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Corporate social responsibility and financial performance relationship: a review of measurement approaches

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ABSTRACT

The relationship between corporate social responsibility (CSR) and corporate financial performance (CFP) has been subject to extensive empirical enquiry. Yet the body of evidence that has accumulated about the nature of the relationship is equivocal. A commonly identified reason for the diverse and contradictory results is measurement issues pertaining to both concepts of interest. This article aims to review alternative operationalisations and measurement approaches for the CSR and CFP concepts that have been deployed in empirical literature concerned with the CSR–CFP relationship. Several findings emanate from our study. First, CSR operationalisations in empirical literature range from multidimensional to one-dimensional. Second, CSR measurement approaches include reputation indices, content analyses, questionnaire-based surveys and one-dimensional measures, whereas CFP measurement approaches include accounting-based measures, market-based measures and combined measures. Third, no CSR measurement approach is without drawbacks. In addition to approach specific drawbacks, two problems inherent in most approaches are researcher subjectivity and selection bias that may influence the nature of CSR–CFP relationship detected in empirical literature. Finally, potential pathways to remedy these drawbacks are suggested.

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1. Introduction

Classical economists argue that a company's only responsibility is to increase value for its shareholders (Friedman, 1970). In line with this view, the key objective of most companies, especially in the private sector, is to grow profits. However, achieving this objective should not cause negative side effects for other stakeholders and society as a whole. Businesses make up part of society and depend on it to attain their economic goals (Crane, McWilliams, Matten, Moon, & Siegel, 2008).

A recently emerged stakeholder theory argues that the better a firm manages its relationships with its stakeholders, the more successful it will be over time (Barnett & Salomon, 2012). Although all stakeholders can potentially affect firm performance, the mechanisms

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differ. Market constituents (e.g., employees, customers, suppliers, creditors) can directly trigger a shortfall in economic rents by making unfavourable economic choices (Delmas & Toffel, 2008). Non-market constituents (e.g., the general public, the media, NGOs) indirectly exert their influences by conveying information (Henriques & Sadorsky, 1999). Despite the different transmission mechanisms, the dissatisfaction of any stakeholder group can potentially affect economic rents and even compromise a company's future (Clarkson, 1995). In effect, socially responsible corporate action is increasingly argued to be a prerequisite for protecting the bottom line and boosting shareholder value (Epstein & Rejc-Buhovac, 2014).

The debate on the relationship between corporate social responsibility (CSR) and corporate financial performance (CFP) has been ongoing (Alexander & Buchholz, 1978). Yet empirical results concerning the nature of the relationship are equivocal. Some studies detect a positive relationship, while various others find negative, no or even curvilinear (e.g., U-shaped) relationships. Despite this diversity, based on their meta-analyses, Margolis, Elfenbein, and Walsh (2007) and Orlitzky, Schmidt, and Rynes (2003) conclude that a positive relationship is more common than other types.

A commonly identified reason for the equivocal empirical results concerns how the CSR and CFP concepts are operationalised and measured. CFP is typically measured with profitability ratios retrieved from financial statements that are relatively standardised and readily available. However, for several reasons the measurement of CSR is far more problematic. The first challenge is the lack of consensus concerning operationalisation of the CSR concept (Dahlsrud, 2008). The second challenge involves measurement issues. This is because information concerning this concept is mostly non-financial and there is little, if any, reporting standardisation (Tschopp & Nastanski, 2014). The third issue is disclosure. CSR reporting in many jurisdictions is not mandatory.

The article herein aims to review alternative operationalisation and measurement approaches for the CSR and CFP constructs deployed in empirical literature concerned with the CSR and CFP relationship. Alternative measurement approaches are identified and analysed. The first contribution of this article is a systematic synthesis of advantages and drawbacks of alternative approaches deployed in existing empirical literature. Two drawbacks identified that are inherent in most approaches are researcher subjectivity and selection bias. The second contribution is a suggestion of potential future pathways for measuring CSR that would remedy these drawbacks. In particular, the study builds a case for standardisation and greater disclosure of CSR information. Such standardisation would not only be beneficial for valid testing of the CSR–CFP relationship but also for a range of stakeholders when making their economic decisions.

The structure of the article is as follows: The article starts by describing the CSR concept. Then the empirical findings on the relationship between CSR and CFP are presented. This is followed by a critical review of different methods used to measure CSR and CFP. Finally, a discussion and concluding remarks are provided.

