controlled	26	44,455	0.181*	0.036	0.326	–	0.055
Past CFP	–	–	–	–	–	0.37	0.541
Controlled	5	8243	0.101	−0.003	0.205	–	0.120
Not controlled	25	49,780	0.176**	0.028	0.325	–	0.045
Public ownership	–	–	–	–	–	0.25	0.618
Controlled	6	10,834	0.129***	0.071	0.188	–	0.000
Not controlled	24	50,425	0.180*	0.031	0.329	–	0.062

k number of effect sizes, n total sample size, r_m mean product-moment correlation, CI confidence intervals, Q_B between-group Q-statistic, p significance level of r_m/Q_B
*, **, and *** indicate significance of $p < 0.1, 0.05$, and 0.01, respectively

ference between the three assessed measurements of CP ($Q_B = 1.46$, $p = 0.483$). Regardless of the applied indicator, significantly positive relationships were found for donation dummy ($r_m = 0.234, k = 3, n = 373, p = 0.078$), donation amount ($r_m = 0.073, k = 17, n = 10,570, p = 0.040$), and relative donations ($r_m = 0.070, k = 14, n = 22,357, p = 0.085$). When concurrent relationships are included, the result remains the same. There is no significant difference ($Q_B = 2.93, p = 0.233$) and all indicators show significantly positive relationships between CP and CFP ($r_m = 0.095, k = 8, n = 5,095, p = 0.001$; $r_m = 0.152, k = 37, n = 18,537, p < 0.001$; and $r_m = 0.090, k = 36, n = 63,217, p < 0.001$, respectively).

Regarding the donation medium included in the donation measure, there was a limitation of the conducted analysis regarding the assessment of corporate volunteering. Unfortunately, there were not enough effect sizes which included volunteering time into their CP measure to calculate a separate effect, maybe because organized volunteering is a rather new trend. Nevertheless, the relationship was found to be significantly influenced by the inclusion of in-kind donations in the measurement ($Q_B = 6.94, p = 0.031$). The effect on the relationship, however, was the reverse of our expectations. Donating only cash led to a significantly positive relationship ($r_m = 0.152, k = 7, n = 492, p = 0.001$), while including in-kind donations did not yield a positive effect ($r_m = 0.027, k = 11, n = 9,032, p = 0.176$). Adding concurrent relationships to the results supports these findings in showing a significant difference ($Q_B = 7.84., p = 0.02$) and a stronger relationship for only cash

($r_m = 0.196, k = 23, n = 5,365, p < 0.001$) than for cash and in-kind donations ($r_m = 0.060, k = 23, n = 19,054, p = 0.001$).

Similarly, while the subgroup of studies measuring continuous donations shows a significant positive correlation ($r_m = 0.082, k = 26, n = 32,202, p = 0.005$), the assessment of disaster relief donations does not ($r_m = 0.083, k = 8, n = 1,098, p = 0.148$). When concurrent observations are considered additionally, the picture changes. There is a significant difference ($Q_B = 2.98, p = 0.084$) and continuous donations result in a higher correlation ($r_m = 0.122, k = 68, n = 82,401, p < 0.001$) than disaster relief donations. Nonetheless, the latter relationship is still significantly positive ($r_m = 0.066, k = 13, n = 4,448, p = 0.006$). The latter findings can be explained by another reversed causality reasoning. For example, firms might make continuous donations depending on their financial situation but will donate in cases of disasters even if or exactly because they and their environment are in a precarious situation.

Sample data Despite having asked for whether the relationship between CP and CFP holds for different countries, the only countries with a sufficient sample size to be compared in our meta-analysis were China and the USA. While data gathered from the USA shows a significantly positive relationship ($r_m = 0.077, k = 21, n = 9,399, p < 0.001$), samples from China do not show a significant relationship ($r_m = 0.055, k = 13, n = 23,901, p = 0.193$), supporting arguments that managerial opportunism might be stronger in China than in the USA (Jia and Zhang 2014). Including concurrent relationships supports these results by finding a slightly stronger mean correlation for US-based samples ($r_m = 0.094, k = 53, n = 25,762, p < .001$) than for samples from China ($r_m = 0.056, k = 23, n = 51,957, p = 0.031$).

