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Publication date:
2013

Link to publication in Tilburg University Research Portal

Citation for published version (APA):
Graafland, J. J., & Smid, H. (2013). *Competition, Time Horizon and Corporate Social Performance.* (CentER Discussion Paper; Vol. 2013-060). Economics.

COMPETITION, TIME HORIZON AND CORPORATE SOCIAL PERFORMANCE

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6 November 2013

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Competition, time horizon and corporate social performance

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Abstract

This paper develops and tests a conceptual framework on the relationships between competition, time horizon and corporate social performance (CSP). We hypothesize that more intense competition discourages CSP by lowering the time horizon of companies. We test the hypothesis on a sample of 4696 of mainly small and medium-sized companies from twelve European countries. We distinguish between price competition, market position and technological competition. We find that companies with a longer time horizon have a higher CSP and that price competition and a 'level playing field' market position shorten the time horizon. The intensity of technological competition has a positive effect on time horizon, but also exerts a direct positive influence on CSP. Test results show that time horizon significantly mediates the influence of price competition, the market position and technological competition on CSP. The analysis implies that, from the perspective of CSP, the economic policy of the government should not focus on fostering price competition, but rather on strengthening competition in innovation.

1   Introduction

Recently, research into corporate social performance (CSP) has become more focused on the institutional roots of CSP (Aguilera and Jackson, 2003; Campbell, 2007; Matten and Moon, 2008; Brammer et al., 2012). For example, Campbell (2007) provides a theoretical analysis of the economic and institutional conditions that make it more likely that companies act in socially responsible ways. One of the hypotheses that he develops is that the odds that companies will act in socially responsible ways depends on the level of competition they face. If competition is very intense, profit margins will be low and companies will have a strong incentive to save costs and this may cause them to act in socially irresponsible ways. Also van de Ven and Jeurissen (2005) argue that intensive competition gives less room for companies to pursue a pro-active CSP.

Other theoretical studies have conceptualized CSP as resulting from a combination of external factors and internal factors, aiming to integrate the role of institutional conditions with internal factors that give rise to CSP (Brown, Vetterlein and Roemer-Mahler,2010; Young and Mackhija, 2013). One of the internal factors through which competition may affect CSP which is still underexposed in literature, is that competition may put pressure on the time horizon that the company employs in its strategic decision making. Because if companies are less profitable, they will have fewer resources and that makes it harder to make investments that pay off in the long term. The resulting 'short-time thinking' may discourage CSP. As Yong Oh et al. (2011) argue, CSP investments are most likely to pay off in the long run. Long-term oriented companies will therefore use CSP as an instrument to achieve long-term success (Davis, 1973). In the short run, CSP might actually be a burden for the company. Companies with a short time horizon will therefore more likely view social investments as risky and uncertain and refrain from CSP investments. The benefits from investments in CSP, such as reduction of the risk of social or environmental incidents, reduction in production costs, increase in market share, improvement of reputation or increased access to capital market often become only visible after a considerable period of time. The longer the time horizon of the investor, the greater that investor is concerned about corporate reputation and the quality of stakeholder management (Rehbein et al., 2013). CSP will therefore be more valuable to companies with a long time horizon.

One would expect that the links between competition, time horizon and CSP described above are particular relevant for small and medium-sized companies (SMEs). As SMEs are often operating on a level playing field, they face severe competition which puts profitability under pressure. Time, finances and a lack of skills and knowledge are commonly identified as constraints to CSP by SMEs (Studer et al. 2006). The long-term strategic benefits from CSP in terms of reputation, cost reduction, increased consumer demand and reduction in risks therefore often remain beyond the strategic horizon of SMEs. This implies that, like Lynch-Wood and Williamson (2007) argue, the social license motive will not be sufficient to induce SMEs to go beyond compliance to the law. Also Spence et al. (2000) find that the possibilities

of a market-conform environmental policy are limited for the small entrepreneur, because the company will find it difficult to get its environmental efforts rewarded by the market. Therefore, one would expect that competition particularly puts limits on CSP of small companies by lowering the time horizon of strategic decision making.

The preceding discussion ignores, however, the role of technological competition. In the current (scarce) literature on the relationship between the intensity of competition and CSP often no distinction is made between different types of competition. Market competition is about rivalry between companies and the instruments of rivalry may differ. Besides rivalry in prices, companies can also compete by innovation (Vickers, 1995). And just like price competition, also the intensity of technological competition may affect the time horizon of companies. In the current globalized economy, the world is constantly changing. Innovation leads to creative destruction which reduces the expected life time of companies and market relationships or at least make them more uncertain. Through this channel, the time horizon of companies may also decline. As a direct consequence, companies will employ a higher discount rate on future benefits (Bovenberg, 2002). This is a mechanism that may particularly affect large companies that are relatively more exposed to technological competition.

Although it is plausible that market competition affects CSP through the time horizon of a company, there is no empirical research that provides evidence on this mediation path. There are some researches that show that time horizon and CSP are related (Slawinski and Bansal, 2009). For example, Berger et al. (2007) find that companies with the highest future orientation most likely follow a CSP approach that is sustained over time. Other research shows that the time horizon of the owners of the company affects CSP (Neuman and Zahra, 2006; Mallin et al., 2013). For example, Yong Oh et al. (2011) find that investors with long-term orientation support the company's CSP initiatives. But the links between time horizon and the intensity of competition and how different types of competition affect CSP through time horizon is not researched yet.

In this paper, we aim to fill this gap by (a) developing a conceptual framework that analyses how the price and technological competition affect long-term orientation of companies and how both affect CSP (b) estimating the framework on a sample of European companies that consists largely of SMEs. Given the present state of research, our paper makes three important contributions. First, we develop a conceptual framework that links price and technological competition to CSP by postulating a mediating role of time horizon. Second, we empirically test the model, thus providing insight into the quantitative effects of price and technological competition on time horizon and CSP and the role of time horizon as a mediation path between price and technological competition and CSP. The third contribution is that we test the model for both large, medium sized and small companies. For this purpose, we set out a large-scale survey among SMEs in Europe. The survey includes 4696 companies from twelve European countries, of which the majority of companies are small or medium-sized. This provides us with an excellent sample to test the hypotheses of our conceptual framework for large, medium sized and small companies.

