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# The perceived trade-off between corporate social and economic responsibility: A cross-national study

**Jean-Claude Usunier**

University of Lausanne, Switzerland

**Olivier Furrer**

Radboud University Nijmegen, The Netherlands

**Amandine Furrer-Perrinjaquet**

University of Lausanne, Switzerland

## **Abstract**

We study cross-nationally whether managers view corporate social and economic responsibility as compatible, or incompatible. The conceptual framework builds on different theories that support alternative views of corporate responsibility compatibility. A set of hypotheses relates differences in cultural values, corporate governance systems, and managerial education to corporate responsibility compatibility. A corporate responsibility scale is developed and its cross-national invariance is tested. Data analysis, controlling for gender and work experience, shows that in countries with large power distance, with less strict corporate governance, and more integrated business education, social responsibility is perceived as relatively incompatible with economic responsibility, whereas in countries with smaller power distance, with stricter corporate governance, and more functional business education, social and economic responsibility are perceived as more compatible.

## **Keywords**

comparative management, corporate governance, corporate social responsibility, cross-cultural research

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## **Corresponding author:**

Jean-Claude Usunier, University of Lausanne, Faculty of Business and Economics (HEC), Internef Building, 1015 Lausanne, Switzerland

Email: [jean-claude.usunier@unil.ch](mailto:jean-claude.usunier@unil.ch)

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## Introduction

Pursuing profit-oriented objectives while emphasizing corporate social responsibility is often presented by the managerial press as compatible corporate goals, especially in the long term with a view to sustainable development (e.g. Barner, 2007; Grayson and Hodges, 2004). In the instrumental conception of corporate responsibility, meeting its social responsibility is necessary for a firm to fulfill its economic responsibility of increasing shareholder value, making corporate social and economic responsibility compatible (e.g. Waddock and Graves, 1997). According to this perspective, sacrificing some profits to finance expenses associated with social responsibility makes sense because a strong corporate image will in turn be a driver of business development (Donaldson and Preston, 1995; Jones, 1995; McWilliams and Siegel, 2001; Wright and Ferris, 1997). However, it is less clear whether corporate economic and social responsibility goals are fully compatible in the short run, when the size of the pie is rather fixed and different goals competitively draw on limited resources. Thus, from a competing stakeholders perspective, social responsibility may be perceived by managers as conflicting with the economic responsibility of the firm, leading Friedman (1970) to write that 'a corporation's social responsibility is to make a profit'. In this view, corporate economic and social responsibility are perceived as largely incompatible. Whether corporate economic and social responsibility are viewed by managers as compatible or incompatible is the focus of this paper, especially comparatively across nations.

Conflicting empirical results about the relationship between corporate social and economic performance (e.g. Griffin and Mahon, 1997; McWilliams and Siegel, 2001), even if the results of a meta-analysis show that the relationship is slightly positive (Orlitzky et al., 2003), have created some doubts in managers' minds about the compatibility between the different aspects of corporate responsibility. These doubts have also been fueled by the theoretical debate between the proponents of the compatibility hypothesis and those of the conflicting goals hypothesis. Because corporate responsibility is socially constructed in nature (Basu and Palazzo, 2008) and theories in social science may be self-fulfilling (Ferraro et al., 2007; Gergen, 1973; Ghoshal, 2005), it is important to understand how managers perceive this compatibility and which factors influence their perceptions and values. Their perceptions and values are of particular relevance as managers are the primary individuals responsible for the sustainability of the firm and must ensure that firms meet their corporate social responsibility (Friedman, 1970; Henderson, 2001). The values that managers use to guide their decision-making are thus critical for the implementation of socially responsible practices (Agle et al., 1999).

There are explanations for the perception of the degree of compatibility between corporate economic and social responsibility goals differing between countries. We consider that there are three main sources of cross-national differences: institutional, cultural, and educational. First, the institutional environment differs across countries, influencing the rules of the game, especially the nature of principal/agent relationships. Second, corporate social responsibility derives from accepted values (Schein, 1986) that influence managerial decision-making by indicating which choices and behaviors are acceptable or unacceptable. These values differ across countries (Hofstede, 2001). Finally, managerial education plays a key role in shaping the worldviews of future managers by diffusing a particular management ideology (Ghoshal, 2005) that emphasizes compatibility (or incompatibility) of corporate economic and social responsibility. It is important to determine how managerial education posits ethical/social responsibility norms: whether as true 'business goals' in the sense that they are to be pursued per se, as means, or as mere constraints. For instance, if the dominant view is that social responsibility should be considered only as an instrumental goal while economic responsibility is really the terminal goal, the perception of compatibility is encouraged.

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As a consequence, there may be significant cross-national differences in the degree to which corporate economic and social responsibility are emphasized as legitimate objectives by managers. Corporate economic and social responsibility may be considered in some countries as unrelated issues, while in others they may be viewed as negatively related, simultaneously pursuing both economic and social goals being perceived as difficult. Understanding which factors lead to the perception of a trade-off between corporate economic and social responsibility and which factors lead to the perception of compatibility between the two types of responsibility is critical to improving the image of multinational enterprises. Indeed, local views of what is a socially responsible business may differ across countries. In some countries, social responsibility may be considered as an impediment to business growth, a threat to shareholder wealth, while managers in other countries may consider that social goals are imposed by corporate communication – a necessary tribute to be paid for generating a positive corporate image towards a number of publics, especially consumers, shareholders, and the general public.

This research proposes a cross-national analysis of the perception of compatibility/incompatibility between corporate economic and social responsibility goals. We seek answers to four research questions: (1) Do future managers consider that there is some kind of trade-off between corporate economic and social responsibility or do they perceive them as compatible? (2) Are there country differences in the perceived importance and compatibility of economic and social goals for future managers? (3) If any, can these differences be explained by cultural, institutional, and educational variables? (4) Are these differences moderated by gender and work experience?

The first part presents different theories (agency theory, stewardship theory, instrumental rationality, and stakeholder theory) related to corporate governance that support alternative views of the compatibility of aspects of corporate responsibility. Based on Hofstede's (2001) cultural dimensions and institutional differences, we develop hypotheses on cross-national differences in corporate responsibility. We also discuss whether demographics (i.e. gender and work experience) could influence perceived compatibility as well as the emphasis put on either economic or social responsibility. The second part is empirical, dealing with sampling and instrument development. This study builds on the Business Goals Network data as presented in Hofstede et al. (2002). In order to measure corporate and social responsibility, a psychometric scale was first developed at an exploratory level. Then its cross-national invariance was assessed through multigroup confirmatory factor analysis. The third part deals with data analysis. After having established partial measurement invariance, we apply latent mean analysis to assess the magnitude and significance of differences across groups as concerns the degree of emphasis respectively put on economic and social responsibility. We also assess the correlation between economic and social responsibility for each group, as an indicator of the degree of compatibility and incompatibility between aspects of corporate responsibility. To check the robustness of the research findings, we test alternative explanations related to differences in level of economic development. The fourth part discusses the findings, outlines theoretical and managerial implications, and presents the limitations of this research.

## **Literature review and hypotheses development**

### *Corporate responsibility*

Corporate responsibility relates to societal expectations regarding the social (discretionary, ethical, legal) and economic conduct of business organizations (Carroll, 1979). Following McWilliams and

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Siegel (2001), we define corporate social responsibility as actions that appear to further some social good beyond the interest of the firm and that which is required by law.