The last study design factor which was expected to influence the relationship between CP and subsequent CFP was the year or decade of the data acquisition (RQ3f). While in the decade 1980–1990 a small sample of effect sizes showed a positive but insignificant relationship ($r_m = 0.155, k = 5, n = 315, p = 0.141$), for the decade 1990–2000 there were only two effect sizes captured, which resulted in omitting this subgroup. For the decade of 2000–2010, however, a significant positive relationship was found ($r_m = 0.080, k = 27, n = 24,947, p = 0.010$). When concurrent relationships were added to the analysis, which especially in early years were often used to assess CFP as a determinant of CP, the relationships found for 1980–1990, 1990–2000, and 2000–2010 were all significantly positive for this extended analysis ($r_m = 0.164, k = 11, n = 1,071, p = 0.003; r_m = 0.078, k = 12, n = 18,643, p < 0.001;$ and $r_m = 0.063, k = 33, n = 56,729, p = 0.003$, respectively).

Summing up the results from the previous section with regard to RQ3, we found that the positive relationship of CP and CFP holds across a wide range of study designs and for most investigated subgroups. However, there are several groups in which the relation did not hold and further examination might be necessary in the future. Furthermore, we found that the distinction of time-lagged measurement also plays a crucial role for subgroup analysis and can provide further ground for theorization.

4.3 Methodological moderators

The results in Table 4 show that the average relationship between CP and subsequent CFP continues to be significantly positive if the effect of other variables is partialed

Table 4 Overview of research questions and findings

Research question	Research question description	Finding of a significant ($p < 0.1$) positive relationship	Impact for management control systems (MCS) following the levers of control framework of Simons—exemplary pathways for integration for positive relations (if all subgroups are positive, no further differentiation is made)
RQ1	Is there a positive relationship between CP and CFP?	Yes	CP should get explicit management attention and be integrated in companies' MCS
RQ2	Does the relationship hold for subgroups of studies that consider different temporal sequences of variable measurement?		
	Prior measurement of CFP (*causal interpretation possible*)	No, no relation	
	Concurrent measurement of CFP and CP (*no causal interpretation possible*)	Yes, pos. relation	CP should be integrated in diagnostic controls as it is connected to superior CFP (for specific suggestions based on subsequent analyses, see below)
	Subsequent measurement of CFP (*causal interpretation possible*)	Yes, pos. relation	CP should be integrated in all four levers as it may be connected to new business opportunities
RQ3	Does the relationship hold for subgroups of studies that differed with regard to the…		
RQ3a	…employed CFP indicator?	Yes, for all subgroups	CP/CFP quota could be part of diagnostic controls and be used for benchmarking, if appropriate
	Accounting-based measures	Yes, pos. relation	
	Market-based measures	Yes, pos. relation	

Table 4 continued

Research question	Research question description	Finding of a significant positive relationship ($p < 0.1$)	Impact for management control systems (MCS) following the levers of control framework of Simons—exemplary pathways for integration for positive relations (if all subgroups are positive, no further differentiation is made)
RQ3b	…employed CP indicator?	Yes, for all subgroups	CP indicator(s) should be integrated in interactive controls and specified according to stakeholder perception
	Donation dummy	Yes, pos. relation	
	Donation amount	Yes, pos. relation	
	Relative donations	Yes, pos. relation	
RQ3c	…donation medium included in the CP measure?	Only partially	
	Cash only	Yes, pos. relation	Cash donations should be integrated in boundary systems for subordinate units and corresponding diagnostic controls could be specified
	Cash and in-kind donations	No, no relation	
	Cash, in-kind, and volunteering	Insufficient data	
RQ3d	…time horizon of donations included in the CP measure?	Only partially	
	Continuous	Yes, pos. relation	CP integrated in boundary system for subordinate units
	Disaster relief	No, no relation	
RQ3e	…sample country?	Only partially	Integration of CP in MCS should be country specific
	China	No, no relation	
	USA	Yes, pos. relation	