2. Corporate social responsibility

CSR has been studied for some time now, but a consensus is still missing concerning its definition and its constituent dimensions, constructs and principles (Crane et al., 2008).

In a comprehensive literature review, Dahlsrud (2008) identified 37 different definitions of CSR. There is great variation in these CSR perceptions and definitions. For example, Friedman (1970) argues that 'the only social responsibility of a company is to increase its

profits' whilst staying 'within the rules of the game'. Contrary to that, Davis (1973) argues that CSR requires 'consideration of issues beyond the narrow economic, technical, and legal requirements of the company' (cited in Crane et al., 2008). These two definitions sit on opposite sides. The first suggests that a company is responsible solely to its shareholders, while the second argues that the interests of other stakeholders, apart from the shareholders, should also be considered.

It is noteworthy that the EU Commission as the highest legislative body in the EU has also proposed a definition of CSR. The Commission defines CSR as 'actions by companies over and above their legal obligations towards society and the environment' (European commission, 2011). The Commission's definition is in line with Davis (1973) definition of CSR as it explicitly includes the interests of stakeholders other than shareholders.

Not surprisingly, due to the wide range of CSR definitions, perceptions of CSR also vary considerably among companies, managers and ordinary people (Lau, Hulpke, To, & Kelly, 2007). Yet some consensus appears to be emerging in the CSR literature. One common theme behind CSR writings is that managers should focus on multi-stakeholders' welfare instead of concentrating only on maximising the wealth of the shareholders (Becchetti & Trovato, 2011). Stakeholders include 'groups or individuals who benefit from or are harmed by corporate action' (Melé, 2008). Therefore, stakeholder groups are wider than shareholder groups, which only include the providers of equity for the company. Another common theme is the key areas of CSR. These include the economic, environmental and societal pillar (Cadez & Guilding, *in press*; Epstein & Rejc-Buhovac, 2014; Škare & Golja, 2012).

Companies engage in CSR activities for several reasons. These range from pure philanthropy (actions taken for a better world and society without any direct payback) to conformity with institutional pressures from the external environment and explicit return benefits such as financial gains and stronger reputation (Lee & Shin, 2010). Barnett and Salomon (2006) summarised the following benefits for a company of being socially responsible: (1) it is easier to attract resources; (2) it can obtain quality employees; (3) it is easier to market products and services; (4) it can create unforeseen opportunities; and (5) it can be an important source of competitive advantage. In a similar way, Weber (2008) also identified five potential benefits of CSR for companies: (1) the positive effects on a company's image and reputation; (2) a positive effect on employees' motivation, retention and recruitment; (3) cost savings; (4) increased revenue from higher sales and market share; and (5) a reduction of CSR-related risk.

While the above-mentioned benefits are realised at the firm level, CSR also has macro-level effects. Škare and Golja (2014) found that a bigger share of socially responsible firms in an economy is related to higher economic growth. Thus, corporate CSR is also a significant determinant of economic growth at the level of an economy.

3. Empirical evidence on the CSR–CFP relationship

A vital issue in corporate governance and management is the influence of CSR on companies' performance, especially financial performance. The conventional view holds that CSR is costly since being socially responsible incurs additional expenses. Examples of socially responsible actions include investments in pollution reduction, employee benefits packages, donations and sponsorships to the community, etc. The conventional view maintains

that these expenses will deteriorate profitability and lead to ‘competitive disadvantage’ (Alexander & Buchholz, 1978).

An opposite view is promoted by stakeholder theory, first introduced by Freeman in 1984. The dissatisfaction of any stakeholder group can potentially affect economic rents and even compromise a company’s future (Clarkson, 1995). CSR is therefore a prerequisite for protecting the bottom line (Epstein & Rejc-Buhovac, 2014). In line with this theory, managers should take account of all individuals and groups with a ‘stake’ in or claim on the company (Melé, 2008), not just the shareholders (Ruf, Muralidhar, Brown, Janney, & Paul, 2001). If managed properly, CSR will not only improve the satisfaction of these stakeholders but also lead to improved financial performance (Aver & Cadez, 2009). For example, satisfied employees will be more motivated to perform effectively, satisfied customers will be more willing to make repeat purchases and recommend the products to others, satisfied suppliers will provide discounts, etc.