Carroll (1979, 2001) identified four types of corporate social responsibility: economic, legal, ethical, and discretionary (or philanthropic). Economic responsibility is concerned with a firm's financial performance and the provision of goods and services. Legal responsibility is concerned with compliance with societal laws and regulations. Ethical responsibility relates to following societal moral codes of conduct, and discretionary responsibility relates to voluntary involvement and support of wider societal entities.

Different aspects of corporate responsibility are not perceived by managers as having the same importance. Carroll's (1979: 499) graphical representation of the four types of corporate responsibility suggests a weighting of 4:3:2:1, respectively for economic, legal, ethical, and philanthropic responsibility. Using a forced-choice scale, Aupperle and colleagues (1985) empirically measured the relative importance of the four types of corporate responsibility for a sample of US CEOs and confirmed Carroll's (1979) ranking of different types of corporate responsibility, with participants clearly placing more emphasis on economic responsibility. When the four types of responsibility were subsequently regrouped into two broad social (discretionary, ethical, and legal) and economic dimensions, the results showed that, when non-economic types of responsibility were taken together, they were of much greater weight than economic responsibility. Pinkston and Carroll (1994) later replicated Aupperle et al. (1985) with a sample of managers from multinational subsidiaries located in the US but with headquarters in France, Germany, Japan, Sweden, Switzerland, the UK, and the US, and found a similar ranking of the four types of corporate responsibility across countries. However, because these studies used a forced-choice scale, they measured the relative importance of the different forms of corporate responsibility, assuming the existence of a trade-off between them.

### *Corporate responsibility structure*

In the management literature, as well as in the economic and strategic literatures, several assumptions have been made about goals that managers pursue. On the one hand, neo-classical economists (e.g. Friedman, 1970) assume that managers are only motivated by self-interest and that the only corporate responsibility is to make a profit. On the other hand, Carroll (1979, 2001) argues for the existence of four types of corporate social responsibility: economic, legal, ethical, and discretionary. When multiple stakeholders' interests are considered as ends, managers can be obliged to seek a balance between multiple motives rather than maximize shareholder value (e.g. Freeman, 1984; Mitchell et al., 1997). Stakeholder theory proposes that managerial goals are developed in collaboration with a diversity of internal and external stakeholders, with potentially conflicting claims (Freeman, 1984). Choice may reflect a compromise between a variety of considerations of which shareholder value may be just one (McWilliams and Siegel, 2001). This compromise may lead managers to perceive the pressure of diverse stakeholders as a constraint on the financial performance of their firms, leading to the perception of a trade-off between economic and social responsibility.

Another stream of research, based on instrumental rationality logic, argues that there is not necessarily a trade-off between economic and social goals (e.g. Collins, 1994; Donaldson and Preston, 1995; Jones, 1995; Russo and Fouts, 1997). This conception stipulates, along with the neo-classical view, that the ultimate motivation of firms and managers is economic performance and shareholder value. However, the instrumental view includes corporate social responsibility as means

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and motives to achieve corporate economic responsibility goals (Kotler and Lee, 2005; McWilliams and Siegel, 2001; McWilliams et al., 2006). Based on a cost-benefit analysis, McWilliams and Siegel argue that there is an optimal corporate social responsibility spending level, which maximizes shareholder value. For example, firms may achieve a favorable image or relationship with stakeholder groups, such as customers, while pursuing corporate social responsibility. Similarly, Wright and Ferris (1997) argue that managers could make some decisions that may be perceived as socially responsible (e.g. divesting of South African assets), but that may in fact be self-serving decisions to increase their personal reputations. Therefore, according to instrumental rationality logic, corporate economic and social responsibility are compatible.

To sum up, some research streams propose or assume the existence of a trade-off between corporate economic and social responsibility, others argue that both sets of responsibility are compatible. From an institutional perspective (North, 1990; Scott, 1995; Williamson, 2000), we argue and hypothesize that whether managers perceive economic and social responsibility as compatible or incompatible is embedded in or partially determined by their national and institutional environment (Christie et al., 2003; Schlegelmilch and Robertson, 1995; Vogel, 1992). Indeed, managers' corporate responsibility perspectives represent espoused values (Schein, 1986) the structure of which is likely to be shaped by institutional, economic, and cultural factors (Hofstede et al., 2002).

### *Cross-national differences*

Cross-national differences in corporate responsibility structure may be attributed to the influence of societal institutions (e.g. Aguilera et al., 2007; Campbell, 2007; Pinkston and Carroll, 1994; Schlegelmilch and Robertson, 1995). North (1990: 3) argues that institutions serve as constraints to regulate economic activities by providing the *rules of the game*. Institutions interact with both individuals and organizations (North, 1990; Scott, 1995), and influence individual decision-making by signaling which norms, behaviors, and choices are acceptable and which are unacceptable (Peng and Heath, 1996). By providing limits to the set of behaviors and choices of individuals and organizations, institutions provide a stable structure for economic exchanges, thereby reducing uncertainty (North, 1990).

The institutional framework is comprised of both formal and informal constraints on individual and organizational behavior (North, 1990). Formal constraints include political, judicial, and economic rules and contracts, whereas informal constraints include the codes of conduct, norms of behavior, and conventions that are embedded in culture and ideology. Informal institutions are the crystallizations of culture, and culture is the substratum of institutional arrangements (Hofstede et al., 2002). Three elements are particularly influential in the structure of managers' corporate responsibility perspectives: national culture and values, the corporate governance system, and the educational system.

There is a growing consensus in the comparative institutional literature that nations embody a coherent institutional logic. However, Aguilera and Jackson (2003) note that this literature tends to hold the behavior of the actors within each nation constant. By doing so, one runs the risk of presenting an oversocialized view in the sense that it implies that all actors fully conform to the norms, values, and rules of their society. In line with Aguilera and Jackson (2003), we adopt a variant of institutional theory that stresses the interplay of institutions and individual actors (Scharpf, 1997; Williamson, 2000). The new institutional view is similar to Granovetter's (1985) embeddedness theory, in that it assumes an ongoing interaction between a nation's institutions and its actors, which influences the range of individual behaviors. Drawing insight from this literature,

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we reason that there is variance in individual perceptions, attitudes, and behaviors about the trade-off between corporate economic and social responsibility within countries, but that variance is less than that across countries (Lubatkin et al., 2007).

### *National culture*

Aspects of national culture may influence managers' corporate economic and social responsibility perspectives (see Williams and Aguilera, 2008, for a recent review). In his seminal work on cultural differences, Hofstede (2001; Hofstede and Hofstede, 2004) described two dimensions, individualism-collectivism and power distance, which are likely to influence managers' corporate responsibility structure.