The content of the article is as follows. First, we present the conceptual framework and the hypotheses. Section 3 explains the data and describes some outcomes of the survey for

large, medium-sized and small companies. Section 4 presents the statistical analysis. Section 5 discusses the main findings and section 6 derives some policy implications.

2   Conceptual framework

CSP is a concept that has existed in the literature for several decades (Carroll, 2008).[1] It refers to "the company's consideration of, and responses to, issues beyond the narrow economic, technical and legal requirements of the company" (Davis, 1973). Theoretical and empirical studies of the drivers of CSP have shown that CSP is influenced by a multitude of variables. Institutional theory has focused on the institutional roots of CSP that shape corporate decisions by giving rise to different competitive environments that affect the behavior of important external stakeholders of the company (Aguilera and Jackson, 2003; Campbell, 2007; Matten and Moon, 2008; Brammer et al., 2012; Lee, 2011). Other theoretical studies have conceptualized CSP as resulting from a combination of external factors and internal factors, aiming to integrate the role of institutional conditions with internal factors that give rise to CSP. For example, Brown, Vetterlein and Roemer-Mahler (2010) distinguishes four sets of explanations of CSP that partly overlap with institutional analyses, but adds internal factors as well.

Our analysis builds on the latter strand of literature that links external and internal conditions of CSP to CSP. In this section we introduce a conceptual framework for the relationship between competition as an external economic condition of CSP, long time horizon as an internal condition and CSP. We first explain why CSP depends on the time horizon of the company. Then we consider the effects of different types of competition on time horizon and how this may affect CSP of large and small companies differently.

2.1   *CSP and time horizon*

The time horizon of a company may affect CSP of companies because various types of benefits from engaging in CSP mainly pay off in the long term.

One of the most important benefits is that CSP may foster the company's reputation (Kurucz et al., 2008; Brønn and Vidaver-Cohen, 2008; Orlitzky, 2008; Laudall, 2011). Scandals and accidents can destroy reputations that often require a long time to build up. A strong CSP program can help reduce the probability of accidents that cause reputational damage or limit the reputational damage if they occur (Lougee et al., 2008). Since CSP may foster loyalty of customers and other stakeholders, it might also mitigate negative sanctions for the company's accidental events such as product recalls (Fombrun et al. 2000). These reputational advantages typically pay off in the long run, because it takes time to build up a good reputation. Moreover, as CSP investments often carry with them a kind of insurance-type protection in the sense of reducing business and corporate risks (Godfrey et al. 2009) and such unexpected events generally occur only now and then, the benefits of these investments appear only in the long term. Similarly, if a company sets up a stakeholder dialogue or a corporate philanthropy program from a risk management perspective (Godfrey, 2005), it will

take time before the company convinces its stakeholders that it is sincerely interested in CSP and before an improvement in reputation feeds into financial benefits from higher market shares, profit rates or other benefits.

CSP is also of strategic value because it may contribute to process or product innovation (Wagner, 2007; Frondel et al., 2007; Halme and Laurila, 2009). Process innovation contributes to the reduction of costs in the long term and improves the (long term) financial performance of the company. For example, companies investing in pollution prevention may permanently reduce the costs for energy, waste, packaging and transportation. Hence, if a company decides to introduce an environmental management system, this may lead to a future stream of monetary savings on energy consumption, waste production or other costly ways of pollution. Similarly, CSP can improve the quality of the product, for example by reducing the energy costs of product use. This will help companies to differentiate themselves from their competitors with the aim of increasing sales and market share. But developing business opportunities due to consumers' increasing demand for socially and environmentally friendly products often takes a long time (Dijk et al., 2013). And hence the value of investments in product innovation designed to augment the social or environmental quality of products to meet the increasing consumer's demand for socially responsible products also exists in the long run.

Furthermore, CSP may also be rewarded by potential employees and the current workforce. A good work climate may lead to more trust in the company, stronger commitment from employees, lower absenteeism and turnover rates, higher productivity, and a more positive attitude to work and good conduct (Sims and Keon, 1997; Turban and Greening, 1996). These social effects of CSP generate a permanent reduction in labor costs and increase in labor productivity and hence the payoff typically increases over time.

A final strategic motive for CSP is that organizations that integrate CSP in their policies may be more successful to avoid excessive regulatory intervention and meet existing regulations (Lougee and Wallace, 2008). By operating at labor or environmental standards that meet or go beyond what is legally required, the company can also reduce the probability of fines (Hart, 1995). But, again, the pay-off of such insurance-type benefits are only significant if the company has a long time orientation.

Whereas the various types of benefits of CSP investments typically take substantial time to materialize, the costs associated with CSP are often immediate (Wang, 2013). CSP often requires spending significant financial and other resources in the short term, such as installing equipment (Hart, 1995; Brammer and Millington, 2008). A cost benefit analysis of such investments will only yield a positive result if the company focuses on the benefits after the short term. Hence, the longer the time horizon of the company, the more beneficial CSP will be and the greater the incentive to make investments that are costly in the short term but profitable in the long term (Graafland, 2002). We therefore posit the following hypothesis:

H1   Time horizon has a positive influence on CSP.

2.2. *Time horizon and price competition*

The time horizon that a company applies in its strategic decisions is not a given, but will depend on the market environment in which the company operates. One important factor influencing the market environment is the intensity of price competition. There are indeed several reasons why intense price competition may induce short-termism.

First, fierce price competition puts a negative pressure on profitability and increases the risks of bankruptcy. As argued by Campbell (2007), if the continuity of the company is at risk because of low profit margins, there is a strong incentive to cut corners and save money where possible to survive in the short term, even if that causes the company to compromise on product quality or employee's safety. Segelod (2000) finds that the scope for long-term investments decreases when profit is low, because companies need to have a sufficient cash-flow to be able to develop their long-term projects and make them profitable.

Second, low profitability leads to more dependency of external financers. If owners of SMEs have less resources available for long term investments, they become more dependent on credit from external financers like banks. This breakdown of long-term relationships between company and financer leads to loan monitoring that is more bottom-line oriented and increases the focus on short-term performance. External financers may undervalue investments that will pay off only in the long run (Laverty, 1996). Hence, external financial intermediares will put pressure on the management to be pragmatic and reap benefits as soon as possible.

Based on this reasoning, we hypothesize that:

H2   The intensity of price competition has a negative influence on time horizon.