As is evident, theoretical rationale suggests both a potentially negative or positive relationship between CSR and CFP. The question therefore arises as to which effect prevails. It appears reasonable to consult the empirical literature to determine an answer to this question. The main findings of the empirical literature review are summarised in Table 1.

Table 1. The nature of the CSR–CFP relationship identified in the empirical literature.

Nature of the CSR–CFP relationship	Representative references
Positive	Al-Tuwaijri et al., 2004; Burnett & Hansen, 2008; Erhemjamts et al., 2013; Rodgers et al., 2013
Negative	Baird, Geylani, & Roberts, 2012; Peng & Yang, 2014
No relationship	Alexander & Buchholz, 1978; Aupperle et al., 1985; Soana, 2011; Sun, Salama, Hussainey, & Habbash, 2010; McWilliams & Siegel, 2000
U-shaped/inverted U-shaped	Barnett & Salomon, 2012; Bowman & Haire, 1975

Source: Authors’ summary based on the literature review.

As Table 1 shows, some studies identify a positive relationship between CSR and CFP, suggesting that being socially responsible improves profitability. If CSR has a positive effect on CFP, it is also likely that socially responsible investments have a positive rather than a negative effect on shareholder value (Moser & Martin, 2012), meaning that CSR is also favourable for the shareholders.

On the contrary, some studies point to a negative relationship. This finding is consistent with a view that social responsibility incurs costs and deteriorates profitability. In Friedman’s view, such behaviour is socially irresponsible because the sole responsibility of firms is profit. However, the negative link between CSR and CFP does not imply the complete abandonment of socially responsible corporate action. Many managers believe it is important to be good corporate citizens even when doing so is at the expense of shareholders (Moser & Martin, 2012). In addition, shareholders can also be ethical and may require CSR action even at the cost of reduced financial performance (Mackey, Mackey, & Barney, 2007).

The third documented relationship is no relationship. Studies within this vein suggest that being socially responsible does not improve profitability, but it also does not deteriorate it. The positive and negative effects of CSR apparently cancel themselves out.

The last detected relationship between CSR and CFP is U-shaped. Barnett and Salomon (2012) found that companies with low CSR performance have high CFP, companies with moderate CSR performance have lower CFP, whereas companies with high CSR performance

have the highest CFP. Interestingly, a much earlier study by Bowman and Haire (1975) documented an inverted U-shaped relationship. This means that mediocre CSR is related to the highest financial performance whereas low and high CSR are related to lower financial performance.

Taken together, it is evident that the empirical literature does not provide conclusive evidence on the nature of the CSR–CFP relationship. Possible explanations for such inconclusive findings have been offered by many authors (Surroca, Tribó, & Waddock, 2010). These include, among others: (1) the poor theoretical foundation of the CSR concept (Ruf et al., 2001); (2) the omission of relevant variables in model specifications (McWilliams & Siegel, 2000); (3) the lack of a clear direction of causality (Waddock & Graves, 1997); and (4) measurement issues (Davidson & Worrell, 1990; Griffin & Mahon, 1997), and sampling limitations (van Beurden & Gössling, 2008).

The study herein is focused on operationalisation and measurement issues. These are explored in more detail in the following sections.

4. Review of approaches for measuring corporate social responsibility

CSR measurement is complicated for two reasons. First, as outlined earlier, a consensus is missing on the theoretical meaning of the CSR concept (Dahlsrud, 2008). Second, the concept is multidimensional with relatively heterogeneous dimensions (Carroll, 1979).

Due to the lack of consensus and complexity of the concept, it is not surprising that many different approaches have been used in the literature to measure CSR. Different approaches could be summarised in following groups, ordered here by their frequency of use: (1) reputation indices; (2) content analyses; (3) questionnaire-based surveys; and (4) one-dimensional measures. The following sub-sections explore these measurement approaches in greater detail.

4.1. Reputation indices

The most common way of measuring CSR is via reputation indices compiled by specialised rating agencies. Major indices include the MSC KLD 400 social index (e.g. Erhemjamts, Li, & Venkateswaran, 2013), Fortune magazine reputation index (e.g., Preston & O'Bannon, 1997), Dow Jones Sustainability Index (e.g., Škare & Golja, 2012) and Vigeo Index (e.g., Girerd-Potin, Jimenez-Garcès, & Louvet, 2014). In addition to these major indices, there are many national indices like the Index of CFIE-French Corporate Information Centre for French companies (Ducassy, 2013), Respect index for Polish companies (Lech, 2013) and CSR Index for Croatian companies.