A cultural dimension identified by Hofstede (2001; Hofstede and Hofstede, 2004) that is particularly relevant to better understand differences in managers' corporate responsibility structure is power distance. Power distance is defined as 'the extent to which less powerful members of organizations and institutions accept and expect that power is distributed unequally' (Hofstede, 2001: p. ix). In large power distance cultures, it is considered legitimate that less powerful members are dependent on more powerful members. As a consequence, privileges and status symbols for those in higher positions are both expected and popular. In these cultures, the most powerful members also expect their power to be recognized and respected. Conversely, in small power distance cultures, inequalities are minimized, independence of the less powerful is valued and encouraged, and status and class symbols are frowned upon (Hodgetts and Luthans, 1993). The concept of power distance has its roots in the family structure and is pervasive in the institutions that socialize members of the culture (school, church, and social organizations). In large power distance cultures, organizations are centralized, and they include large differences in authority, salary, and privileges between those at the top and those at the bottom. In small power distance cultures, organizations are decentralized, there is more consultation in decision-making, and differences in salary and perquisites are minimized. In small power distance cultures, powerful institutional shareholders and large individual shareholders may behave in a socially responsible manner toward other stakeholders, including dispersed individual/retail shareholders. In large power distance countries, dominant shareholders are likely to use their power to curb managerial discretion to their own advantage and push for the maximization of shareholder value at the expense of weaker stakeholders such as employees and customers. In such countries, less powerful stakeholders are likely to accept such a shareholder value maximization perspective. Therefore, we expect managers in large power distance countries to perceive incompatibility between economic and social responsibility. On the other hand, in small power distance countries, there is more power balance between shareholders and other stakeholders who are powerful enough to control the dictate of shareholder value maximization. Therefore, managers, based on instrumental rationality, are likely to perceive that social responsibility is a means to achieve their economic responsibility goals. In such countries, corporate economic and social responsibility are likely to be perceived as compatible. Consequently, we hypothesize:

Hypothesis 1: The larger power distance in a particular country, the more managers view corporate economic and social responsibility as incompatible goals.

Individualism is characterized as the emphasis of personal goals over group goals (Hofstede, 2001; Hofstede and Hofstede, 2004). Several specific differences between individualists and collectivists

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are relevant to the shaping of manager's corporate responsibility perceptions (Waldman et al., 2006). Individualists have independent selves, primarily organized and made meaningful by reference to their own internal repertoire of thoughts, feelings, and actions, rather than by reference to the thoughts, feelings, and actions of others (Aaker and Maheswaran, 1997; Markus and Kitayama, 1991). Individualists are more short-term oriented and use a cost-benefit analysis (economic model) to evaluate business deals (Hofstede, 2001). Such a cost-benefit analysis may demonstrate to individualistic managers that it is in their firm's best interest to be socially responsible as it will provide a positive image or relationship with stakeholders, such as customers, which in turn will lead to higher profits (McWilliams and Siegel, 2001). Individualistic cultures are conducive to the development of managers' perceptions of the compatibility between corporate economic and social responsibility, because in such cultures social goals are likely to be perceived as instrumental to economic goals. In collectivistic cultures, the self is defined as part of a group. Being a member of a group is an important indication of identity and achievement. Collectivists subordinate their personal goals to the goals of the collective (Triandis, 1995). Success is defined in terms of the success of the group (Hofstede, 2001). People with interdependent selves (i.e. with collectivistic values) are usually more attentive and sensitive to others (Markus and Kitayama, 1991) and more empathic (Furrer et al., 2000) than those who have independent selves and who possess more individualistic values. One may argue that the necessity to take into account and satisfy the conflicting claims of a large number of stakeholders may lead collectivistic managers to perceive a necessary trade-off between achieving corporate economic and social responsibility. However, collectivist identities being rooted in commitment to an in-group, one could also expect managers to feel less obligation to satisfy a broad range of stakeholders. Furthermore, one may argue that over time collectivistic cultures have developed robust routines and mechanisms to enable them to cope better with managing conflicting claims than individualistic cultures. As a consequence, there is no clear-cut rationale concerning goal compatibility for individualists versus collectivists.

In line with this, there is mixed empirical evidence as concerns the difference in perceived goal compatibility between individualists and collectivists. Christie et al. (2003) found that while most (individualistic) American managers (98 percent) expressed their disagreement with the statement that 'being ethical and being profitable do not go together', only 71 percent of the Indians and 38 percent of the Koreans, who are more collectivistic, did so. They found that American managers, in general, have a deep understanding of the role of ethics in business, and seem to believe strongly that 'being ethical' and 'being profitable' are not mutually exclusive, which is also consistent with the findings of Vogel (1992). On the other hand, Vogel (1992) also found that German managers, who are less individualistic than Americans, are relatively more skeptical about the compatibility between ethics and profitability. Given the contradicting arguments and empirical evidence already outlined, we expect managers with collectivistic values to be likely to balance or at least take into account the claims of multiple stakeholders. Therefore, we do not expect a clear difference between countries with collectivistic values and those with individualistic values as concerns goal compatibility.

### *Corporate governance system*

Corporate governance refers to 'those administrative monitoring and incentive mechanisms that are intended to reduce conflicts among organizational actors due to differences in incentives' (Lubatkin et al., 2007: 43). In other words, governance concerns the structure of rights and responsibility among the parties with a stake (i.e. stakeholders) in a firm (Aguilera and Jackson, 2003; Aoki,

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2000). The strictness of a corporate governance system can be defined by its targeting of multiple stakeholders and its consequent orientation to respecting and trying to reconcile the interests of all groups of stakeholders. Countries vary in the strictness of their corporate governance system and the extent to which the claims of a broad set of stakeholders are taken into account and protected. Countries with a strict corporate governance system possess strong accounting and auditing standards, effective lawmaking bodies, clear property rights, efficient legal frameworks, and independent judicial systems to ensure that the interests of all firm stakeholders are taken into account by managers. In countries with less strict corporate governance systems, a particular group of stakeholders (e.g. shareholders or unions) may become dominant in influencing managerial goals.

Because a strict corporate governance system seeks to take into account the rights of multiple stakeholders, with potentially conflicting claims, managers in countries with stricter corporate governance systems are more likely to perceive a trade-off between economic and social responsibility and therefore to see these goals as incompatible. On the other hand, in countries with less strict corporate governance systems, managers have more latitude to pursue the goals which are the most important for them without taking into account the interests of the other stakeholders. Therefore, because of this latitude or freedom, they might not perceive any incompatibility between corporate economic and social responsibility. Hence:

Hypothesis 2: In countries where institutional standards of corporate governance are stricter, managers view corporate economic and social responsibility as being more incompatible goals.

### *Type of managerial education*

Among the informal institutions identified by North (1990), education has an important effect on the taken-for-granted beliefs and values that are imposed on, or internalized by, social actors (Scott, 1995). The legitimacy of managers' perspectives on corporate responsibility depends on managers' different worldviews, which are influenced by their educational backgrounds and the diffusion of cognitive models of control among them (Aguilera and Jackson, 2003; DiMaggio and Powell, 1983). As such, business schools act as homogenizing institutions through the diffusion of these cognitive models of control. Ghoshal (2005) suggests that business schools propagate ideologically inspired theories, which, unlike theories in the physical sciences, tend to be self-fulfilling (Ferraro et al., 2007; Gergen, 1973). For example, teaching theories, such as Agency and Transaction Costs theories, which assume that people behave in self-interested ways or opportunistically and draw conclusions for goal setting based on that assumption, induces managerial attitudes and behaviors that are likely to enhance an economic perspective on corporate responsibility among future managers (Ferraro et al., 2007; Frank et al., 1993, 1996; Ghoshal and Moran, 1996). Ghoshal (2005: 77) further explains 'Whether right or wrong to begin with, the theory can become right as managers – who are both its subjects and the consumers – adapt their behaviors to conform with the doctrine.' On the other hand, teaching the importance of corporate social responsibility and ethical behavior is also related to the level of ethics of business students (Yoo and Donthu, 2002).