2.3 *Time horizon and technological competition*

Besides price competition, companies also compete on innovation (Vickers, 1995). In the free market perspective of the Neo Austrian School of economic thought, economic growth does not result from price competition, but rather through creative destruction from the competition in introducing new customer goods, new technologies, sources of supply and new types of organizational structures (Schumpeter, 1976). According to Schumpeter, technological competition acts not only when in being, but also when it is merely an ever-present threat. Even if a company is the only supplier in a certain market segment, the possibility of competitors inventing a new product that replaces the monopolist product creates a competitive pattern that is very similar to perfect price competition (Schumpeter, 1976: 85). Technological competition occurs only when one technology can substitute for another within a certain market. That means, the pattern of substitution concerns substitution between two types of technology applicable to a certain set of uses. Often innovations are incremental, but the accumulation of incremental innovations in operations and design processes may have the same creative destructive impact as major innovation.

Also technological competition may reduce the time horizon of companies (Bovenberg, 2002). In a dynamic market environment, companies may face a sudden decline in market share and even bankruptcy if other companies introduce new products that make existing products out-fashioned or obsolete. Creative destruction thus increases the uncertainty and risks and reduces the expected life time and this may induce short-termism in the company as well as in the financial market that provides the company with financial means. Although most investment professionals recognize that discounted cash flow is the appropriate model for valuing equities, they may believe that estimating distant cash flows is too speculative to be useful (Rappaport, 2005).

Technological competition may, however, also induce or even require a longer time horizon. As the development of new technology takes a long time and needs a long time to reach break-even, companies that face severe technological competition are forced to consider long-term effects of their investment decisions (Miller and Friesen, 1982). Segelod (2000) refers to research that shows that the development of a new type of product or technology takes 8 years on average to reach break-even and 12 years to achieve the same profitability as the old business. Companies with a short time horizon will be less prepared to make this kind of investments and are therefore less able to survive in a dynamic market context where only companies that innovate succeed (Schumacher et al., 2013).

The influence of technological competition on time horizon is therefore ambiguous and to be determined by empirical research. Based on these arguments, we posit the following hypothesis:

H3   The influence of the intensity of technological competition on time horizon is ambiguous.

2.4   The role of company size

As argued in the introduction, it is likely that CSP, time horizon and competition differ for small and large companies. The link between competition, time horizon and CSP may thus offer an explanation why CSP is dependent on the size of the company.

First, as small companies tend to be more subject to intense price competition than large companies, the competitive environment lowers the time horizon of small companies and this will consequently reduce their CSP.

Company size may also affect the time horizon of the company directly. SMEs are often privately owned and managed by their owners (Spence, 1999; Jenkins, 2009). Empirical research by Neubaum and Zahra (2006) suggests that the presence and salience of institutional long-term ownership promote corporate support for engaging in socially responsible activities. Family businesses are often characterized by inward orientation, long-term commitment, superior employee care and loyalty, long tenure of leadership (Flören, 1998) and exhibiting a strong religious/philanthropic approach to CSP (Jamali et al., 2008; Laudal, 2011). The policies of the family business tend to reflect the values of the managers (Lepoutre and Heene, 2006; Murillo and Lozano, 2006). Thus, the personal preference of top

management/owners is the most influential factor affecting the type and extent of SMEs' CSP policy (EC, 2002). One would therefore expect that small companies have a longer time horizon than large companies. Moreover, one could argue that SMEs are more long-term oriented because they are less exposed to capital markets. As Williamson et al. (2006) state: 'SMEs, being [...] without analysts and shareholders fixated by price/earnings ratios, are better placed than major corporates to take advantage of the fact that society and the media revere qualities such as honesty, integrity and the ability to say sorry'. In contrast, large companies are today much more pressured by fluid and impatient capital. The average holding period for stocks until the mid-1960s was about seven years. Today it is less than a year in professionally managed funds (Rappaport, 2005).

Finally, company size may affect CSP for other reasons than intensity of price competition or time horizon. Because of their small size, small companies attract less attention from societal organizations, such as media and NGOs, than large companies (Jamali et al., 2008; Laudal, 2011). They are just too small to be visible. This might diminish responsiveness to CSP of various stakeholders on the capital, product and labor market and reduce the potential of strategic benefits of CSP for small companies. Small companies therefore reap less reputational benefits of CSP and this generates a direct positive relationship between CSP and company size. Another difference is that SMEs are often organized on an informal basis and so are their CSR policies. Jamali et al. (2008) note that many scholars suggest that SMEs are even often unknowingly socially responsible. Graafland et al. (2003) find that large Dutch companies have more need of and hence make more use of instruments that foster the transparency of companies, like a code of conduct, ISO certification and social reporting. Furthermore, due to their small size, CSR instruments are relatively costly for SMEs. Large firms can spread the costs of CSR over a substantial larger turnover.

Based on this discussion, we pose two hypotheses on the relationship between company size and CSP and time horizon respectively:

H4   Company size has a positive influence on CSP.

H5   Company size has a negative influence on time horizon.

2.5   Conceptual framework and mediation

Based on the five hypotheses developed above, we propose the conceptual framework depicted in Figure 1. Figure 1 also sheds light on the possibility of mediation. Mediation is a hypothesized causal chain between three variables, in which the relation between two variables decomposes through a third called the mediator (Baron and Kenny, 1986). The first variable affects the mediator and the mediator affects the second. The conceptual framework potentially implies two types of mediation by time horizon. First, mediation of the relationship between price competition and CSP by time horizon occurs if hypothesis 1 and hypothesis 2 are both confirmed. Similarly, mediation of the relationship between

technological competition and CSP by time horizon is obtained if both hypothesis 1 and hypothesis 3 are confirmed. Based on this, we posit two additional hypotheses:

H6   Time horizon mediates the relationship between the intensity of price competition and CSP.

H7   Time horizon mediates the relationship between the intensity of technological competition and CSP.

Besides these indirect effects of competition on CSP through mediation by time horizon, we also test for direct effects of price competition and technological competition on CSP that are not mediated by time horizon but caused by other effects.