Reputation indices typically acknowledge the multidimensional nature of CSR. CSR dimensions appraised by the major indices identified above are shown in Table 2. Despite different number of dimensions, key themes are similar across indices (e.g., natural environment, employees, society, etc.). Also noteworthy is a comparison of MSCI KLD and Fortune indices, conducted by Griffin and Mahon (1997), which revealed that they are quite similar to each other.

Most commonly used index for measuring CSR is MSCI KLD due to its comprehensive and prominent data on stakeholder management (Coombs & Gilley, 2005) and public data availability (Deckop, Merriman, & Gupta, 2006). It should be noted however that the comprehensiveness view is disputed by other authors who claim that Fortune most admirable

Table 2. CSR dimensions included in major reputation indices.

MSCI KLD 400 social index	Fortune magazine Most admirable	Vigeo index	Dow Jones Sustainability Index
<ol style="list-style-type: none"> 1. Environment 2. Community and Society 3. Employees and Supply Chain 4. Customers 5. Governance and Ethics 	<ol style="list-style-type: none"> 1. Innovation 2. People management 3. Use of corporate assets 4. Social responsibility 5. Quality of management 6. Financial soundness 7. Long-term investment value 8. Quality of products/services 9. Global competitiveness 	<ol style="list-style-type: none"> 1. Human resources 2. Environment 3. Corporate governance 4. Community involvement 5. Business behaviour 6. Human rights 	<p>ECONOMIC DIMENSIONS</p> <ol style="list-style-type: none"> 1. Corporate governance 2. Risk and crisis management 3. Codes of conduct/compliance/anti-corruption and bribery 4. Industry-specific criteria <p>ENVIRONMENTAL DIMENSIONS</p> <ol style="list-style-type: none"> 5. Environmental reporting 6. Industry-specific criteria <p>SOCIAL DIMENSIONS</p> <ol style="list-style-type: none"> 7. Human-capital development 8. Talent attraction and retention 9. Labour practice indicators 10. Corporate citizenship/philanthropy 11. Social reporting 12. Industry-specific criteria

Source: Fortune, The World's Most Admired Companies (n.d.); McGrawe Hill Financial, S&P Dow Jones Indices, 2015; MSCI ESG Indexes (n.d.); Vigeo Eiris Rating (n.d.).

index is most comprehensive and comparable (Johnson & Houston, 2000; McGuire, Sundgren, & Schneeweis, 1988). The Vigeo index is mostly used when appraising European countries (Girerd-Potin et al., 2014; Van de Velde, Vermeir, & Corten, 2005) where other indices often are not available. Dow Jones sustainability index is richest in terms of underlying dimensions (e.g., risk and crisis management) and geographic area covered (see Table 3). Artiach, Lee, Nelson, and Walker (2010) also identified Dow Jones sustainability index as the best-in-class due to their coverage of all industry sectors. The debate above suggests that there is no consensus on which reputational index is the best measure of CSR.

The chief advantages of indices are data availability (thus minimising data collection effort) and comparability across firms.

The indices also have many weaknesses. First, they are typically compiled by private firms that have their own agendas and do not necessarily use scientific methods (Graafland, Eijffinger, & SmidJohan, 2004; Unerman, 2000). Related to this, rating agencies often merely provide aggregated CSR scores even though researchers may sometimes be only interested in certain CSR dimensions.

The second major weakness is the rating agencies' limited coverage of firms. In terms of geographic area, many indices simply cover a particular region or country. Table 3 provides information on the geographic coverage of the four main indices presented in Table 2.

Coverage is also limited in terms of the number of firms rated. Typically, indices concentrate on large and publicly listed companies. Some reputation indices like the MSCI KLD index and the Dow Jones Sustainability index exclude companies operating in industries considered non-sustainable like: tobacco, firearms, alcohol, adult entertainment, etc. In effect, many socially and environmentally responsible companies may not make it onto the list due to their size, geographic location or industry affiliation (Adam & Shavit, 2008).

