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Supervisor: Arian Borgers

THE PARADOX OF CSR BY CONTROVERSIAL INDUSTRIES: HOW DO INSTITUTIONAL HOLDINGS RESPOND?

Bachelor Thesis

Tim Gothauzen

ANR: 861794

Abstract

In this thesis the effect of engagement in CSR on institutional ownership by firms in the controversial industries is evaluated. These firms are known to have a social norms effect which causes the stocks in these firms to be held less by institutional investors due to the nature of the firms. I hypothesize that either the social norms effect holds no matter what or that there is a compensation effect caused by engagement in CSR. The results do not show a compensation effect and the social norms effect appears to hold as no positive effect on institutional ownership is found. For firms in the biotech, oil and cement industries engagement in CSR shows a significant positive effect on the number of institutions investing in the firm but a very small insignificant negative effect on the percentage of shares held by institutions, implying that only small institutions are attracted by the engagement in CSR. For firms in the alcohol, tobacco, gambling and weapons industries the results show a highly negative significant effect of CSR engagement on both the number of institutions and the percentage of shares held by the institutions implying that the social norms effect is far stronger for these types of industries causing institutions to distrust the intentions of the CSR engagement and withdrawing their investment activities in the firms.

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1. Introduction

Over the years firms have been encouraged to embrace more social responsibility. They have been encouraged by ethical consumers, governments and even investors to take responsibility for the impact they have on environment, consumers, communities, and all other members of the public sphere who may be considered as stakeholders. This has changed the economic world. According to Epstein and Pava (1992) and Pava and Krausz (1996) some investors' viewpoint has changed from getting the highest profits possible to a view where paying a premium for good corporate behavior is acceptable. Next to this, researchers such as van de Velde, Vermeir and Corten (2005), Kempf and Osthoff (2007) and Mackey, Mackey and Barney (2007) state that responsible investments can generate abnormal returns and can even increase performance. Earlier research from Aupperle, Carrol and Hatfield (1985) and Hamilton, Jo and Statman (1993), however do not find such positive effects. Because of this, corporate social responsibility (CSR) and socially responsible investments (SRI) have become increasingly popular topics for research during the past 20 years and is still becoming more and more popular. On the opposite side of SRI you will find the so called sin stocks (alcohol, tobacco, gambling and weapons) and stocks from controversial industries (sin industries + biotech, oil and cement). These are stocks that are deemed socially undesirable. Some investors tend to avoid investing in these types of stocks. This is referred to as the social norms effect. As of late even these firms have begun with CSR campaigns which is a controversial concept if you think about the fact that these firms core operations are seen as socially irresponsible. This invokes the question of how investors would respond to these activities. This is an interesting topic for research because little research has been done in this area. It's important for corporations to take institutions' concerns into account if they wish their company's stock to be attractive to an extremely large segment of the market. Institutions are estimated to account for almost 70% of all trading activities. If these controversial industries could make their stock more attractive to institutional holdings they would most likely embrace this, so it's important for them to know the effects of CSR. It could be financially important, but socially important as well. The more firms engaging in CSR the bigger the social impact. Most controversial markets aren't big in terms of number of firms, but they're important markets with very large corporations operating in them (large multinationals).

The main goal of this research is to find out whether engagement in CSR is beneficial for firms in controversial industries to attract more institutional investors and thus increase institutional ownership. It is researched whether the social norms effect against controversial industries holds no matter what or whether this effect can be compensated by engaging in CSR. This means that it's also evaluated whether there is a neglect from these investors due to the nature of the firm or due to its activities as a whole. I hypothesize that either the social norms effect holds or that there is a compensation effect for the nature of the firm caused by engagement in CSR. To test this, data has been used from 1995-2009 from the Thomson-Reuters database for data of institutional holdings, from the KLD Research and Analytics database for data on Corporate Social Responsibility and the Compustat database for firm information. By analyzing the effects of CSR engagement by firms in the controversial industries on the percentage of shares owned by institutions and the number of institutions investing in the firms I find that the social norms effect holds and no compensation effect is found as only a positive effect is found on the number of institutions investing in the firm but not on the percentage of shares owned by these institutions. The sin industries are known to be extremely affected by social norms. Even more than the other controversial industries so the two types of industries are separately evaluated as well. When looking at the differences between the sin industries and the other controversial industries I find a large difference. The sin industries show a highly negative effect of engagement in CSR on institutional ownership which implies that for firms in these industries the opposite of compensation happens. CSR engagement backfires for firms in the sin industries causing them to lose (large) institutional investors instead of acquiring additional ones and thus lowering institutional ownership. This is caused due to the fact that the social norms effect is a lot stronger for these industries compared to the other controversial industries. These results hold when using several robustness checks. I then check whether there are differences between the more and less constrained institutions. The constrained institutions show the same effects as mentioned before, but even though the results from the less constrained imply a more positive effect, the results are insignificant and thus inconclusive.