Figure 1   Theoretical framework
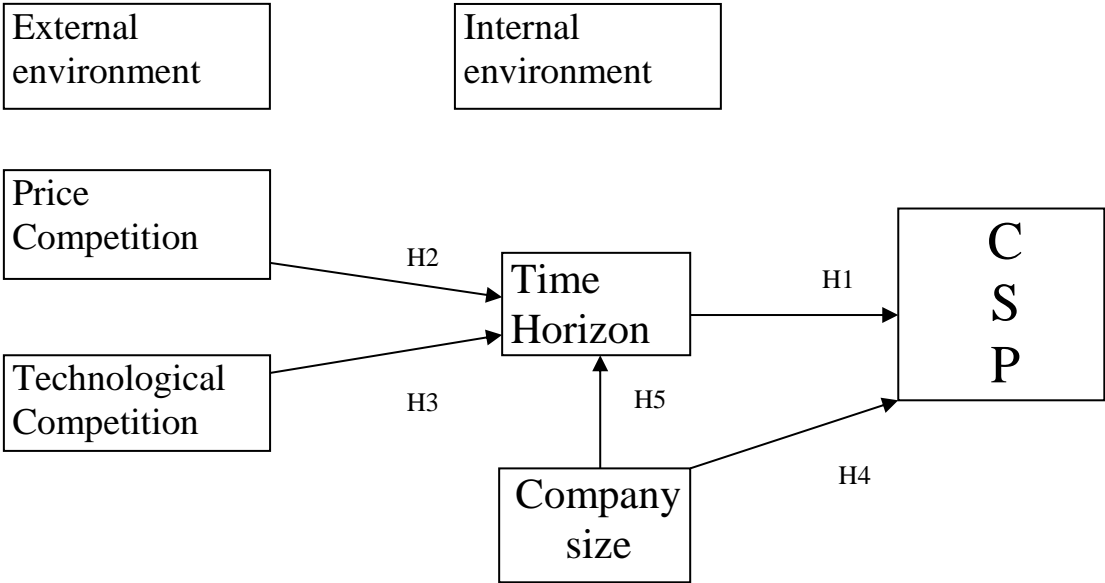
Finally, the relationships between competition, time horizon and CSP are controlled for various other company characteristics. First, we control for the company's position in the chain. Public campaigns are particularly effective if the targeted company is sensitive to public reputation (Brown et al., 2010). Companies with direct consumer relations and especially those with brands that they want to protect are therefore particular vulnerable to public advocacy campaigns and more inclined to pursue an active CSP policy. Second, CSP is conditioned on the culture and wider institutional environment of the company (De Geer, Borglund and Frostenson, 2010; Matten and Moon, 2008). This implies that CSP may depend on the region where the company is located. Also the time horizon may depend on the region. For example, UK companies have often been thought to invest in a more short-term manner than German companies (Segelod, 2000). Third, CSP may be affected by the sector in which

the company operates. The nature of the production processes or products determines the extent of social and environmental externalities that a company creates (Brown et al., 2010; Brammer and Pavelin, 2006).

3 Survey description

In this section we describe the measurement of the dependent and independent variables and some outcomes of the survey.

3.1 CSP

To collect data, we developed a survey for large companies and SMEs. The survey was sent to about 365000 companies in twelve European countries (Denmark, Finland, Sweden, The Netherlands, Germany, France, Austria, Hungary, Poland, Italy, and Spain). 13637 respondents responded to the survey (response percentage 3.7%) of which 4696 completed the survey. This relatively low response rate is in line with ex-ante expectations, because the survey is electronic and takes relatively substantial effort to fill in, particularly for small companies.

Before setting out the surveys, we first pre-tested it by interviewing ten executives from companies in various sectors. The aim of the interviews was to explore measures and terms to be used to measure the various factors in order to secure content validity. If the interviewees did not understand the questions or measures, we had the opportunity to seek, in interaction with the interviewees, for other formulations for the same concept. In this way, we avoided vague questions that could lead to misinterpretation by the respondents.

For the measurement of CSP, we used an average score based on 76 indicators per company which can be grouped into three types of sub-scores on the use of CSP related organizational instruments and the contribution to the environmental and social dimensions of CSP. We thus focus on the social and environmental dimensions of CSP, leaving out the economic dimension. Table 1 shows in more detail the measures that were included, as well as the mean and standard deviation of the CSP indices.

The first scale refers to general organizational measures or instruments that can be used to integrate CSP in the company's organization (Ulrich et al., 1998; Graafland et al., 2003). The second and third scales refer to six social and six environmental aspects of CSR respectively. The environmental aspects concern variables that affect climate change and (the conservation of) natural resources. While environmental aspects are considered to prevail in the CSP debate, the social dimension is perceived to be comparatively underexposed. The six aspects that we investigate relate to various quality of job dimensions, namely gender equality, diversity and non-discrimination, work organisation and work-life balance, skills and life-long learning, health and working conditions, and respect of human rights in the supply chain. For each aspect, the survey included questions on three procedural instruments that facilitate the organization of accountability in the company (which is an important aspect of AA 1000), a question on the effort to improve the performance in the respective issue and the

realization of improvements in each social and environmental aspect during the period 2007-2010. The procedural measures that enable the management of CSP are (1) measurement of the actual performance, (2) whether the company uses targets for the improvement in performance in the future, and (3) whether it reports the realization of these targets (RARE, 2006). The reason why we added the question on effort is that our pilot interviews indicated that SMEs may actually pro-actively foster their CSP without using formal procedures or programs that are more often used by large companies. Merely measuring the use of formal instruments to implement CSP may therefore bias the measurement of the actual implementation of CSP by SMEs.

Table 1 **Construction of CSP (sub)indices**[a]

Index	Unweighted average of scores on:	Mean				SD
		All	Small	Medium	Large	All
CSP instruments	internal code, external code, dialogue with NGOs, cooperation in supply chain, partnerships, participation in local initiatives, director is answerable to CSP, CSP related remuneration, confidential person, ethics committee, CSP training, reference guide, membership global initiatives, ISO9001, ISO14001, SA8000, Other certifications	27	22	32	47	20
Social aspects	women in board, recruitment disadvantaged workers, work life balance, employee training, work accidents, working conditions suppliers	43	41	46	51	11
Environmental aspects	CO2 emission, energy consumption, water consumption, waste production, environmental conditions suppliers	12	10	15	23	15
Overall CSP		27	25	31	39	12

[a] All sub-indices are scaled to the range from 0 (lowest value) to 100 (highest value).