4.2. Content analysis

The second common way of measuring CSR is content analysis of corporate communication. Content analysis generally includes determining the constructs of interest, seeking information about these constructs and codifying qualitative information to derive quantitative scales that can be used in subsequent statistical analyses.

Content analyses differ with respect to number of dimensions appraised and coding sophistication. A relatively simple way of coding is counting words or sentences (Aras, Aybars, & Kutlu, 2010) in reports and publications on the specific CSR issue under consideration (e.g., CO₂ reduction) and assigning binary variables ('0' and '1') if a particular issue is mentioned. If several dimensions of CSR are being appraised, a binary score can be assigned to each dimension and then an integrated score can be determined (Abbott & Monsen, 1979).

A more advanced way of coding is pre-specification of CSR dimensions of interest and assigning interval scores, similar to Likert scales, to each CSR issue under consideration. One of the earliest attempts of pre-specification of dimensions is Social Involvement Disclosure scale (SID) by Abbott and Monsen (1979). Their appraisal included 24 CSR indicators grouped in six categories (environment, equal opportunity, personnel, community involvement, products and other). In a more recent study, Yang, Lin, and Chang (2009) rated companies over five different CSR dimensions (employee relations, environment, shareholder relations, product quality and relations with providers and customers, community)

Table 3. CSR indices' geographic coverage.

Index	Index coverage (sub-indices)
MSCI KLD 400	USA only
Fortune magazine most admirable	<ol style="list-style-type: none"> USA's most admirable companies World's most admirable companies
Dow Jones Sustainability Index (DJSI)	<ol style="list-style-type: none"> DJSI world <ul style="list-style-type: none"> Dow Jones Sustainability World Dow Jones Sustainability World Enlarged Dow Jones Sustainability Emerging Markets DJSI Regions <ul style="list-style-type: none"> Dow Jones Sustainability Asia/Pacific Dow Jones Sustainability Europe Dow Jones Sustainability North America DJSI Countries <ul style="list-style-type: none"> Dow Jones Sustainability Australia Dow Jones Sustainability Canada Select 25 Dow Jones Sustainability Korea Dow Jones Sustainability Korea Capped 25% Dow Jones Sustainability Chile
Vigeo ratings	<ol style="list-style-type: none"> The Euronext Vigeo Indices <ul style="list-style-type: none"> Euronext Vigeo World 120, Euronext Vigeo Europe 120, Euronext Vigeo Eurozone 120, Euronext Vigeo EM 70, Euronext Vigeo US 50, Euronext Vigeo France 20, Euronext Vigeo United Kingdom 20 and Euronext Vigeo Benelux 20 The Ethibel Sustainability Indices (ESI) <ul style="list-style-type: none"> ESI Excellence Global and ESI Excellence Europe

Source: MSCI ESG Indexes (n.d.); RebecoSam Sustainability investing, 2016; Vigeo Eiris Rating (n.d.); Fortune, The World's Most Admired Companies (n.d.).

on a 0–5 rating scale (where 0 = fulfilment of no criteria and 5 = fulfilment of all criteria). Karagiorgos (2010) and Chen, Feldmann, and Tang (2015) based their content analysis on GRI reports. More specifically, Karagiorgos (2010) used 26 indicators derived from GRI reports which were divided in two groups (social performance indicators and environment performance indicator) and rated on a scale from 0–3 (0 if indicator is not taken into account, 3 if indicator is fully taken into account). Similarly, Chen et al. (2015) used the 45 GRI indicators. Each indicator was scored on a 1–5 scale (1 = indicator not reported; 5 = indicator fully reported) by multiple raters.

The key advantage of this method is flexibility for the researcher. A researcher can specify CSR dimensions of interest, collect data according to those dimensions and code data numerically for further use in statistical analyses.

The main weaknesses of this approach is the researcher subjectivity embedded in all stages of the research process from the selection of CSR dimensions of interest, collection of data, interpretation of data and coding of data.

Another important drawback is reporting bias. CSR reporting is largely voluntary hence many organisations fail to report on their CSR activities even if they do engage in them. Such activities are obviously likely to go undetected by the researcher. Even if the companies do disclose CSR-related data, such data needs to be interpreted carefully as companies often immerse themselves in impressions management to create a more favourable image of their company through biased reporting (Cadez & Guilding, *in press*; Turker, 2009). This is difficult to detect unless the researcher is knowledgeable about the firms' socially responsible actions or if the report has been externally audited.