With the results of this research more insight will be given about the impact of engagement in CSR in controversial industries and whether it is beneficial for firms in these industries if they are interested in attracting more institutional investors. Next to that, the social norms effect explained by Hong and Kacperczyk (2009) has been reevaluated and once again proved.

The rest of the paper will proceed as follows: In chapter 2 relevant literature will be discussed in the area of CSR, SRI and controversial industries and by analyzing this relevant literature, hypotheses will be formulated. In Chapter 3 it will be explained how the data was retrieved, how data from controversial industries will be indentified, the dataset will be described and the variables for the regression models will be specified. In chapter 4 the empirical results of the regression analyses will be reported and in chapter 5 there will be concluded. Details on certain calculations and regressions can be found in the appendix.

2. Theory and hypotheses

The economic environment consists of an enormous amount of companies with countless of different activities. Depending on these activities you can classify these companies into different industry sectors. Some of these industry sectors are seen by the general public as controversial. They are often marked by social taboos, are involved in a lot of moral debates and experience a lot of political pressure to try and persuade them to (voluntarily) maintain a certain standard of social responsibility. As mentioned earlier, a part of the controversial industries are the sin industries. These industries are often seen as being sinful. Examples of sin industries are tobacco, alcohol, gambling, weapons and adult entertainment. Other industry sectors that are generally seen as controversial are those that are often involved in ethical, social or environmental issues such as the oil, nuclear, biotech and cement industries. Think of companies such as Heineken, Playboy, Philip Morris, Imperial Tobacco, BP and Amgen. Salaber (2007) states that the main reason industries such as tobacco alcohol and gambling are considered a sin is that they have an addictive component which also causes higher medical costs and is thus harmful for society for both social and economic reasons. Another thing to note is that governments try to make the use of (most of) the products from the controversial industries less attractive by putting an excise tax on these products (also called a sin tax). Think of the taxes on oil, tobacco and alcohol. The other industries have differing reasons as to why they are seen as controversial. The nuclear industry is seen as controversial due to safety and environmental issues while the oil and cement industries are seen as controversial due to the amount of pollution and environmental damage they cause. The biotech industry is a fast evolving industry and as such has become a popular topic for

discussion as it involves activities that certain people do not deem acceptable such as manipulating genetics to improve growth of crops, modifying food and cloning of animals.

Since socially responsible investments (SRI) has become such a hot topic, more and more investors have started to avoid investing in these controversial firms. In their review, Renneboog, Ter Horst and Zhang (2008) state that SRI is used to pursue both financial and social objectives and that the current literature hints at investor's behavior to accept suboptimal financial performance to pursue social and ethical objectives. This also entails corporations to adopt Corporate Social Responsibility (CSR) into their everyday activities. Even though there is no clear unison about the value or the meaning of CSR for firms, Hong and Kacperczyk (2009) state that it generally stands for embracing social responsibility and serving people, society and environment above the level of legal requirements. This definition seems to be accurate as later on it has been accepted and used by several other researchers such as Lindgreen, Swaen and Maon (2009) and Harjoto and Jo (2011) .