Over time, European and US-based business schools have developed a range of different and quite distinctive approaches to management education (Antunes and Thomas, 2007). For example, US managers typically receive education in 'general' management, with a strong emphasis on finance (Antunes and Thomas, 2007). The diffusion of shareholder value as management ideology in the last decade reinforced financial goals within the firm (O'Sullivan, 2000). In contrast, German

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managers typically hold PhD degrees in technical fields such as engineering or chemistry. German management ideology traditionally stresses *Technik* – achieving technical excellence as a manager’s central goal (Lawrence, 1980). German managers thus tend to adopt a corporatist or pluralistic view of the firm as serving multiple constituents. These factors lean away from pursuing merely financial interests and toward strengthening functional orientations (Aguilera and Jackson, 2003). In a functional view of management, teaching each functional management discipline separately favors the assumption that managerial functions are somewhat unrelated and can be treated independently, therefore increasing the perception of cross-functional goal compatibility. On the other hand, an integrated view of management provides business students with integrative, cross-functional courses, which present more critical incidents (e.g. marketing favors customized products and operations prefers a standardized product) where goal compatibility is actively questioned. This may activate a view that business goals are not fully compatible even in a well-managed company.

Overall, the domination of the business function view in US style MBAs (Mintzberg, 2004) leads managers to perceive corporate economic and social responsibility as two independent, yet compatible goals. Antunes and Thomas (2007) argue that American-style business schools do not encourage managers to incorporate an integrative philosophy directly into the daily functioning of their workplaces and do not provide sufficient ethical and professional guidance. European-style business schools have developed their own identities, styles, and approaches to management education, with a strong focus on reflective, integrative, and action-based learning (Antunes and Thomas, 2007), which have led managers to perceive corporate economic and social responsibility as two interdependent, yet incompatible goals. However, we do not consider functional versus integrated approaches to management education to be country-specific but rather related to particular educational institutions within countries. Hence:

Hypothesis 3: Future managers who are taught a functional view of management tend to view corporate economic and social responsibility as compatible, whereas future managers who are taught an integrated view of management tend to view corporate economic and social responsibility as incompatible.

## Methodology

To develop the instrument for assessing corporate responsibility, we followed the recommended procedures for building psychometric scales (Churchill, 1979; Churchill and Peter, 1984). We first used exploratory factor analysis on a subset of the total sample to derive items that feature the two sets of corporate economic and social responsibility. Multigroup confirmatory factor analysis was then used with the full sample to assess the instrument’s cross-national invariance. Latent mean analysis was used to measure the extent to which the importance of the dimensions of corporate responsibility differ in particular countries from the United States set as baseline country.<sup>1</sup> We also assessed the degree of perceived responsibility compatibility at a global level as well as for individual countries.

We first assessed the cross-national invariance of our measurement instrument at the individual level using multigroup confirmatory factor analysis. Then, to test if variance within countries is smaller than across countries, we ran a multivariate analysis of covariance (MANCOVA) with country and gender as independent variables, work experience (in years) as covariates, and economic and social responsibility as dependent variables. A significant country effect means that variance

**Table 1.** Descriptive Statistics for Country Samples

| Country        | Female | Sample Size Male | Total | Age <sup>a</sup> | Work Experience <sup>a</sup> |
|----------------|--------|------------------|-------|------------------|------------------------------|
| Australia      | 28     | 65               | 93    | 34.8 (5.7)       | 13.5 (6.1)                   |
| Bahamas        | 34     | 4                | 38    | 33.5 (6.1)       | 14.7 (6.9)                   |
| Brazil         | 26     | 70               | 96    | 35.8 (4.8)       | 14.9 (5.6)                   |
| China          | 9      | 14               | 23    | 29.1 (4.9)       | 6.7 (5.7)                    |
| Denmark        | 26     | 26               | 52    | 33.1 (7.5)       | NA                           |
| France         | 34     | 156              | 190   | 33.6 (6.3)       | 10.3 (6.9)                   |
| Germany        | 27     | 57               | 84    | 23.9 (1.5)       | .8 (1.1)                     |
| Hong Kong      | 23     | 78               | 101   | 30.8 (4.5)       | 8.6 (4.9)                    |
| Hungary        | 39     | 66               | 105   | 29.4 (5.3)       | 5.8 (5.0)                    |
| India          | 22     | 77               | 99    | 23.5 (1.7)       | .9 (1.3)                     |
| Jamaica        | 30     | 15               | 45    | 33.3 (7.4)       | 12.1 (7.8)                   |
| Netherlands    | 17     | 93               | 110   | 36.5 (6.1)       | 12.9 (7.4)                   |
| New Zealand    | 37     | 69               | 106   | 39.1 (6.8)       | 19.5 (7.8)                   |
| Panama         | 41     | 24               | 65    | 27.7 (4.7)       | 6.3 (4.7)                    |
| United Kingdom | 9      | 33               | 42    | 37.3 (6.7)       | 16.4 (7.6)                   |
| USA            | 209    | 347              | 556   | 27.6 (6.3)       | 7.7 (6.2)                    |
| Total          | 611    | 1194             | 1805  | 30.8 (7.2)       | 9.4 (7.6)                    |

<sup>a</sup>In years, average (standard deviation).

between countries is larger than within countries. Therefore, analysis at the country level becomes meaningful (Hofstede, 2001).

After having established the significance of a country effect, we ran a regression analysis to test the hypotheses about the relationships between country-level factors and future managers' perceptions of the compatibility or incompatibility of corporate economic and social responsibility goals.

### *Data and sample description*

Data were collected based on the Business Goals survey by Hofstede and colleagues (Hofstede et al., 2002).<sup>2</sup> A list of fifteen different goals, related to both economic and social responsibility drawn from the management literature, was put in questionnaire format. Respondents from evening MBA classes were asked to score how important they thought each of these goals was for 'the typical successful businessperson in Country X'. Importance was rated for each goal on a five-point scale. An academic network administered the same questionnaire to local evening MBA students. The survey was administrated in the language of the education program. Thus, most locations used the original English-language version. In three European countries (France, Germany, and the Netherlands) back-translated translations were checked following recommended procedures for ensuring translation equivalence (Van de Vijver and Leung, 1997). This resulted in a sample of 1805 respondents from 16 countries (Australia, Bahamas, Brazil, China, Denmark, France, Germany, Hong Kong, Hungary, India, Jamaica, the Netherlands, New Zealand, Panama, the United Kingdom, and the United States). Table 1 provides descriptive statistics for the country samples.

### *Instrument development and assessment of cross-national invariance*

*Initial development of the scales.* The fifteen corporate responsibility items were used as a starting base for exploratory factor analysis. A subset of the total sample (600 respondents) was used in the

**Table 2.** Confirmatory Factor Analysis Results

| Items                                    | Stand. Loading | p-Level | Jöreskog Rho | Rho of Convergent Validity |
|--|----------------|---------|--------------|----------------------------|
| <b>Social Responsibility</b>             |                |         |              |                            |
| Respecting ethical norms (TETHI)         | .79            | .000    |              |                            |
| Responsibility towards employees (TEMPY) | .81            | .000    | .86          | .60                        |
| Responsibility towards society (TSOCI)   | .81            | –       |              |                            |
| Staying within the law (TLAWS)           | .69            | .000    |              |                            |
| <b>Economic Responsibility</b>           |                |         |              |                            |
| Growth of the business (TGROW)           | .63            | .000    |              |                            |
| Personal wealth (TWELT)                  | .83            | –       | .84          | .57                        |
| Power (TPOWR)                            | .83            | .000    |              |                            |
| This year's profits (TPROF)              | .70            | .000    |              |                            |

first step to assess the factorial structure. We deleted items with smaller communalities and eliminated a third factor based on only two items ('family interests' and 'patriotism, national pride') which was not obviously consistent, especially in a cross-national perspective. Two factors representing economic and social responsibility clearly emerged, accounting for 62 percent of the variance. Factor 1 emphasized social responsibility with four items displaying high loadings: 'respecting ethical norms' (.79), 'responsibility towards employees' (.82), 'responsibility towards society' (.82), and 'staying within the law' (.71). Conversely, economic responsibility items loaded on factor 2, that is, 'growth of the business' (.73), 'personal wealth' (.79), 'power' (.80), and 'this year's profits' (.71). In the second step, exploratory factor analysis was replicated for each individual national group. Configural invariance was assessed at an exploratory level with the same pattern of salient loadings being observed for all groups. The next step was to assess cross-national invariance based on multigroup confirmatory factor analysis (Byrne, 2001).