Table 4 continued

Research question	Research question description	Finding of a significant ($p < 0.1$) positive relationship	Impact for management control systems (MCS) following the levers of control framework of Simons—exemplary pathways for integration for positive relations (if all subgroups are positive, no further differentiation is made)
RQ3f	…year of sample collection?	Only partially	
	1980–1990	No, no relation	
	1990–2000	Insufficient data	
	2000–2010	Yes, pos. relation	New trend should be communicated to managers via the MCS
RQ4	Does the relationship hold for subgroups of studies that calculated partial correlations…		
RQ4a	…in general?	Yes, pos. relation	CP should be integrated in all four levers as it may be connected to new business opportunities
RQ4b	…controlling for firm size?	No, no relation	
RQ4c	…controlling for industry effects?	No, no relation	
RQ4d	…controlling for advertising intensity?	Yes, pos. relation	CP should be integrated in MCS for the marketing department
RQ4e	…controlling for past CFP?	No, no relation	
RQ4f	…controlling for public ownership?	Yes, pos. relation	CP should be integrated in boundary system in order to avoid managerial opportunism

out ($r_m = 0.171, k = 30, n = 58,023, p = 0.02$). The fail-safe k of 1164 effect sizes ($p = 0.05$) for this result again indicated the absence of a possible publication bias. When the sample is extended to contain concurrent and subsequent time lag measurements jointly, this relationship persists ($r_m = 0.121, k=83, n=96,687, p = 0.002$).

This finding could not be confirmed for all investigated subgroups. However, for each of the included control variables the calculated mean correlation coefficients remains positive, with significant relationships for advertising intensity ($r_m = 0.098, k = 4, n = 13,568, p = 0.025$) and public ownership ($r_m = 0.129, k = 6, n = 10,834, p < 0.001$), and with insignificant results for firm size and industry effects, which were both controlled by the same subsample of studies ($r_m = 0.139, k = 24, n = 41,047, p = 0.128$), as well as past financial performance ($r_m = 0.101, k = 5, n = 8,243, p = 0.120$). When concurrent relationships were added to the sample, all the subgroups which had controlled for one of these variables showed significantly positive relationships, except for the subsample which had controlled for public ownership ($r_m = 0.083, k = 9, n = 16,840, p = 0.102$).

5 Discussion

5.1 Summary and interpretation of findings

All findings regarding our research questions are discussed in the following sections and summarized in Table 4. Additionally, following the idea of evidence based management (Barends et al. 2014), we deduct exemplary consequences for management control from the results yielded by our meta-analysis. Consequently, for each subgroup where a significant positive relationship was found, Table 4 outlines conclusions for the integration of CP into management control systems.

RQ1—general CP–CFP relationship Based on a sample of 100 bivariate effect sizes, the general existence of a positive relationship between CP and CFP was confirmed by our meta-analysis results. This relationship formed the foundation of our study and was tested for its dependency on different study designs.

RQ2—time-lagged measurements The first and most important question that we posed was whether the positive relationship would hold when temporal sequences of variable measurement were considered in a way that allows for the implication of a causal relationship between CP and CFP. The subgroup of effect sizes that measured CFP prior to CP, which might have shown empirical evidence for the slack resources theory, did not show a significant positive relationship. Studies that used concurrent and subsequent measurement of CFP, on the other hand, did show a significant positive relationship. This finding supports arguments of stakeholder theory and the idea that CP as a part of organizational belief and value systems can positively influence a company's financial performance (Simons 1994). Furthermore, this provides arguments for the stronger implementation of CP into all four of Simons levers of management control (Simons 1994).

RQ3—study design factors Contrary to previous results of other meta-analyses (Orlitzky et al. 2003; Margolis et al. 2009), the relationship between CP and CFP was not found to differ between subgroups using either accounting or market-based measures (RQ3a). This finding suggests that stockholders either indeed appreciate the reputational capital built by CP or they perceive giving to charity as a positive signal of strong financial performance. Either way, stockholders positively acknowledge CP activities. Similarly, internal accounting performance measures show a positive effect on CFP.