Investors who adopt SRI often use negative screening (avoiding controversial industries) which according to de Colle and York (2009) isn't always the best way to influence firms to take on a certain direction, because firms are either depicted as saints or as sinners. There is no neutral area. Despite the fact that according to Fabozzi, Ma and Oliphant (2008) these socially undesirable stocks outperform other stocks they are still unwanted by a lot of (institutional) investors. Hong and Kacperczyk (2009) conclude that next to higher returns the controversial stocks are held less by institutions than other types of stocks. This is caused by a social norms effect. Due to the fact that less investors are interested in purchasing these types of stocks, the price gets pressured downwards while the real value of the firm isn't affected causing higher returns. They conclude that this social norms effect is caused by the nature of the firms. According to Liu, Lu and Veenstra (2011) however financial performance affects the social norms effect and they conclude that market participants sacrifice on their adherence to social norms for higher financial rewards.

As of late, firms in the controversial industries have started adopting CSR as well. This is an interesting development as the core activities of these firms are deemed socially undesirable. These firms seem to be trying to inform the public that they consider social responsibility to be important even though their products are harmful to people, society or environment. According to

research it does seem to help improve a firm's reputation when its reputation is bad. Hing (2001), Yoon, Gürhan and Schwarts (2006) and Barraclough and Morrow (2008) all find evidence of this. Cai, Jo and Pan (2011) find evidence that engagement in CSR by firms in controversial industries also positively affects firm value. There is however skepticism among researchers about the true intentions of the firms. Palazzo and Richter (2005) claim that the CSR activities of the tobacco companies might be just a strategic choice to divert peoples' attention from their hazardous activities.

Institutional holdings also react to the social activities of a firm. Coffey and Fryxell (1991), Graves and Waddock (1994), Simerly (1995) and Mahoney and Roberts (2007) all find that social performance increases the amount of institutions holding your stocks and they find a positive relation between corporate social performance and the percentage of institutional ownership of a firm.

According to Hong and Kacperczyk (2009) there is a neglect of investors to invest in controversial industries due to the nature of the firm, but at the same time other researchers claim that adoption of CSR in general can improve a firm's reputation, can improve the amount of institutions willing to purchase your stocks and the percentage of stocks held by institutional investors. If this also holds for CSR adoption in controversial industries this would mean that the social norms effect does not hold and can be compensated by adopting CSR. This will from now on be referred to as the compensation effect. This means that two hypotheses regarding institutional holdings can be developed: One where adoption of CSR in controversial industries has no effect on institutional ownership due to social norms (no effect due to the nature of the firm) and one where adoption of CSR in these industries can compensate for the nature of the firm (effect due to activities of the firm). In other words: Is there a compensation effect (H1) or is there a social norms effect (H2a). If the social norms effect holds it could be hypothesized as well that engagement in CSR by these controversial industries could be frowned upon by institutional investors for it is sort of a paradox due to the nature of the firms. As stated by Palazzo and Richter (2005), they could interpret it as just another managerial tactic to try and increase sales by creating a better image. This could cause it to backfire and thus causing a negative effect (H2b). Other possibilities are that investors see it as a deviation from the firm its core industry (which is deemed irresponsible) costing them money, causing them to choose different firms to invest in.

Hong, Kubik and Cheinkman (2011) find that firms mainly invest money in CSR when firms are doing well and have money to spare and Cheng, Hong and Shue (2012) state that some managers just use CSR engagement for perks. These two effects could make investors question the intentions of the engagement in CSR by firms, causing a negative effect as the firm creates CSR costs and investors who don't trust the intentions of the firm might not be willing to bear these costs (investor doesn't want the firm to spend money on a manager's perks). This could especially be the case for firms in the controversial industries where the engagement in CSR is already a paradox by itself. Large institutions are very active in monitoring such activities.

H1: Engagement in CSR by controversial industries is associated with higher institutional ownership.

H2a: Engagement in CSR by controversial industries has no effect on institutional ownership.

H2b: Engagement in CSR by controversial industries has a negative effect on institutional ownership.

This would mean that if a significant positive effect is found, the neglect is not caused by the nature of the firms but by the activities of the firm, or that the resentment caused by the nature of the firm can be compensated by adopting CSR.