In order to reduce the potential for social desirability bias, we explained to the respondents in an accompanying letter that the questionnaire was confidential and to be used for research purposes only. The identity of the participants would remain anonymous. The executives who filled in the questionnaire thus had little reason to present a more favorable picture of themselves than they knew was the case. In a study on pro-environmental behavior, Kaiser, Wölfing, and Fuhrer (1999) showed that people are only marginally tempted to give socially desirable answers. Also other studies show that self-reported behavior and actual behavior are strongly correlated (see, e.g., Fuj, Hennesy, and Mak, 1985; Warriner, McDougall, and Claxton, 1984; Bernard, 2000).

We collected our data using a single survey instrument and a single respondent per survey. To address the potential concerns of common method bias and common source bias, we used several procedural remedies (Podsakoff, Mackenzie, Lee and Podsakoff, 2003). We protected respondents' privacy by assuring them complete anonymity in our cover letter. We reduced item ambiguity by avoiding vague concepts, keeping the questions simple and pre-testing the survey with executives. Moreover, we carried out Harman's one-factor test. If a substantial amount of common method bias exists in data, a single or general factor that accounts for most of the variance will emerge if all the variables are entered together (Podsakoff et al., 2003). An unrotated principal component analysis on all the variables in our

analysis revealed 16 factors with eigenvalues greater than 1.0, which together accounted for 71% of the total variance. The largest factor did not account for a majority of the variance (11.7 %).

Finally, because of the relatively low response rate and possible non-response bias, we cannot assume that the outcomes are representative for all companies in the twelve European countries. In order to evaluate the non-response bias, we used wave analysis which assumes that late respondents are more similar to non-respondents than early respondents (Lin & Ho, 2011). For this purpose, we constructed a dummy variable with value 1 for respondents that responded to the first round, value 2 for responses after the first reminder, value 3 for responses after the second reminder and value 4 for responses after the third reminder. Bivariate regression analysis showed that the (Spearman) correlation coefficient between this dummy and the CSP of companies is insignificant (-0.012 with p=0.39).

The outcomes reported in Table 1 indicate a positive link between company size and CSP. For all three sub-indices, large companies (>250 FTEs) have a higher score than medium-sized companies (50-250 FTEs) and medium-sized companies perform better than small companies (<50 FTEs).

3.2   Time horizon and competition

Table 2 reports the sample mean and standard deviation for time horizon and competition. For time horizon, we used two questions: 'What is the average time horizon of the financial targets of your company?' and 'CSP may demand extra financial resources. What is the average time horizon for these investments for your company?'. On average, the time horizon is about 2.5 years. If we compare small, medium-sized and large companies, the outcomes indicate a positive link between time horizon and company size.

Table 2   Time horizon and competition

Variable	Measurement	Mean[a]				SD
		all	small	medium	large	all
Time horizon (in years)	Financial targets	2.62	2.52	2.75	2.97	1.32
	CSP	2.79	2.67	2.81	2.96	1.37
Competition[a]	Intensity of price competition	5.07	5.14	5.10	4.76	1.88
	Intensity of technological competition	5.19	5.09	5.38	5.28	1.67
Market position	Market leader (%)	16	11	21	39	
	Following the market leader (%)	10	8	14	17	
	Level playing field (%)	53	54	55	36	
	Niche market (%)	20	26	10	8	

[a] Mean response to 7 point scale ranging from: 'not at all'(1) to 'very much'(7).

We measure the intensity of price by the response to the statement: 'In the market for your main product or service, your enterprise is prone to price competition'. The intensity of

technological competition was measured by the response to the statement: 'In the market for your main product or service, your enterprise is prone to competition on quality and/or product innovation'. The questions were administered on a Lickert scale ranging from not at all (1) to very much (7). The average response equals 5.08 for price competition (with standard deviation of 1.88) and 5.19 for technological competition (with standard deviation 1.67). As expected, large companies experience more intense technological competition and less intense price competition than small companies. Besides price competition, we also inquired the market position of the company, as this may provide additional indirect information on the degree of price competition. Companies that are operating on a level playing field will be more subject to price competition than market leaders or companies operating in a niche market. In our sample, most companies stated that they operate on a level playing field. This concerns particularly small and medium-sized companies. The second largest group consists of companies operating in a niche market. This particularly concerns small companies. Furthermore, as expected, market leaders (the third largest group in our sample) concern relatively more large companies. Finally, 10% of the companies characterize themselves as following the market leader.

3.3   Company size and control variables

The distributions of the size of the company, its position in the chain, the region and the sector are reported in Table 3 (see below). 91% of the sample consists of SMEs. However, because of the large number of companies in our sample, we have still about 500 large companies with more than 250 employees in our sample. Companies in our sample mostly operate in business to business (B2B) relations. Only 7 % of our sample mainly or only sells to end consumers. With respect to regions, Table 3 shows that many respondents are from Mediterranean Europe. This is due to the large number of Italian companies to which the survey was sent as Italy traditionally have many SMEs compared to other countries. In contrast, for the UK we received a relatively low number of responses. We distinguish 19 sectors based on the National Accounts classification. Most companies operate in manufacturing sectors, but a substantial part of 37% concerns service industries.

4   Empirical analysis

This section describes the results of the empirical analysis. First, we use bivariate correlation analysis to investigate the correlation between the (in)dependent variables. Next, we use multiple regression analysis to test the hypotheses. Third, we determine the significance of the mediation paths.

Before performing statistical analysis, we tested for heteroskedasticity and outliers. Cross plots between CSP and the time horizon and competition variables showed no heteroskedasticy, whereas box plots indicated no problematic outliers. Given the fact that our sample is very large, multivariate normality should not pose serious problems. We therefore use ordinary least squares for the multiple regression analysis.