The resulting scales describe corporate responsibility in terms of profit and wealth on the one hand (economic responsibility) and responsibility toward employees, society, ethics, and the law, on the other hand (social responsibility). Both dimensions reach a good level of internal reliability as well as convergent validity (see Table 2). All items are significantly related to their construct, supporting the assumed relationships between constructs and their indicators. Convergent validity of individual constructs in the model is confirmed since the mean of squared factor loadings is equal to or higher than .50 for all latent variables (rho of convergent validity, see Table 2). Discriminant validity was assessed on the basis that squared correlation between the two constructs (.02) is much lower than the variance shared by constructs with their measurement indicators (.60 and .57) (see Fornell and Larcker, 1981).

**Cross-national invariance assessment.** Before comparing latent means across countries, measurement invariance needs to be addressed at three levels: configural, metric, and scalar invariance (Steenkamp and Baumgartner, 1998). Confirmatory factor analysis was used, based on a structural equations modeling approach (see Byrne, 2001). Measurement equivalence was established by using nested models and assessing whether statistically insignificant differences in fit indices provide support for the invariance hypothesis. The results of the multigroup confirmatory factor analyses support full configural invariance and partial metric and scalar invariance (see methodological appendix).

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Full metric invariance is not necessary for making valid inferences about group differences (Byrne and Watkins, 2003). When configural invariance is met and metric invariance partially met (invariance constraints have to be relaxed for the loadings of a small number of items), then partial scalar invariance should be tested. Most intercepts will be cross-nationally invariant, but the constraint of equality may be relaxed for some intercepts across countries. To assess invariance, we remove equality constraints on some item loadings or intercepts, allowing for partial metric and scalar invariance (see Steenkamp and Baumgartner, 1998). Latent mean analysis could then be used to compare national groups, the mean of a particular group being set at zero (see Byrne, 2001). Differences in latent means were tested by placing equality constraints only on those parameters known to be invariant (Byrne et al., 1989). Factor loadings and intercepts for 'growth of the business' and 'responsibility towards society' were released, as well as the intercepts of 'respecting ethical norms' and 'staying within the law' (see methodological appendix). To assess corporate responsibility perceived compatibility, the cross-national CFA model with all respondents taken together was derived with satisfactory fit indices (Hu and Bentler, 1998, 1999; see methodological appendix).

### *Operationalization of variables*

To test hypotheses relating country-level institutional characteristics to the perceived compatibility of dimensions of corporate responsibility, we used secondary data from published sources. Perceived compatibility between economic and social responsibility for each national group is measured based on their correlation for each country sample. A non-significant correlation between social and economic criteria (that is, orthogonality in vectorial terms) means that respondents in a particular national group consider the two types of goals to be unrelated and consequently compatible but not necessarily aligned (which we call weak compatibility). A significant positive correlation between social and economic criteria means that respondents in a particular national group consider both types of goals to be aligned and easy to pursue simultaneously (which we call strong compatibility). A significant negative correlation between social and economic criteria means that respondents in a particular national group consider both types of goals to be opposed, therefore difficult to pursue simultaneously and requiring a trade-off (which we call incompatibility).

**Power distance and individualism.** Variables related to national culture, that is, power distance and individualism were operationalized using country scores in Hofstede (2001). Hofstede's country scores are the most widely used among international management scholars (Sivakumar and Nakata, 2001; Søndergaard, 1994), including the most recent research (Kirkman et al., 2006; Taras et al., 2009).

**Corporate governance system.** A measurement scale for corporate governance systems was developed based on data from the *Global Competitiveness Report* (World Economic Forum, 2002). Five items were selected because they highlight key components of corporate governance systems. When data from over 80 countries were submitted to exploratory factor analysis, a single factor emerged explaining 90 percent of the variance. These factor items displayed high loadings: 'Strength of Accounting and Auditing Standards' (.91), 'Effectiveness of Lawmaking Bodies' (.92), 'Property Rights' (.96), 'Efficiency of Legal Framework' (.99), and 'Judicial Independence' (.97). Confirmatory factor analysis resulted in high model fits (GFI = .94; AGFI = .83; CFI = .99). Cronbach alpha was .97 and Jöreskog rho was .97. Given its high internal reliability, the resulting scale was used as an indicator of strictness of corporate governance systems.

**Table 3.** Country-Level Indicators

| Country        | Individualism | Power Distance | Corporate Governance | Managerial Education <sup>a</sup> | GDP/Capita (2001) |
|----------------|---------------|----------------|----------------------|-----------------------------------|-------------------|
| Australia      | 90            | 36             | 1.56                 | 1                                 | 26,552            |
| Bahamas        | 91            | 40             | 1.48                 | 0                                 | 22,700            |
| Brazil         | 38            | 69             | .02                  | 0                                 | 7,759             |
| China          | 20            | 80             | -.05                 | 1                                 | 4,329             |
| Denmark        | 74            | 18             | 1.53                 | 1                                 | 33,500            |
| France         | 71            | 68             | .42                  | 0                                 | 25,074            |
| Germany        | 65            | 35             | 1.30                 | 0                                 | 25,715            |
| Hong Kong      | 25            | 68             | 1.16                 | 1                                 | 25,581            |
| Hungary        | 80            | 46             | .44                  | 0                                 | 12,941            |
| India          | 48            | 77             | .35                  | 0                                 | 2,464             |
| Jamaica        | 39            | 45             | .18                  | 0                                 | 3,890             |
| Netherlands    | 80            | 38             | 1.30                 | 0                                 | 26,242            |
| New Zealand    | 79            | 22             | 1.34                 | 1                                 | 20,725            |
| Panama         | 11            | 95             | -.69                 | 0                                 | 5,986             |
| United Kingdom | 89            | 35             | 1.63                 | 1                                 | 24,421            |
| U.S.A.         | 91            | 40             | 1.33                 | 1                                 | 34,888            |

<sup>a</sup>1 = functional; 0 = integrative

**Managerial education.** Type of managerial education contrasts functional and integrative education styles and was operationalized at the business school level<sup>3</sup> by a dummy variable (1 for functional-based and 0 for integrative-based education style). As previously discussed, US-like business schools favor functional education, whereas non-US business schools have more integrative programs. Based on a qualitative content analysis of MBA program websites, we classified respondents from Australia, Hong Kong, New Zealand, the United Kingdom, and the United States as receiving a functional-based managerial education and respondents from Brazil, France, Germany, Hungary, India, and the Netherlands as receiving an integrative-based managerial education.