As said before, this paper will look at five types of institutional holdings and research whether differences can be spotted among the several types of institutions: (1) banks, (2) insurance companies, (3) mutual funds, (4) Independent investment advisors and (5) all other institutions.

Hong and Kacperczyk (2009) claim that numbers 3 and 4 are less constrained by social norms and pressure and they find that these institutions hold a higher percentage of stocks in controversial sectors. As stated before, engagement in CSR should increase the percentage of institutional ownership. If the social norms effect holds however it shouldn't and institutional holdings numbers 1,2 and 5 will not react to this adoption of CSR (or have a negative effect) while the less constrained institutional holdings, 3 and 4 will react positively (H3).

If there is a compensation effect, all institutions will react positively. The less constrained institutions show a positive effect but aren't affected by the compensation effect, because compensation isn't needed. The more constrained institutions will show a positive effect because

the social norms effect is compensated by engagement in CSR (assuming there is a compensation effect). However, I hypothesize that if there is a compensation effect, it either fully compensates or partly compensates the constraints from social norms and pressure. If it fully compensates them there should be no differences between the two groups of institutions (H4a).If engagement in CSR only partly compensates these constraints, the effect should be positive for both groups of institutions but larger for the less constrained institutions (H4b).

H3: CSR engagement by controversial industries has a positive effect on institutional ownership of the less constrained institutional holdings but has no effect or a negative effect on the constrained institutions.

H4a: CSR engagement by controversial industries has an almost equally positive effect on institutional ownership of all types of institutional holdings.

H4b: CSR engagement by controversial industries has a positive effect on institutional ownership of all types of institutional holdings. The effect is larger for the less constrained institutions.

3. Data

In this paper, institutional ownership will be measured in two ways. First the effect of CSR engagement on the number of institutions investing in the firm will be measured, and second the effect of CSR engagement on the percentage of institutional ownership will be measured. The Thomson-Reuters institutional holders (13F) database (formerly known as CDA/Spectrum) will be used to determine the institutional ownership of the firms. This database provides information on five types of institutions and the amount of shares they hold in specific firms. These five types of institutions are: (1) banks, (2) insurance companies, (3) mutual funds, (4) Independent investment advisors and (5) all other institutions. Data from 1995-2009 will be used from this database. This equals to 8.639.808 observations (1 observation per institution, holding x shares in firm i in year t). The two institutional ownership measures are calculated by counting the amount of institutions investing in firm i in year t and by calculating the total shares held by institutional holdings in firm i in year t and dividing this by the total shares outstanding by the firm in that year. This edited database has 170.399 observations (1 observation per firm i in year t) . These two measure are used as the dependent variable.

To analyze whether a firm in the database scores well on CSR, a measurement is required. The KLD Research and Analytics database will be used to create this measure. Data is usedc from 1995-2009. KLD offers data from 1991-2010, but the data from 1991-1994 do not have cusip or ncusip identification codes available that will be necessary to merge the several databases and the year 2010 has very little observations. The database provides companies with a binary rating (1 or 0) on strength items and concern items about several categories of a firm. These categories are: community, environment, diversity, employee relations and product quality and safety. A full list of all strengths and concerns can be found in appendix 1, table 11. This database has 29.859 observations (1 observation per firm i in year t)

This paper will follow Hillman and Keim (2001), Baron, Harjoto and Jo (2011) and Cai, Jo and Pan (2011) who used this same database and use their aggregate CSR index measurement. It's a CSR measurement in which strengths as well as concerns will be taken into account. A detailed calculation of the index can be found in appendix 2. A second (less complicated) Net CSR measurement will be used for robustness. This net CSR measurement is calculated by adding up all strengths and deducting all concerns. These two measures are used as the independent variable.