Table 3   Company size and control variables (% of respondents)

Number of employees (in FTE in 2007)			
0-10	27	100-250	8
11-50	37	>250	9
50-100	18		

Position in the chain			
B2B	45	Mainly B2C	5
Mainly B2B	25	B2C	2
in between	24		

Region			
UK	3	Continental Western Europe: Austria, France, Germany, The Netherlands	31
Mediterranean Europe: Italy, Spain	39	East Europe: Hungary, Poland	13
Scandinavia: Denmark, Finland, Sweden	14		

Sector division			
Agriculture, forestry and fishing	2.2	Electricity, gas and water supply	1.1
Mining and quarrying	.6	Construction	7.2
Manufacture of food products, beverages and tobacco	4.2	Trade and hotels and restaurants	8.7
Manufacture of textile and leather products	3.0	Transport	3.9
Manufacture of paper, publishing and printing	2.2	Telecommunications and computer services	4.4
Oil and chemical industry	2.9	Finance	1.1
Metal industry	8.9	Real estate activities	.8
Machine industry	9.0	Other services	18.0
Manufacture of transport equipment	.7	Other business activities	12.3
Other manufacturing	8.8		

4.1   Bivariate correlation analysis

Table 4 reports the outcomes of bivariate correlation analysis between CSP, time horizon, price competition, technological competition and company size. Table 4 shows that CSP is positively correlated with time horizon, technological competition, market leader and market follower position and company size and negatively correlated to level playing field and nice market position. The two measures for time horizon are highly correlated. Furthermore, time horizon is negatively correlated to price competition, but tends to be positively correlated to technological competition. Also the market position is significantly correlated to time horizon, companies that operate on a level playing field having a significantly shorter time horizon than market leaders. Finally, company size is positively correlated to time horizon.

Table 4   Results of bivariate correlation analysis[a]

	CSP	Time horizon		Competition	
		Financial	CSP	Price	Technological
CSP	1				
Time horizon: financial	.18**	1			
Time horizon: CSP	.12**	.49**	1		
Price competition	.00	-.07**	-.08**	1	
Technological competition	.11**	.05**	.02	.06**	1
Market leader	.16**	.07**	.05**	-.12**	-.01
Market follower	.07**	.02	.00	-.00	.02
Level playing field	-.08**	-.03*	-.02	.15**	-.01
Niche player	-.10**	-.01	.01	-.08**	.01
Company size (natural log)	.40**	.12**	.08**	-.06**	.06**

[a] Spearman's rho. * p<0.01; ** p<.001

Price competition is significantly correlated with technological competition, but the correlation coefficient is very small, indicating that these variables are indeed measuring very different types of competition. As Schumpeter (1976: 105) remarks, the introduction of new methods of production and new commodities is hardly conceivable with perfect price competition, because price competition is always temporarily suspended whenever anything new is being introduced. And vice versa perfect price competition may hamper technological competition because the lack of excess profits makes it harder to invest in innovation. As expected, price competition is substantially correlated to the market position of the company, market leaders and nice players facing relatively a low intensity of price competition and companies operating in a level playing field experiencing a relatively high intensity of price competition. For technological competition, we find no significant correlations with market position. Finally, in line with prior expectations, price competition is negatively correlated to company size, whereas for technological competition we find a significant positive correlation coefficient.

The high correlation between the two types of time horizon of .49 (which is equivalent to the so-called inter-item coefficient) suggests that they can be combined in one factor. Robinson, Shaver, and Wrightsman (1991) have five categories of reliability for the inter-item coefficient: none, minimal, moderate, extensive, and exemplary. They suggest that scores below .10 are deemed minimal, .10 to .19 moderate, .20 to .29 extensive, and scores above .30 are seen as exemplary. Given the high inter-item coefficient between financial and CSP time horizon, we can classify the factor time horizon as reliable. We also used confirmatory factor analysis to analyze whether we could cluster the two measures of time horizon. Cronbach's alpha of 0.66 indeed exceeds the lower limit of 0.60 (Hair, Anderson & Black, 1998). Based on the high and significant correlation coefficients, the confirmation of internal consistency by Cronbach's alpha and the good content coverage, we decided to use the factor time horizon in the multiple regression analysis.

Furthermore, we assessed the consistency of price competition and level playing field. The correlation coefficient of .15 indicates moderate reliability. Cronbach's alpha equals .14

which indicates insufficient internal consistency. This indicates that market position captures more dimensions than merely the intensity of price competition. Hence, although the two measures are clearly theoretically and empirically related, we decided not to use them in one factor.

4.2   Multivariate regression analysis

The estimation results for the regression analysis are presented in Table 5. In order to test for multi-collinearity, we examined the variance inflation factor (VIF) (Hair et al., 1998). For each variable we checked that the variance inflation factor was smaller than five, which was met in all cases. This implies that multi-collinearity is not a major problem.

The first column presents the estimation results for time horizon. The regression analysis shows that time horizon is significantly negatively related to the intensity of price competition, confirming hypothesis 2. Compared to market leaders (which is taken as the reference dummy), companies following the market leader and operating on a level playing field have a relatively short time horizon. The time horizon is shortest for companies operating on a level playing field, providing further indication that price competition negatively affects time horizon. The degree of technological competition has a small but significant positive effect on time horizon. Also company size has a significant positive effect on time horizon. We therefore have to reject hypothesis 5. For the control variables, we find that time horizon is longer for companies that supply directly to end consumers in comparison to companies operating in B2B relations. Furthermore, taking the UK as reference, we find that companies from Scandinavia and Continental Europe have a relatively long time horizon, whereas the time horizon for companies from Eastern Europe and Mediterranean Europe do not significantly differ from that of companies from the UK. Furthermore, we find some sectoral differences (with the category 'other business' taken as reference sector).

The estimation results in the second column show that hypothesis 1, that companies with a longer time horizon have a higher CSP, is confirmed. The coefficient is highly significant (p<.001). Furthermore, we find that company size has a direct significant positive effect on CSP, confirming hypothesis 4. For the control variables, we find that CSP is significantly related to the company's position in the chain. Furthermore, we find that companies from Anglo Saxon countries in Europe have a significantly higher CSP than companies from other regions in Europe, while also some sectoral effects are detected.

We do not find any significant direct influence from price competition on CSP. Also if we add price competition squared to test for non-linearity in the relationship between price competition and CSP, both coefficients appear to be highly insignificant. But we do find some direct effects of market position: companies operating on a level playing field significantly perform less than market leaders. In contrast, technological competition has a positive and highly significant direct influence on CSP (besides the indirect effect through time horizon).