4.3. Questionnaire-based surveys

A questionnaire-based survey is typically used when a particular company is not rated by a rating agency and corporate reports are unavailable or insufficient for a meaningful content analysis. In such cases, researchers need to collect primary data about CSR by sending questionnaires to knowledgeable respondents or interviewing them.

One of the earliest questionnaire surveys concerned with CSR was conducted by Aupperle, Carroll, and Hatfield (1985). The measurement instrument was based on Carroll's (1979) four components of CSR (economic, legal, ethical and discretionary) and included 80 items, organised in 20 sets of statements (each set contained four statements; one for each component of CSR). Respondents were asked to allocate up to 10 points to each set of statements on CSR. For purposes of studying the CSR–CFP link, Rettab, Brik, and Mellahi (2009) combined different constructs for collecting data on CSR and CFP using a questionnaire. In a more recent study, Gallardo-Vázquez and Sanchez-Hernandez (2014) developed a CSR measurement scale intended to appraise social, economic and environmental dimension of CSR.

This method's main advantage is similar to that of content analysis. It provides great flexibility for the researcher in terms of specifying the dimensions of interest and collecting data about these dimensions.

The likely drawback of this method, in addition to general limitations of survey research, is response bias. The bias occurs at two levels. Selection bias will likely occur as more socially responsible firms are more likely to respond than firms that are less socially responsible (Cadez & Czerny, 2016). Attitude bias is to be expected as respondents may provide socially

desirable answers even though their actual behaviour may differ (Epstein & Rejc-Buhovac, 2014). An alternative for overcoming this drawback may be to collect data not only from firms, but also (or solely) from their stakeholders.

4.4. One-dimensional measures

One-dimensional constructs focus only on a single dimension of CSR, for example environmental management or philanthropy. Examples of environmental activities include pollution control investment data (Peng & Yang, 2014), deployment of a carbon-reduction strategy (Cadez & Czerny, 2016; Lee, 2012; Liu, 2012; Liu & Liu, 2016), eco-control usage (Henri & Journeault, 2010), the ratio of toxic waste recycled to total toxic waste generated (Al-Tuwaijri, Christensen, & Hughes, 2004), adoption of global environmental standard (Dowell, Hart, & Yeung, 2000), environmental proactivity (Primc & Čater, 2015), environmental management accounting implementation (Mokhtar, Jusoh, & Zulkifli, 2016), environmental sustainability policies (Naranjo-Gil, 2016), etc. Examples of philanthropic activities include donations (Lin, Yang, & Liou, 2009), growth in charitable contributions (Lev, Petrovits, & Radhakrishnan, 2010) and public health policies (Naranjo-Gil, Sánchez-Expósito, & Gómez-Ruiz, 2016).

The primary advantages of one-dimensional indices are data availability (thus minimising data collection effort) and comparability across firms.

Yet the use of one-dimensional constructs is theoretically problematic as the CSR concept is clearly multidimensional (Carroll, 1979). For example, a particular company may be strongly immersed in one dimension (e.g., employees) while it neglects another dimension (e.g., environmental issues). A multidimensional operationalisation will detect mediocre CSR while a one-dimensional operationalisation will detect either a high or low CSR where both, however, are incorrect.

5. Review of approaches for measuring financial performance

CFP is typically measured with accounting-based or market-based indicators. The most frequently used indicators are summarised in Table 4.

Each indicator has positive and negative traits. On the positive side, accounting-based measures are available for all companies and reasonably comparable. The chief advantage of market-based measures is their contemporariness. This means that they reflect changes in CSR faster than accounting-based measures.

Table 4. Commonly used indicators for CFP.

Accounting-based	Market-based	Accounting- and market-based
ROA – return on assets	Stock returns	Tobin's Q
ROE – return on equity	Market value of a company	MVA – market value added
ROCE – return on capital employed	Change in stock returns	
ROS – return on sales		
Net operating income		
Net income		
Zmijewski score		

Source: Authors' summary based on the literature review.