For the analysis several control variables will be added to control for size, past financial performance, liquidity, debt level and industry. All these variables will be measured using data from the Compustat database from 1994-2008. Size will be controlled for by using total sales and total assets. Financial performance will be controlled for by using return on equity and return on assets. Liquidity will be controlled for by using the current ratio and debt level will be controlled for by using a long term debt to total assets ratio. The Compustat database also provides SIC and NAICS industry codes. These industry codes will be used to identify the firms from the controversial industries and to create the industry dummies that will be added to the model for each of the industries. These dummies will have a value of 1 when a stock's SIC or NAICS industry codes correspond with those associated with the industry. This database has 176.625 observations. All the data from these three databases has been matched using cusip identification codes[1]. Only data is kept from firm-year observations that are scored on the KLD

[1] Since KLD uses ncusip identification codes and the other two databases use cusip identification codes, a fourth database (CRSP) has been used to derive cusip and ncusip codes of firms so that all the data could be merged together while matching most data.

database, that have institutional ownership data and compustat data available. This matched database has 19.499 observations (1 observation per firm i in year t).

In Table 1 an overview is provided of all the variables used and their data source.

Table 1: In this table an overview is provided of all variables, their definitions and the Data Source they're derived from.

Variables	Definitions	Data Source
Measures of Institutional Ownership:		
Number of Institutions	**The amount of institutional holdings investing in firm i at year t**	**Thomson Reuters**
Percentage of Institutional Ownership	**The percentage of total shares held by institutional holdings in firm i at year t**	**Thomson Reuters**
Measures of CSR:		
CSR Index	**An aggregate CSR index measurement**	**KLD**
Net CSR	**The difference between the total number of strength items and concern items of firm i at year t**	**KLD**
Control Variables:		
Assets	**Book value of total assets of firm i at year t-1**	**Compustat**
Sales	**Total amount of sales of firm i year t-1**	**Compustat**
Return on Equity	**Net Income of divided by shareholder equity of firm i at year t-1**	**Compustat**
Return on Assets	**Net Income of firm i divided by book value of total assets of firm i at year t-1**	**Compustat**
Current Ratio	**Book value of total current assets divided by book value of total current liabilities of firm i at year t-1**	**Compustat**
Long Term Debt to assets Ratio	**Long term debt divided by book value of total assets of firm i at year t-1**	**Compustat**

SIC and NAICS codes (from the Compustat database) are used to identify firms in the controversial industries in line with Hong and Kacperczyk (2009) and Cai, Jo and Pan (2011). SIC codes 2100-2199 will be identified as tobacco firms, SIC codes 2080-2085 are alcohol firms, SIC codes 3760-3769,3795, 3480-3489 will be identified as weapon firms, SIC codes 1300, 1310-1339, 1370-1382, 1389, 2900-2912, 2990-2999 as oil firms, SIC codes 2833-2836 as biotech firms, and cement firms have SIC codes 3240-3241. Nuclear power will be identified using the 22113 NAICS code and gambling will be identified using the 7132, 71312, 713120, 71329, 713290, 72112, 721120 NAICS codes. In table 2 an overview is provided of the firms identified as being operational in a controversial industry (2010 observations). Observations with a percentage of shares owned by institutions larger than 100% have been removed, because this could be caused due to preferred stocks but also due to mistakes in the data.

Table 2: In this table sample statistics are provided. The amount of observations per industry (and total observations) are displayed as well as the percentage of total observations per industry. The above mentioned SIC and NAICS codes have been used to identify these firms.

	#firm-years	% of total firm-years
Sin industries:		
Alcohol	**46**	**2.3**
Tobacco	**33**	**1.6**
Gambling	**74**	**3.7**
Weapons	**49**	**2.4**
Sin Total	**202**	**10.0**
Other:		
Cement	**6**	**0.3**
Oil	**841**	**41.8**
Nuclear	**0**	**0.0**
Biotech	**961**	**47.8**
Other Total	**1808**	**90.0**
Total	**2010**	**100.0**