Table 5   Results of multiple regression analysis[a]

	Time horizon	CSR
Time horizon		.122***
Price competition	-.039**	.015
Technological competition	.035*	.082***
Market follower	-.036*	-.037*
Level playing field	-.064**	-.086***
Niche player	-.035	-.069***
Company size (natural log)	.081***	.362***
B2C	.050**	.049**
Scandinavia	.085*	-.154***
Continental Europe	.168***	-.144***
East Europe	.033	-.076**
Mediterranean Europe	.066	-.074
Agriculture	.065***	.010
Mining	.042**	.010
Food	.045**	.017
Textile	-.012	-.012
Paper	.002	.029*
Oil & Chemical	.017	.035*
Metal	.010	.006
Machine	-.008	-.038*
Transport	.024	.004
Other manufacturing	.020	.013
Electricity. gas & water	.071***	.032*
Construction	-.020	-.004
Trade & hotels	.008	-.021
Transport services	.042**	.018
Telecommunications	-.018	-.027
Finance	.008	-.024
Real estate	.036*	-.005
Other services	-.040	-.010
R2	.055	.205
F	9.421***	40.178***

[a] Standardized coefficients; * $p<0.05$; ** $p<0.01$; *** $p<.001$

4.3   Significance of mediation effect by time horizon

In order to test the mediating role of the time horizon in the relationship between competition and CSP, we followed Zhao et al. (2010) and use the bootstrap estimation technique provided by Preacher and Hayes (2008) to provide reliable estimates of the significance of the mediation paths hypothesized in our framework. Table 6 shows that the indirect effect of price

competition on CSP through mediation by time horizon is significant, confirming hypothesis 6. However, its absolute magnitude is relatively small. For technological competition we find a significant positive mediation path, confirming hypothesis 7, but again the absolute magnitude of the indirect effect through time horizon on CSP is small. The mediation effects for market position are more substantial. Finally, company size has a significant positive effect on CSP mediated by time horizon. Overall, the results confirm that time horizon is a relevant mediator.

Table 6 **Results of mediation path analysis[a]**

Price competition	Technological competition	Market follower	Level field	Niche player	Company size
-.04*	.03*	-.20*	-.20*	-.15	.08*

[a] Unstandardized coefficients. For the indirect effects, the bootstrap estimates are reported, using 1000 bootstrap samples.* indicates that the bias corrected confidence interval (at 95%) does not include 0, which means that mediation is established.

5 Discussion

In this paper, we analyze the relationship between competitiveness, time horizon and CSP. The conceptual framework starts with the notion that the benefits of CSP only materialize in the longer run, while the costs associated with CSP are often immediate. A company that focusses on short term profitability will therefore not be inclined to invest in CSP related activities, as the future benefits of CSP are too much discounted. Hence, the longer the time horizon, the higher the CSP of a company will be. The time horizon of a company is an important internal factor of CSP. Institutional theory has, however, stressed that internal processes and motivations of CSP relate to broader socio-political regulatory processes. One of these conditions is the intensity of competition (Campbell, 2007). Companies supplying in non-branded, price sensitive consumer markets face higher risks when implementing CSP of which the revenues only accrue in the long run, because any short-term cost disadvantage will harm their market share (Van de Ven and Jeurissen, 2005). Furthermore, if companies are operating on a market where price competition is very fierce, the profit margins will tend to be low. Slack resources theory predicts that the availability of slack (financial and other) resources provides a company with more opportunity to invest in CSP (Waddock and Graves, 1997). Combining the effect of price competition on time horizon and the effect of time horizon on CSP leads to the hypothesis that the negative influence of price competition on CSP is mediated by time horizon.

Based on a large sample of 4696 companies from twelve European countries, we find that the two hypotheses on the relationship between time horizon and CSP and between price competition and time horizon are confirmed: price competition has a significant negative influence on the time horizon that a company applies in its investment decisions, whereas time horizon is found to exert a significant positive effect on CSP. Estimation results

furthermore confirm the hypothesis that time horizon significantly mediates the influence of price competition on CSP. The magnitude of the mediated effect is, however, relatively small.

However, also the market position of the company significantly affects time horizon. Particularly companies operating on a level playing field, that face more intensive price competition than companies with a market leader position, are found to have a significantly shorter time horizon than market leaders. Also the mediation of the influence of (level playing field) market position on CSP through time horizon appears to be significant. Insofar we can interpret the level playing field market position as an indicator for the intensity of market competition (that possible corrects for measurement errors in the direct measurement of the intensity of price competition), these results provide further indication that the intensity of price competition has an adverse effect on time horizon and that time horizon mediates the negative influence of price competition on CSP. However, it is also possible that the influence of market position on CSP reflects other mechanisms than price competition and that are not captured by company size or the other control variables.

Studies on the relationship between the intensity of competition and CSP have until now only focussed on price competition. Besides price, also innovation is an important instrument of rivalry. The bivariate correlation analysis shows that the correlation between the intensity of price competition and technological competition is relatively small, confirming that they represent different types of rivalry. The intensity of technological competition may affect CSP through time horizon. Theoretically it is not obvious whether the degree of technological competition increases or decreases the time horizon, since there are arguments for both types of influences. Our estimation results show that the positive effects dominate but the magnitude of the effect is small. Estimation results of the mediation path confirm the hypothesis that time horizon significantly mediates the influence of technological competition on CSP.

Furthermore, we find that CSP is related to company size. In our model, this relationship is threefold. First, there is an indirect effect through competition. As the bivariate correlation coefficients in section 4.1 show, small companies face significantly more intense price competition and less intense technological competition than large companies. As price competition diminishes time horizon and technological competition increases time horizon, the combination of these effects imply that company size has a positive influence on time horizon through competition.

Second, we also find a significant direct positive effect of company size on time horizon. This is contrary to our hypothesis that company size exerts a negative influence on time horizon. A possible explanation is that the size of the company is related to unobserved characteristics of the company, such as operational efficiency (which also partly explains why large companies have grown larger and small companies have not). As a result, large companies may have more resources than small companies, even if they are subject to a similar intensity of price competition. Because of these slack resources, they are more able to apply a long-time horizon on the return on investments.

Besides time horizon, we also detect a direct positive effect of company size on CSP. As discussed in the theoretical section, a possible explanation is that small companies attract

less attention from societal organizations, such as media and NGOs, than large companies (Jamali et al., 2008; Laudal, 2011). This will diminish responsiveness to CSP of various stakeholders on the capital, product and labor market of small companies and reduce the potential of strategic benefits of CSP for small companies. Furthermore, as shown in Table 1, SMEs make less use of CSP related instruments, either because they do not need formal instruments because of their small size or because CSR instruments are relatively costly for SMEs.