Besides the different possibilities of measuring CFP, it was also assessed if the indicator used to measure CP changed the results. First of all, the relationship remained significantly positive regardless of the CP indicator and it made no significant difference if CP was measured by a donation dummy, absolute donations, or relative donations (RQ3b). Furthermore, the two lettered subgroups of studies measuring CP with absolute or relative donations showed about the same strength in its relationship to CFP. A possible explanation for this finding is the limited perception of some stakeholders, e.g. customers or local communities. These might very well perceive the absolute amount of donations made by companies, but setting these donation amounts in relation to total firm resources seems to be beyond the means of the average customer. Following this line of thought, large amounts of charitable donations can cause large amounts of positive public attention and can hence generate a positive CFP impact on the same level as generosity in terms of relative donations. Finally, supporting the idea of an inverted u-shaped relationship between CP and CFP, a quite small sample indicates that initial participation in CP activities might have a stronger impact on CFP than ever increasing donations.

With regard to the donation medium included in the CP measurement (RQ3c), and contrary to our expectations, results indicated that the inclusion of in-kind donations did yield less business benefits compared to the donation of only cash. A possible explanation for this finding could be that managerial opportunism, i.e. agency costs, are a greater problem with in-kind donations because they are less controlled than philanthropic cash flows. In this context, management control boundary systems might play a crucial role in directing donations according to the company's purposes (Simons 1994). Moreover, stakeholders might perceive cash donations to community purposes as more genuine compared to in-kind donations of company products.

While a positive relationship was empirically shown for studies investigating continuous CP efforts, the subgroup of studies exploring disaster relief donations did not show a significant relationship (RQ3d). A reason for the fact that the positive relationship does not hold for effect sizes which measured disaster relief donations might be that most of the studies in this subsample focused on stock market values a few days after the incident. Medium and long-term effects of CP cannot adequately be captured by this approach, which is why no significant relationship was found.

With regard to the country where the data was gathered, results did not confirm that in developed countries (i.e. the USA) the relationship between CP and CFP was significantly different from the found relationship in developing countries (i.e. China; RQ3e). However, while in the USA the relationship was significantly positive, in China it was not, mainly due to the great heterogeneity of integrated effect sizes from Chinese samples. A possible explanation for the wide range of results

for China could be that within the country there exist regions with large differences regarding their degrees of development, respective CSR expectations, and market inefficiencies (Su and He 2010; Wang and Qian 2011). Furthermore, state or private ownership of companies might play an important role for the wide spread of results for China (Zhang et al. 2010; Qiu 2013) as agency costs might be greater for companies with state affiliations because managers make donations to increase their personal standing instead of company value (Jia and Zhang 2014). Filtering the studies according to their time of data acquisition showed that a significant positive relationship could only be assessed for the last decade, which supports the assumption that the relationship has strengthened over time (RQ3f). Still, in the context of this finding it should be considered that the majority of empirical research was based on data from the decade 2000–2010 and very little data was available on previous decades.

RQ4—methodological moderators Not to include the influence of moderating variables into such an analysis could easily compromise the validity of any findings (McWilliams and Siegel 2000). To eliminate the upward bias derived from CP-correlated variables which also influence CFP, such as advertising intensity or firm size, the effect of these variables can be controlled by partial correlations. It was found that, when only partial instead of bivariate correlations were analyzed, the relationship between CP and subsequent CFP was still significantly positive (RQ4a). However, we found mixed results when different control variables were considered individually (RQ4b–f). The relationships of the subgroups of studies that controlled for firm size, industry effects, or past financial performance, although remaining positive, were no longer significant. To resolve doubts concerning this matter, future research should always include the mentioned control variables into the analysis.