The sample descriptive statistics of the institutional ownership variables, CSR variables and the control variables are reported in table 3. The table shows that on average 68 percent of the shares from the firms in the sample are held by institutions. There is a high variation as some firms'

shares are barely held by institutions while other firms' shares are almost completely held by institutions with a minimum of 0.02 and a maximum of 0.99 percent The average number of institutions holding shares of a firm is about 264 with a minimum of 2 institutions and a maximum of 1656 institutions. The aggregated CSRindex has a mean of 0.42 with a minimum of 0.30 and a maximum of 0.57. The differences are a lot larger for the netCSR measurement as it has a mean of -0.49 with a minimum of -7 and a maximum of 8. The average assets of the firms in the sample were about 6.6 billion and the average sales were about 5.8 billion. The differences in assets and sales are fairly large as there are firms with very little amount of assets as well as sales and firms with incredibly large amounts of assets and sales. The average return on equity of the sample firms was about 1 percent and the average return on assets was about -2 percent. The average current ratio was about 3.2 and the average debt to assets ratio was 0.21.

Table 3: In this table the sample descriptive statistics of all variables are provided. Data from 2010 stocks from 1995-2009 is used. The amount of observations, the mean, the standard deviation, the minimum and maximum are provided of the percentage of shares owned by institutions, the number of institutions holding shares in the firm, the CSRindex, the netCSR, assets (in millions), sales (in millions, return on equity (percentage), return on assets (percentage), the current ratio (current assets divided by current debt) and the debt-to-assets ratio.

Variables	N	Mean	S.D.	Min	Max
1. Percentage Of Shares Owned by Institutions	2010	0.68	0.21	0.02	0.99
2. Number of Institutions	2010	263.70	282.92	2	1656
3. CSRindex	2010	0.42	0.04	0.30	0.57
4. NetCSR	2010	-0.49	1.97	-7.00	8.00
5. Assets	2010	6,648.27	17,894.52	10.27	195,256
6. Sales	2010	5,790.93	20,362.23	0.01	263,989
7. ROE	2010	0.01	0.53	-2.88	2.89
8. ROA	2010	-0.02	0.23	-2.11	0.77
9. Current Ratio	2010	3.20	3.17	0.19	19.88
10. Debt-to-Assets Ratio	2010	0.21	0.22	0	2.62

I estimated the following model:

$IO_t = \alpha + \beta_1 * CSR_t + \beta_2 * Assets_{t-1} + \beta_3 * Assets^2_{t-1} + \beta_4 * Sales_{t-1} + \beta_5 * Sales^2_{t-1} + \beta_6 * ROE_{t-1} + \beta_7 * ROA_{t-1} + \beta_8 * Current\ Ratio_{t-1} + \beta_9 * Debt\text{-}to\text{-}Assets\ Ratio_{t-1} + \beta_{10\text{-}16} * Industry\ Dummies + \beta_{17} * Sin\ Dummy + \beta_{18} * (Sin\ Dummy * CSR)$

This model has been constructed by analyzing models used by Graves and Waddock (1994), Hong and Kacperczyk (2009) and Cai Jo and Pan (2011).

A sin dummy and a sin dummy * CSR variable have been added to the model to determine whether the sin industries (alcohol, tobacco, gambling and weapons) react differently compared to the other controversial stocks.

Table 4: In this table the correlations of all the variables are provided. Data from 2010 stocks from 1995-2009 is used. Correlations between the percentage of shares owned by institutions, the number of institutions holding shares in the firm, the CSRindex, the netCSR, assets (in millions), sales (in millions, return on equity (percentage), return on assets (percentage), the current ratio (current assets divided by current debt) and the debt-to-assets ratio are provided. * Correlation is significant at the 0.1 level; ** Correlation is significant at the 0.05 level; * Correlation is significant at the 0.01 level.**

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Percentage of Shares Owned by Institutions	**1.00**									
2. Number of Institutions	**0.17***	**1.00**								
3. CSRindex	**-0.01**	**0.15***	**1.00**							
4. NetCSR	**-0.02**	**0.18***	**0.96***	**1.00**						
5. Assets	**0.01**	**0.76***	**-0.05***	**-0.03**	**1.00**					
6. Sales	**-0.01**	**0.62***	**-0.10***	**-0.10***	**0.91***	**1.00**				
7. ROE	**0.11***	**0.24***	**0.00**	**-0.01**	**0.13***	**0.10***	**1.00**			
8. ROA	**0.19***	**0.31***	**0.01**	**0.00**	**0.16***	**0.13***	**0.58***	**1.00**		
9. Current Ratio	**-0.10***	**-0.27***	**0.08***	**0.08***	**-0.20***	**-0.17***	**-0.24***	**-.30***	**1.00**	
10. Debt	**0.11***	**-0.07***	**-0.05***	**-0.06***	**-0.06***	**-0.08***	**0.10***	**-0.09***	**-0.19***	**1.00**