**Economic development.** As country wealth may influence the perception of the compatibility between economic and social responsibility, we decided to use a country economic development level as a control variable. To measure economic development, we used the gross domestic product (GDP) per capita, which is the most direct and often used measure of the economic development of a country (Getz and Volkema, 2001). In this study, the statistics published for 2001 by the United Nations Statistical Division (<http://unstats.un.org/unsd/default.htm>) were used. Scores for country-level indicators are presented in Table 3.

## Data analysis and empirical findings

### *Global assessment of perceived compatibility between social and economic responsibility*

Table 4 provides a summary of latent mean differences for national groups for the two subscales (economic and social responsibility). Latent mean comparisons for both subscales are based on the US group mean being constrained to zero. Differences should be interpreted as referring to the

**Table 4.** Cross-National Comparison of Corporate Responsibility Compatibility and Importance

| Country                | Correlation Economic/<br>Social Responsibility | Latent Mean Difference/US<br>Social Responsibility | Latent Mean Difference/US<br>Economic Responsibility |
|------------------------|--|--|--|
| Australia (AUL)        | -.16   | .34***   | .19†   |
| Bahamas (BAH)          | .01  | -.13   | -.17   |
| Brazil (BRA)           | -.30*  | .47***   | .10  |
| China (CHI)            | .63*   | .31  | .80**  |
| Denmark (DEN)          | .50**  | .08  | .61***   |
| France (FRA)           | -.41***  | .10  | .08  |
| Germany (GER)          | -.40**   | -.32**   | .45***   |
| Hong Kong (HCH)        | -.30*  | .16†   | .26*   |
| Hungary (HUN)          | -.32**   | .37***   | .59***   |
| India (IND)            | -.43***  | -.08   | .02  |
| Jamaica (JAM)          | .23  | -.05   | -.37*  |
| Netherlands (NET)      | -.33**   | -.13   | .22**  |
| New Zealand (NZL)      | .07  | .03  | .20*   |
| Panama (PAN)           | .04  | -.05   | -.26*  |
| United Kingdom (UK)    | -.00   | .16  | .30†   |
| USA (baseline country) | .06  | —  | —  |

† $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

United States as the baseline country. Respondents in most countries place social responsibility at a higher level of importance than US respondents (Australia, Brazil, Hong Kong, and Hungary). German respondents appear to be an exception by considering social responsibility as less important than US respondents. Respondents in the majority of countries consider economic responsibility more important than US respondents with the exception of Jamaica and Panama, who consider corporate economic responsibility less important.

On average, future managers see corporate economic and social responsibility as relatively incompatible ( $-0.077$ ;  $p < .001$ ). However, this global perceived corporate responsibility incompatibility should not be overestimated since the negative correlation between both latent constructs, even though significant, is relatively small. Table 4 provides correlation patterns between the two dimensions of corporate responsibility for all countries.

### *Country, gender, and work experience effects*

We performed multivariate analysis of covariance (MANCOVA) where the dependent variables were summative scales for economic and social responsibility and the independent variables were nationality and gender. Work experience was used as a covariate. The Interaction effect between nationality and gender was not significant and consequently removed for parsimony.

MANCOVA showed a significant effect for nationality (Wilks' lambda = .893,  $F = 6.963$ ,  $p < .001$ ) only, as reported in Table 5. Main effects of gender and work experience were not significant. For gender, empirical findings are consistent with CFA results. When the CFA model is estimated based on male respondent data ( $-0.089$ ;  $p < .001$ ), there appears to be no significant difference in terms of perception of goal compatibility as compared with female respondents ( $-0.061$ ;  $p < .032$ ).

**Table 5.** MANCOVA Results

| Effect          |                   | Economic Responsibility | Social Responsibility | Wilks (F-value)              |
|-----------------|-------------------|-------------------------|-----------------------|------------------------------|
| Nationality     | F-value (p-value) | 7.668 (.000)            | 6.197 (.000)          | .893 (6.963 <sup>***</sup> ) |
| Gender          | F-value (p-value) | .760 (.383)             | 3.560 (.059)          | .998 (2.199)                 |
| Work Experience | F-value (p-value) | 1.718 (.190)            | .306 (.580)           | .999 (.995)                  |

N = 1805; Countries: AUL, BAH, BRA, CHI, DEN, FRA, GER, HCH, HUN, IND, JAM, NET, NZL, PAN, UK, and USA.

Note: None of the interactions was significant and therefore they were removed for parsimony. Data for work experience in Denmark were missing and were replaced by the mean.

\*p < .05; \*\*p < .01; \*\*\*p < .001.

### Hypothesis testing

To test Hypotheses 1 to 3, we conducted a hierarchical regression analysis. The compatibility (i.e. correlation) between economic and social responsibility was used as the dependent variable and country-level indicators for power distance, individualism, corporate governance, managerial education, and GDP per capita were used as independent variables. In the first step, we entered GDP per capita only to control for the effect of country wealth. The other independent variables were entered in the second step. To account for sample size difference between countries, cases were weighted based on sample size. In addition, to take into account the significant correlation between power distance and individualism ( $r = -.759^{***}$ ) and the resulting potential multicollinearity, we regressed power distance on individualism and used the unstandardized residuals of this regression as a measure of individualism controlled for power distance. We also assessed multicollinearity by examining the variance inflation factor (VIF) and the conditioning index. The respective values were significantly below the commonly accepted thresholds of 10 and 30 (Hair et al., 1998). The results are presented in Table 6.

To rule out the alternative explanation by economic development and to control for country wealth, we computed a first regression model in which only GDP per capita was entered as independent variable. The model is significant with a  $R^2$  of .076. The effect of GDP per capita is positive ( $\beta = .276$ ,  $p$ -value < .001). This means that the richer a country, the more compatible perceived corporate economic and social responsibility are. In the second step of the hierarchical regression analysis, we entered the other independent variables.  $R^2$  increased significantly ( $\Delta R^2 = .637$ ,  $p$ -value < .001) to reach .712 ( $p$ -value < .001), indicating that national culture and institutions have a significant effect on the perceived compatibility of corporate economic and social responsibility, independently of country wealth. To test our hypotheses, we examined regression coefficients in the second model.

Hypothesis 1, which stated that the larger (smaller) power distance in a particular country, the more future managers view corporate economic and social responsibility as incompatible (compatible), is supported with a negative and significant coefficient ( $\beta = -.716$ ,  $p$ -value < .001) between power distance and the compatibility between economic and social responsibility. Concerning the influence of individualism/collectivism, there is a significant residual effect of individualism controlled for power distance on future managers viewing economic and social responsibility as relatively incompatible ( $\beta = -.085$ ,  $p$ -value < .001).

Hypothesis 2 stated that, where institutional standards of corporate governance are stricter, future managers view economic and social responsibility as more incompatible goals. The hypothesis is supported with a negative and significant coefficient of -1.124 ( $p$  < .001). Concerning the effect of

**Table 6.** Regression Analysis of the Compatibility between Economic and Social Dimensions of Corporate Responsibility

|  | Baseline Model $\beta$ | Complete Model $\beta$ |
|--|------------------------|------------------------|
| GDP/Capita                                   | .276***                | .136***                |
| Power Distance                               |                        | -.716***               |
| Individualism (residual effect) <sup>a</sup> |                        | -.085***               |
| Corporate Governance                         |                        | -1.124***              |
| Managerial Education <sup>b</sup>            |                        | .888***                |
| R <sup>2</sup>                               | .076***                | .712***                |
| $\Delta R^2$                                 | –                      | .637***                |

Notes: N = 16, Countries: AUL, BAH, BRA, CHI, DEN, FRA, GER, HCH, HUN, IND, JAM, NET, NZL, PAN, UK, and USA. Cases are weighted by sample size to take into account sample size differences across countries.