Summing up our meta-analysis results, the following can be stated. Regarding the recent suggestions of Schaltegger and Burritt (2015) and arguments of agency theory, no evidence was found suggesting that CP would mainly inflict costs and, as a consequence, negatively influence CFP. On the contrary, a statistically significant positive relationship between CP and subsequent CFP was found, which allows for the interpretation of a causal effect of CP on CFP. Additionally, this positive effect was found to hold for the majority of study designs that were used for its investigation. Although the relationship was not significantly positive for every subgroup analyzed, there was not a single case in which a negative relationship was found. Thus, we could identify no particular context in which CP would harm a company's financial situation, but often found evidence for the opposite justifying a stronger attention to CP in the context of management control systems.

5.2 Limitations and further research

The goal of this study was to provide empirical evidence for the existence of a causal relationship between CP and CFP and only time-lagged measurements were valid for this purpose (Mitchell and James 2001). Although the inclusion of concurrent relationships, which in all cases supported our results, would have considerably enlarged our sample size, research questions were answered based only on observations which

had introduced a time lag into their study designs. As a consequence, significant statistical relationships were found which allowed inferring a positive effect of CP on CFP. We encourage future research to construct their methodological design according to the intended findings and to employ time-lagged variables when investigating causal relationships. This would allow theoretical arguments to be founded on a more solid ground and future meta-analyses studies to draw on even more extensive samples and conduct more detailed analyses. Particularly, future research should thrive to close gaps of knowledge that could not be thoroughly investigated in this study for a lack of data. Specific attention should be paid to the following aspects.

First of all, relative donations as a possible indicator of CP were often measured in relation to pre-tax-earnings, sales, or some other accounting variable. However, donations in comparison to industry standards or competitors as well as donation growth should be established as alternative CP measures to eliminate cross-lagged effects between CP and CFP. Although some studies controlled for industry effects and past CFP within their sample, this should be the standard for all studies investigating the CP–CFP relationship. Similarly, including donation growth as a CP indicator, on which almost no data was found within our sample, should become a common practice. Moreover, motivated by the considerable number of studies which did not indicate if they included in-kind donations in their measurement, and the almost non-existence of studies which have addressed the CFP impacts of employee volunteering, it is recommended that more attention is addressed to these issues in future research.

The most important issue which could not be extensively addressed by our meta-analysis is a possible inverted u-shape relationship between CP and subsequent CFP, implying that there is an optimal level of donations (Wang et al. 2008; Chen and Lin 2015). In this context, theories which propose positive and negative relationships between CP and subsequent CFP might coexist with one effect influencing the other. Unfortunately, there were not enough observations to conduct any meta-analytical analysis to evaluate this u-shape theory. However, this might be an interesting and important direction of further empirical investigation.

Furthermore, our study design did not allow for the discernment of different kinds of direct, indirect, and cross-lagged effects between CP and CFP. As a consequence, although sample subgroups were used to test for the relationship in different contexts and a starting point for more detailed analyses was established, the theoretical lines of argumentation remain very presumptive. To go beyond establishing *if* a causal relationship exists and explore more soundly *how* this causal effect is achieved, further investigation of moderating and mediating variables is necessary. Numerous studies have already investigated the impact of CP on corporate reputation, on consumer perception, and on employee motivation. Integrating and advancing research on these mediators could excellently complement and expand the findings which were made by our meta-analysis.

Finally, the integration of ideas from management control system literature into this field of study could provide a fruitful ground for rich discussions on the mechanisms of how and under which circumstances CP might have an effect on CFP and company success. While CP activities can generally be seen to represent company belief and value systems, which attract and motivate employees, boundary systems

might be necessary to restrict managerial opportunism from leading to agency costs (Simons 1994). Moreover, as stakeholders' interests represent an increasingly important part of a company's goal dimensions, it seems to be a reasonable step to include social activities, such as CP, in diagnostic and interactive management control systems which are used to steer financial and non-financial outcomes and might help to align both interests (Chenhall 2003). This becomes all the more relevant for companies where CP, leading to community welfare, is not only a strategic instrument for shared value creation but a desired outcome of their business activities (Godfrey 2005).