As for limitations, accounting-based measures are historical. Further, while total categories (e.g., net profit) fail to take company size into account (Al-Tuwaijri et al., 2004), relativised accounting ratios like return on assets (ROA) may be biased if the sample includes companies from different industries (due to the varying age and structure of assets across industries). The biggest limitation of market-based measures is that they are only available for publicly listed companies. In addition, market-based measures inevitably incorporate systematic (not-firm-specific) market characteristics (e.g., recession), whereas accounting-based indicators are more sensitive to company specific (unsystematic) perceptions of CSR (McGuire et al., 1988).

It is noteworthy that some researchers have combined both types of measures by using indicators such as Tobin's Q (market value/total assets) or MVA (market value–book value of equity and debt) (Garcia-Castro, Ariño, & Canela, 2010; Rodgers, Choy, & Guiral, 2013). Others have also tried to derive a comprehensive measure of financial performance by combining different existing measures to form one integrated index. Peng and Yang (2014) applied factor analysis to integrate various financial performance measures (ROA, return on equity [ROE], earnings per share, cash flows to asset) into a single index. Similarly, the financial health of a company (measured using a Zmijewski score – a construct based on a company's profitability, liquidity and leverage ratio) was another measure used as a proxy for accounting-based company profitability (Rodgers et al., 2013). It appears that recently there has been a tendency to use more than one measure of CFP.

6. Discussion and conclusion

The influence of CSR on CFP has long been an important issue for managers (Cochran & Wood, 1984). Despite ample empirical enquiry into the nature of this relationship, the empirical literature fails to provide conclusive evidence in that regard. The article focused on the operationalisation and measurement aspects of research designs in empirical literature concerned with the CSR–CFP relationship that may have contributed to divergent results in empirical literature (Griffin & Mahon, 1997).

Our literature review identified a range of approaches in use for both CSR and CFP concepts and ascertained their advantages and drawbacks. The main advantages and drawbacks of each approach identified in this study are summarised in Table 5.

Table 5. Advantages and drawbacks of alternative measurement approaches.

Measurement approach	Advantages	Drawbacks
For CSR		
- Indices	Data availability & comparability, multidimensionality recognised	Non-scientific, limited firm coverage (geography, size, industry)
- Content analysis	Flexibility for researcher	Researcher subjectivity, data non-disclosure, impressions management
- Questionnaire surveys	Flexibility for researcher	Researcher subjectivity, measurement error, non-response
- One-dimensional measures	Data availability & comparability	Theoretical invalidity
For CFP		
- Accounting-based indicators	Data availability & comparability	Historical data
- Market-based indicators	Contemporaneous data	Data only available for listed firms, also include systematic factors

Source: Authors' summary based on the literature review.

As is evident from Table 5, there is no perfect measure for CSR or CFP. Nevertheless, the measurement issue is more pertinent for CSR because financial reporting has a long history and is largely standardised while CSR reporting is a more recent development where little standardisation has been achieved so far (Tschopp & Nastanski, 2014).

Reputation indices carry the advantage of availability and comparability across firms due to standardised methods to compile them. For these reasons, they are widely used in empirical studies concerned with the nature of the CSR–CFP relationship (Soana, 2011). Nevertheless, indices are far from being ideal measures of CSR. One particular drawback is that they are typically compiled by private firms that have their own agendas and do not necessarily use rigorous methods that are usually expected in scientific research (Graafland et al., 2004). Another major disadvantage is a limited coverage of firms appraised. Agencies compiling indices typically focus on large, listed and well-known firms. This results in selection bias as these firms are under greater social pressure to be socially responsible and are thus likely to perform better in this regard as less visible firms (Henriques & Sadorsky, 1999).

Content analyses carry the benefit of high flexibility for the researcher. A researcher can self-select the CSR dimensions of interest, collect information concerning these dimensions, and code information in order to generate quantitative scores for potential subsequent quantitative analyses. The main problem of this approach is researcher subjectivity that may compromise the validity and reliability of results. Subjectivity is pertinent to all stages of the research process – selecting dimension of interest, collecting information about these dimensions, interpreting qualitative data and coding qualitative data for subsequent quantitative analyses. Another problem relates to data non-disclosure. Since CSR reporting in most jurisdictions is not mandatory, again there is a potential of selection bias. This is because more socially responsible firms are more likely to report about their achievements than less socially responsible firms (Cadez & Guilding, *in press*). Another related issue is impressions management (Weber, 2008), meaning that what is reported may be different to what is actually being done (reporting bias).