<sup>a</sup> To reduce multicollinearity between power distance and individualism, we regressed power distance on individualism and used the unstandardized residuals as indicators for individualism controlled for power distance.

<sup>b</sup> ME, 1 = functional; 0 = integrative.

\*\*\* p < .001.

managerial education, Hypothesis 3 proposed that in business schools where MBA programs propagate a functional (integrated) view of management, students tend to view economic and social responsibility as independent (incompatible) goals. The hypothesis is also supported with a positive and significant coefficient of .888 ( $p < .001$ ).

## Discussion and conclusion

The parsimonious scale of corporate economic and social responsibility that has been developed in the present research displays high internal reliability and its cross-national invariance, although partial, is demonstrated. It has the potential to be extended to a larger set of countries. Future managers from a diversified sample of countries consider that there is a necessary trade-off between corporate economic and social responsibility goals, rather than perceiving them as compatible. There are country differences in the perceived importance and compatibility of economic and social responsibility for future managers. Compared to our baseline country, the United States, other countries tend to perceive lower corporate responsibility compatibility, to put slightly more emphasis on both economic and social responsibility on average. Differences in perceived compatibility of aspects of corporate responsibility of future managers can be explained by variables at three different institutional levels: culture, corporate governance, and managerial education. At the cultural level, difference in perceived compatibility is mostly related to power distance and not so much to individualism, a result that confirms Vogel's (1992) findings and the three-country comparison of Christie et al. (2003). In contexts where institutional settings related to corporate governance are stricter and more sophisticated, providing for a real balance between stakeholders' interests, respondents perceive aspects of corporate responsibility as more compatible than in countries where corporate governance standards may not yet be on the agenda (or may be legally decided but not actually implemented), where future managers perceive these dimensions of corporate responsibility as conflicting. As hypothesized, managerial education is shown to matter. It is the single most significant covariate, giving credence to the argument of Ghoshal (2005) that future managers tend to align their behavior with the doctrines they have been taught.

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## *Theoretical implications*

Our results provide support to institutional theory, which highlights the importance of formal and informal institutions on future managers' perceptions (Lubatkin et al., 2007; Scott, 1995). Cultural, regulatory, and educational institutions shape future managers' perceptions about the compatibility or the incompatibility between corporate economic and social responsibility. This combined influence further indicates that these factors are not isolated but that they act as a whole in an integrated institutional system (Peng and Heath, 1996; Vogel, 1992). As argued by Hofstede et al. (2002), institutions can be seen as the crystallizations of culture, culture being the substratum of institutional arrangements.

Concerning future managers' corporate responsibility structure, contrary to the instrumental rationality logic (e.g. Collins, 1994; Wright and Ferris, 1997), we did not find support for a positive relationship between economic and social responsibility (i.e. strong compatibility). In the country sample (except for Chinese and Danish respondents), we found that future managers either perceive a trade-off between economic and social responsibility or see them as independent (i.e. weak compatibility). In countries with large power distance, collectivistic values, or weak corporate governance standards, and/or integrative managerial education, future managers see corporate economic and social responsibility as more incompatible. In these countries (Brazil being the exception), future managers tend to prioritize the economic responsibility over the social responsibility, which is consistent with the neo-classical assumption about the self-interested human nature (Friedman, 1970).

We found that in several countries with smaller power distance, more individualistic cultures, or stricter corporate governance systems, and/or functional managerial education, future managers tend to view corporate economic and social responsibility as compatible goals. This provides support to the idea that multiple goals and consideration for others' interests as means to economic ends make managers seek to use corporate social responsibility to achieve corporate economic performance. Therefore, managers' social responsibility goals may reflect instrumental goals to increase shareholder value (McWilliams and Siegel, 2001).

## *Managerial implications*

Our research findings suggest that in several countries there is no perception of strong goal compatibility. When interviewed about self-interested and other-oriented business goals, future managers consider, at best, that such goals are independent (i.e. weak compatibility), and most respondents consider that they are difficult to compromise. Managerial education, especially its functional form, often takes for granted that 'everything is possible', that is, companies and their managers could be simultaneously highly profit-oriented, generous, responsible, and honest. However, even if they are indoctrinated in such a way, future managers do not fully believe in such a message. This is proven by the lack of support for a positive correlation between dimensions of corporate responsibility. Managerial education should more clearly emphasize the conditions under which business goals can be made compatible and allow for some critical discussion of the taken-for-granted compatibility assumption. Doing this probably implies a departure from both functional and integrated views of management, since they cannot properly account for the practical, down-to-earth situations where goal conflicts become evident. In this respect, we argue in favor of going back to a case study approach that de-emphasizes managerial doctrine in favor of problem resolution through group discussion, confrontation of ideas, and consensus building.

The importance of corporate governance systems is highlighted by this research. Our argument is that congruence with deep-seated attitudes toward the compatibility of dimensions of corporate

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responsibility is a condition for making such systems work in practice. Causation goes both ways: rather than being merely an antecedent of corporate governance systems, such deep-seated attitudes may also be changed over time by successful governance that increases perceptions of compatibility between dimensions of corporate responsibility. A large discrepancy between formal and real governance is likely to occur where only legal dispositions are taken without the necessary enforcement arsenal. As a consequence, a gradual rather than radical introduction of corporate governance standards in settings where they are virtually unknown is recommended.

### *Limitations and future research*

The direction of causality is assumed, but not demonstrated by this research. It may be simply that corporate responsibility incompatibility is a covariate of power distance (not a consequence). The regression analysis performed does not allow us to prove causation. Similarly, it is difficult to disentangle the view of management propagated by business education programs from beliefs about the degree to which corporate responsibility are compatible since causality may run both ways.

Country samples varied in size, gender composition, and age distribution. The US accounts for 30 percent of the total sample. We recognize that the more than proportionate influence of the US data does not allow us to reach a culture-general solution. In cross-national research, it is a priori relevant to have similar sample composition in every country surveyed, to achieve comparability of data. However, the search for perfectly matched samples across survey countries, as a way to rule out individual characteristics (i.e. gender, age) as alternative explanations for differences, may be an illusion. Mere similarity across countries may clash not only with representativeness of local populations in country samples but also with real comparability across countries. Future research should target an extension of data collection to a larger set of countries with increased representativeness both in geographic and cultural terms.

### *Conclusion*

While in seven countries corporate economic and social responsibility are perceived as conflicting, in only two countries are these responsibilities perceived as strongly compatible, and in another seven countries they are considered to be independent or weakly compatible. We also show that differences in perceptions of responsibility importance and compatibility can be explained by institutional and cultural differences rather than by the level of economic development or individual-level variables such as gender and work experience. Further research should take into account such cross-national differences when studying managerial attitudes and behaviors, especially when they relate to corporate social responsibility.