6 Conclusion

At the beginning of this study, we raised the question of whether CP was a form of CSR that could indeed yield economic benefits for companies. Our meta-analysis results found that, in addition to a general positive relationship between CP and CFP, there exists a statistically significant relationship between CP and subsequent CFP, which allows for the implication of a causal relationship. This finding suggests a stronger implementation of CP into management control systems to steer and understand the positive influence of CP on CFP.

This relationship remained significantly positive throughout a variety of subgroup analyses. Nevertheless, integration of effect sizes in a number of subgroups also showed insignificant relationships between CP and subsequent CFP. Consequently, future research should pay careful attention to their study design when comparing and interpreting findings. Especially time-lagged measurements should be implemented when seeking to investigate causality. Furthermore, control variables should be included to negate any doubts about the validity of results.

By finding a positive effect of CP on CFP, but pointing out how different conditions might affect this relationship, this study provides a starting point for investigating how and under which circumstances CP can positively influence CFP. In this context, the possible existence of an inverted u-shaped relationship, closer examinations of mediating variables, and integrating perspectives from management control literature are suggested as promising new avenues for extending our understanding of this relationship. Finally, our study has shown that the positive impact of CP on CFP clearly dominates possible negative effects across a wide range of study designs and sample contexts. As a consequence, the notion that CP only inflicts costs needs to be finally left behind as it might mistakenly direct decision-makers to abandon their CP activities. It is important to make clear that CP can make an important contribution to both society's well-being and a corporation's economic success.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest

Appendix 1

Coding on observation level - Effect size data (own illustration)

Effect size data on observation level	
Reported effect size statistic	- Bivariate correlation
	• Correlation coefficient (r)
	• Group comparison (F, p, t, Z)
	- Partial correlation
	• Group comparison (F, p, t, Z)
	• Regression coefficient (p, SE, t)
CP indicator	- Donation amount
	- Donation dummy
	- Generosity (relative donations)
Financial indicator type /	Accounting-based CFP measure
Financial indicator	- Altman Z-score (hybrid)
	- Return on assets (ROA)
	- Return on equity (ROE)
	- Return on capital employed (ROCE)
	- Earnings per share (EPS; hybrid)
	- Earnings before taxes (EBT)
	(Stock) Market-based CFP measure
	- Access to funding
	- Market model alpha
	- Market risk (Beta)
	- Market valuation premium
	- Stock Return (abnormal or excess returns)
	- Tobin's Q (hybrid)
Time lag (measurement of CFP variable in relation to the CP variable)	- Prior
	- Concurrent
	- Subsequent
Effect size	Reported in or converted to correlation coefficient r.
Sample size	Reported in firm years per observation
Sign	- Negative (2)
	- Positive (3)

Note. F = F-value; p = significance level; SE = standard error; t = t-statistic; Z = Z-score corresponding to respective p-value within standard normal distribution

Appendix 2

Coding on observation level - Study design factors (own illustration)

Study design factors on observation level	
Donation medium included into CP measurement[i]	- Only cash
	- Cash and in-kind
	- Including volunteering
Time horizon of donation	- Continuous
	- Disaster relief (event study)
Country of origin of sample data[ii]	- South Korea
	- China
	- Malaysia
	- UK
	- USA
Reference year of sample data	First captured individually, then categorized into time frames/decades
Advertising intensity	- Controlled for as moderator
	- Not controlled for as moderator
Firm size	- Controlled for as moderator
	- Not controlled for as moderator
Industry	- Controlled for as moderator
	- Not controlled for as moderator
R&D spending	- Controlled for as moderator
	- Not controlled for as moderator
Past CFP	- Controlled for as moderator
	- Not controlled for as moderator
Public Ownership	- Controlled for as moderator
	- Not controlled for as moderator

[i] *not assessed were 35 effect sizes (19 concurrent and 16 subsequent) where it was not mentioned which donation medium was included into the analysis*
[ii] *One, two, and two concurrent observations from Malaysia, South Korea, and the UK, respectively, were neglected from the subgroup analysis because the effect size samples were smaller than three and no subsequent relationships were reported for these studies*

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