Questionnaire surveys are similar to content analyses in terms of advantages. A researcher can self-select the CSR dimensions of interest, collect information concerning these dimensions and code information in order to generate quantitative scores for potential subsequent quantitative analyses. This approach also allows approaching firms that do not disclose data publicly. However, this same approach suffers from researcher subjectivity. If the questionnaire is not well designed it is bound to result in measurement error meaning that questionnaire items are not valid and reliable measures of latent concepts that they are supposed to measure (Turker, 2009). This is particularly pertinent in the case of collecting information about sensitive concepts where some answers are more socially acceptable than other answers (Epstein & Rejc-Buhovac, 2014). Finally, there is a problem of response bias. It is an enduring finding in survey research that better performing firms with respect to the object of enquiry are more likely to respond than lower performing firms (Cadez & Czerny, 2016).

Finally, one-dimensional measures are often used because they are readily available and comparable across firms (e.g., CO₂ emissions). The problem with one-dimensional measure however is theoretical invalidity since the CSR concept is clearly multidimensional (Carroll, 1979). In effect, one-dimensional operationalisation may easily provide false conclusions since a particular company may be performing high in terms of one CSR dimension and

low in terms of another CSR dimensions, yet one-dimensional operationalisation is unable to detect such incidences.

As is shown from the discussion above, the use of any operationalisation and measurement approach for CSR is not without its problems and may potentially influence the detected relationship between CSR and CFP. Two problems appear to be inherent in most if not all approaches.

The first common problem is researcher subjectivity. Subjectivity is by definition intrinsic in all stages of content analyses and questionnaire surveys approaches but may also influence results in examining the CSR–CFP relationship when reputation indices or one-dimensional measures are used in statistical models. This is because it is researchers who specify models, variables that enter the models, and statistical tests to examine relationships, hence conclusions can be invalid even if CSR-related data is retrieved from reliable archival sources.

The second mutual challenge is selection bias. Reputation indices typically include only the largest and most successful firms that are under greater social pressure to be socially responsible (Epstein & Rejc-Buhovac, 2014; Henriques & Sadorsky, 1999). Similarly, companies that are more socially responsible are more likely to disclose this type of information which is a prerequisite for conducting content analyses (Abbott & Monsen, 1979). Finally, companies that are more socially responsible are more likely to respond to questionnaire surveys concerning this topic (Cadez & Czerny, 2016). In effect, reputation indices, content analyses and questionnaire surveys all appear to be biased towards detecting a positive relationship between CSR and CFP.

Fortunately, there are also remedies for these problems. A potential solution for researcher subjectivity problem is to standardise CSR reporting. Forty years ago Ramanathan (1976) called for the implementation of corporate social accounting with the aim of providing systematic information about a company's social performance, yet today we still fall short of generally accepted CSR reporting standards. Nevertheless, several standardisation initiatives are underway globally, such as the global reporting initiative (GRI), AccountAbility's AA1000 – principles standards, the United Nations Global compact communication of progress (COP), and ISO 26000.

A potential solution for response bias problem is mandatory disclosure of information. Although the number of companies issuing stand-alone CSR reports has increased dramatically (Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012), in most jurisdictions CSR reporting is not mandatory (some exceptions include France, Denmark and Sweden) (Tschopp & Nastanski, 2014). In the EU, this is currently changing with the directive on disclosure of non-financial and diversity information. The directive, which came into effect in 2017, places requirements on some large companies and groups to disclose information on policies, risks and outcomes regarding environmental matters, social and employee aspects, respect for human rights, anti-corruption and bribery issues, and diversity in their board of directors (EU Parliament and Council, 2014).

In conclusion, our review of operationalisation and measurement approaches for the CSR concept revealed that all approaches deployed in empirical literature suffer from weaknesses that may potentially influence the detected relationship between CSR and CFP. Two problems inherent in most, if not all, approaches are researcher subjectivity and selection bias. We argue that a potential solution for the first problem is standardisation of CSR reporting, whereas a potential solution for the second problem is mandatory disclosure of CSR information. Standardisation and disclosure would not only be beneficial for valid testing

of the CSR–CFP relationship but also for many stakeholders when making their economic decisions (Henriques & Sadorsky, 1999; Hillman & Keim, 2001).

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