## **Methodological appendix: Assessment of cross-national invariance**

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Multi-group confirmatory factor analyses for the national groups should be performed to assess whether there is measurement equivalence between the groups. Configural invariance is met when the items exhibit the same basic pattern of salient and nonsalient loadings across countries, cultures, or groups studied. Metric invariance is met when, in addition to configural invariance, loadings are nonsignificantly different across countries. If conditions of configural invariance and metric invariance are satisfied, the researcher should proceed to test for scalar invariance, which deals with item intercepts (mostly related to consistency in response styles). Scalar invariance can be tested by

**Table A1.** Measurement Invariance

| Factors                 | Items | Metric Invariance               | Scalar Invariance                 |
|-------------------------|-------|---------------------------------|-----------------------------------|
| Social Responsibility   | TLAWS | Invariant                       | non invariant, intercept released |
|                         | TSOCI | non invariant, loading released | non invariant, intercept released |
|                         | TEMPY | Invariant                       | invariant                         |
|                         | TETHI | Invariant                       | non invariant, intercept released |
| Economic Responsibility | TGROW | non invariant, loading released | non invariant, intercept released |
|                         | TPROF | Invariant                       | invariant                         |
|                         | TPOWR | Invariant                       | invariant                         |
|                         | TWELT | Invariant                       | invariant                         |

imposing an equality constraint on the latent means. For further technical advice on how to proceed for testing measurement invariance see: Steenkamp and Baumgartner (1998), Vandenberg and Lance (2000), Byrne (2001), and Schaffer and Riordan (2003).

The first step is to test configural invariance, that is, whether all items load on the same factor in each national group. Therefore, the same model was estimated simultaneously for the sixteen countries (baseline model). Factor loadings were expected to be statistically significant for each group and the overall model had to exhibit satisfactory fit indices. Given the relatively high number of observations in the dataset (1805), relying on the chi-squared test was impossible due to its sensitivity to sample size. Instead, a combination of fit indices such as CFI, TLI, and RMSEA<sup>4</sup> was used as is usual in confirmatory factor analysis (Byrne, 2001). The overall model was acceptable (CFI = .89, TLI = .84, and RMSEA = .036). The only problematic loading is that of the item TGROW (for item abbreviations, see Table 2) for Germany ( $p = .107$ ). Configural invariance was shown to be met.

The next concerns were metric and scalar invariance. Here again, the chi-squared test was not used to investigate a possible worsening in fit between constrained and baseline models. Since the difference in chi-squared is not reliable due to large sample size, we opted for a measure based on the change in CFI between constrained and baseline models.<sup>5</sup> The threshold values for  $\Delta CFI$  as concerns measurement invariance are as follows (Vandenberg and Lance, 2000):  $\Delta CFI \geq -.01$ : the invariance hypothesis should not be rejected;  $-.01 \geq \Delta CFI \geq -.02$ : non invariance is suspected;  $-.02 \geq \Delta CFI$ : the invariance hypothesis should definitely be rejected and tests for partial invariance should be implemented.

In addition to the  $\Delta CFI$  criteria, we imposed additional constraints for strengthening the invariance test: TLI and RMSEA should not deteriorate, i.e. no decrease in TLI and no increase in RMSEA should be observed between constrained and baseline models.

To assess metric invariance, factor loadings were constrained to be equal across all national groups. CFI change between constrained and baseline models was  $-.02$ , suggesting that the overall model was not fully metric invariant. Each factor had to be tested separately for partial metric invariance by releasing constraints on particular loadings one at a time and checking for  $\Delta CFI$ .<sup>6</sup> If  $\Delta CFI$  was larger than or equal to  $-.01$  and there was no deterioration in TLI and RMSEA, the released item was causing invariance across groups. It should not be set to equality across the seventeen countries. Once the nonmetric invariant item(s) was/were identified, scalar invariance was explored.

Scalar invariance was tested by imposing an additional constraint to the metric invariant model, that is, item intercepts were set equal across all national groups. A nonmetric invariant item cannot

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be scalar invariant (Steenkamp and Baumgartner, 1998). Therefore, only loadings and intercepts of items which were metric invariant were constrained to equality in the scalar invariance model. At this stage, relying on CFI for comparing models was impossible since the CFI value computed by AMOS is inflated when means and intercepts are estimated. Thus, differences in TLI and RMSEA were used to investigate the items which were scalar invariant. If either TLI or RMSEA did not change in the proper direction, one more parameter was released. This process was repeated until a satisfactory solution in terms of partial invariance was found.

Some economic responsibility items were non metric invariant ( $\Delta\text{CFI} = -.025$ ), due to the item TGROW.  $\Delta\text{CFI}$  was reduced to an acceptable level ( $\Delta\text{CFI} = -.01$ ) when TGROW was released while TLI and RMSEA did not deteriorate ( $\Delta\text{TLI} = .064$ ;  $\Delta\text{RMSEA} = -.011$ ). In the subsequent tests for partial scalar invariance, all loadings and intercepts, except TGROW, were constrained to be equal across countries. The CFI criteria as well as changes in alternative fit indices ( $\Delta\text{TLI} = .128$ ;  $\Delta\text{RMSEA} = -.009$ ) indicated that TGROW was the only nonmetric and nonscalar invariant item for economic responsibility.

The social responsibility factor was also shown to be not fully metric invariant due to  $\Delta\text{CFI}$  being  $-.017$ . When the factor loadings of the item TSOI were set free rather than constrained to be equal across groups,  $\Delta\text{CFI}$  decrease was only  $.008$ . Partial scalar invariance was examined on the basis of possible deterioration of TLI and RMSEA for each intercept release. The first model, in which factor loadings and intercepts were set free for TSOI, did not reach partial scalar invariance (i.e. TLI improved whereas RMSEA worsened:  $\Delta\text{TLI} = .031$ ;  $\Delta\text{RMSEA} = .007$ ). Trying different combinations of intercept constraints, the sole scalar invariant item was TEMPY. By freeing intercepts and factor loadings for TSOI as well as intercepts for TETHI and TLAW, partial scalar invariance was met with TLI increasing over the baseline model ( $\Delta\text{TLI} = .04$ ) while RMSEA remained unchanged.<sup>7</sup> To sum up, TGROW and TSOI were nonmetric invariant and TETHI as well as TLAW were nonscalar invariant (see Table A1).

## Notes

1. Cross-national invariance measurement based on confirmatory factor analysis frees loadings (for nonmetric invariant items) and intercepts (for nonscalar invariant items) for particular national groups. This process takes into account response set biases both for extreme/median response style and for the yea/nay-saying. Non-standardized data should be used when performing multigroup confirmatory factor analysis. Recent research indicates that relying on standardized data in cross-national/cultural research may result in ambiguous results (Fischer, 2004). Response styles, rather than being bias obscuring true measurement, are reflective of communication styles that are an integral part of culture (Smith, 2004; Van Hemert et al., 2002). Correcting response set biases would then potentially remove substantive variation related to country/culture.
2. The Business Goals Network database (Hofstede et al., 2002) was used, with the addition of Denmark and extra data from New Zealand (hence 1805). We do not consider US groups from (four) different regions as separate national groups as in Hofstede et al. (2002). We removed respondents located in Hawaii, due to the unavailability of country-level data for this context.
3. In countries where data were collected from multiple schools, it appears that they used the same type of education.
4. CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation.
5. This criterion is used with large samples. As our dataset is large (1805), the  $\Delta\text{CFI}$  criteria hold.
6. At this stage, the baseline model was one in which the factor loadings, the intercepts, and the latent means were unconstrained.

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7. The range between lower and upper bounds diminished (RMSEA<sub>lower</sub>: from .024 to .026; RMSEA<sub>upper</sub>: from .039 to .036).

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