Regarding the other control variables, we find that companies operating in business to consumer relations have a better CSP than companies in business to business relations. On top of this direct influence, the position in the chain also affects CSP indirectly by fostering a longer time horizon. A possible explanation is that companies that are directly consumer-facing are more vulnerable to reputation damage from concerns related to their products and therefore are more aware of the importance of long-term policies that diminish the risk of such events. Furthermore, companies from the UK tend to have a relatively short time horizon in comparison to companies from Scandinavia and Continental Europe. This is in line with previous research that indicates more pressure from stock markets in Anglo Saxon countries forcing managers to give priority to short-term profit (Segelod, 2000). Still, companies from the UK outperform companies from other European countries with regard to CSP. The interpretation of this result is complicated, because the regional dummies may capture several different types of influences, such as culture and political and legal institutions, such as laws on corporate governance (Aguilera and Jackson, 2003). For the sectoral influences, we find that utilities and agriculture have both a relatively long time horizon, whereas utilities and the energy sector show a relatively high level of CSP. This can be explained by the predominance of externalities in the production and consumption of energy.

Besides the effects hypothesized by the conceptual framework, we find some other significant relations that are not predicted by our model. In particular, we also detect a significant negative direct effect of a level playing field market position and a significant positive direct effect of technological competition on CSP. As Zhao et al. (2010) argue, empirical evidence of a (non-hypothesized) direct effect has heuristic value for theory building. There are indeed several possible explanations of these additional findings. First, if companies operate on a level playing field that put downward pressure on their profit margins, this might not only affect their time horizon but also directly affect their CSP. As argued by Campbell (2007) and others (Orlitzky et al., 2003, Waddock and Graves, 1997), companies that have lower profitability have fewer resources available for socially responsible activities than companies that are more profitable and it might very well be that this slack resource effect is operative independently from the effect of low profitability on time horizon. Another argument is the 'noblesse oblige' view which argues that financial performance may be a precursor of CSP because organizational success may create a sense of obligation among executives to give back to the community (Orlitzky, 2008).

The positive direct effect of the intensity of technological competition can be explained by the responsiveness of stakeholders on the product and capital market to the CSP of the company. Rivalry in innovation poses a serious potential threat to the company's sales

or profitability, because under such conditions customers and suppliers can more easily shift to other companies and hence will face low costs to boycott the company (Glazer et al., 2010), creating an incentive to higher CSP. As a derivative effect, also financers on the capital market have a higher incentive to consider the CSP of companies in their investment decisions. More competition will therefore enforce responsiveness to CSP on the product and capital market. Second, in a business environment with intense technological competition, innovation is conceded to be essential for survival. But it may also provide a positive impulse to CSP, as CSP may be a qualitative means to distinguish the company from other companies (Wagner, 2007; Frondel et al., 2007). Several studies indeed find that CSP is positively related to innovation (Hull and Rothenberg, 2008; McWilliams and Siegel, 2000). CSP can also be an alternative to innovation for companies to differentiate themselves from others and raise their profitability (Klein and Dawar, 2004; Hull and Rothenberg, 2008). Finally, the direct effect of technological competition on CSP may point at possible positive effects from technological competition on innovation and from innovation on CSP. Previous research has shown that general innovation can have a positive effect on the adoption of voluntary environmental programs because innovative firms are already engaged in improving production processes and products and therefore have overcome management barriers and therefore are more likely to be capable of undertaking organizational changes and absorbing new costs in relation to CSP (Ziegler and Nogareda, 2009). As a result, since technological competition may stimulate innovation, it might also have an effect on CSP.

6   Summary and policy implications

In this paper we develop and test seven hypotheses on the relationship between competition, time horizon and CSP. Based on a sample of 4696 European companies, of which the majority concerns SMEs, six out of seven hypotheses are confirmed: (1) long time horizon fosters CSP; (2) time horizon depends negatively on the intensity of price competition; (3) time horizon depends positively on the intensity of technological competition; (4) CSP is positively related to company size; (5) time horizon mediates the influence of price competition on CSP; (7) time horizon mediates the influence of technological competition on CSP. The fifth hypothesis that company size has a negative effect on time horizon is rejected. Instead, we find a significant positive relationship between company size and time horizon. Furthermore, although tests on the significance of mediation paths show that time horizon significantly mediates the influence of price competition and technological competition on CSP, the magnitude of these effects are relatively small.

These findings provide further empirical support for the hypothesis that long time orientation encourages CSP. This has important policy implications, both at the institutional level and at the intermediate level of industrial organisations. At the institutional level, governments should seek to enforce the time horizon of companies, for example by stimulating long term shareholdership for large companies and stimulating credit suppliers of SMEs to consider the long term potential of companies financers of credit. By strengthening the commitment and involvement of financers with the company, they will have more insight

into and be more sensitive to the benefits of long term investments, such as investments in CSP. At the level of industrial organizations, norm setting for corporate governance can contribute to a long term orientation of large companies and SMEs. Sacrificing long-term prospects to meet quarterly earnings expectations can be reduced by proper executive compensation schemes that make remuneration dependent on long instead of short term financial performance (Mallin et al., 2013).

Furthermore, the finding that the intensity of price competition reduces the time horizon of companies and hence indirectly discourages CSP may have implications for competition policy. The aim of anti-trust policy to increase consumer welfare by intensifying market competition may collide with other government policies that aim at fostering CSP in order to meet sustainability goals. Although the indirect effects of the intensity of price competition and level playing field market position on CSP is relatively small, we have also detected direct negative effects from a level playing field on CSP. In combination with the finding that the intensity of technological competition fosters CSP directly as well as indirectly through time horizon, we conclude that, from the perspective of CSP, the government should focus on policies that foster technological competition, such as tax incentives for the venture capital industry, rather than price competition.

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[1] In literature, CSP is often distinguished from its sister concept CSR because most of the many different definitions of CSR that are used in the literature depend on motivation, meaning that it is the intent of an activity which counts (Crane et al., 2008). CSP is defined in terms of the observed CSR policies, processes and outcomes of a company's activities (Crane et al., 2008). As we use data to measure CSR and do not measure motivations, we stick to the term 'CSP' in our paper.