In table 4 the correlations of all variables are provided. The two CSR measurements are highly correlated, implying that an increase in either of the indexes will cause an increase in the other index as well. What is interesting is that the percentage of shares owned by institutions and the number of institutions investing in a firm are not that highly correlated. This implies that an increase in the number of institutions investing in a firm does not necessarily increase the percentage of shares held by institutions. Assets and sales are highly correlated as well. This makes sense as large firms often have a high amount of sales as well.

4. Results

In this section it will be empirically tested whether adoption of CSR by these firms in the controversial industries has an effect on the percentage of shares owned by institutions and the number of institutions investing in a firm. This will be done by regressing both these variables on the two different CSR measures in combination with the control variables. In table 5 the results from several regressions are provided. The left side of the table shows the results with the percentage of shares owned by institutions as the dependent variable while the right side of the table shows the results with the number of institutions as the dependent variable. In columns numbered 1 and 3 the CSRindex measurement is used and in the columns numbered 2 and 4 the netCSR measurement is used. Due to colinearity the smoking and sin dummies have been left out of the model. Looking at the Percentage of shares owned by institutions one can see that the R^2 of both these models are really low even though I controlled for a lot of factors. Both the CSRindex and the NetCSR measurement show a really small almost neglectable negative impact on the percentage of shares owned by institutions. The results however are not significant so it's not conclusive. The SinCSR and the SinNetCSR variable, however show a totally different picture. They both show a really large significant negative effect of CSR engagement on the percentage of shares owned by institutions. If the CSRindex increases by 0.01 the percentage of shares owned by institutions will decrease by 1.3193%. The same holds for the SinNetCSR where an increase of 1 would cause the percentage of shares owned by institutions to decrease by 2.73%. So for the firms operating in the sin industries it appears that engagement in CSR has a negative effect on the percentage of shares owned by the institutions.

Table 5: In this table results of regressions are provided using data from 1995-2009 of 2010 stocks. The dependent variable on the left side of the table(1 and 2) is the percentage of shares owned by institutions and the number of institutions on the right side of the table (3 and 4). Data from all five types of institutions has been used. In the columns numbered (1) and (3) the CSRindex measurement is used as the dependent variable and in the columns numbered (2) and (4) the NetCSR measurement is used as the dependent variable. Assets (in millions), sales (in millions), return on equity (percentage), return on assets (percentage), current ratio (current assets divided by current debt), debt to assets ratio, assets^2 (in millions) and sales^2 (in millions), at the end of the previous year, are the control variables used in the regression. The six industry dummy variables have the value 1 if the stock belongs to the corresponding industry. SinCSR is SinDum*CSRindex and SinNetCSR is Sindum *NetCSR. Adjusted R^2s are provided in the last row. The regression coefficients are provided for each variable with the t-statistics in parentheses. * Regression is significant at the 0.1 level; ** Regression is significant at the 0.05 level; * Regression is significant at the 0.01 level.**

Variable	(1) = %	(2) = %	(3) = #	(4) = #
CSRindex	**-.0468**		**871.0135***	
	(-0.40)		(7.69)	
NetCSR		**-.0011**		**17.0278***
		(-0.49)		(7.86)
SinCSR	**-1.3193***		**-1067.8200****	
	(-3.07)		(-2.39)	
SinNetCSR		**-.0273***		**-26.9317***
		(-3.02)		(-2.88)
Assets	**.0000***	**.0000***	**.0283***	**.0279***
	(4.86)	(5.03)	(20.78)	(20.60)
Sales	**.0000***	**.0000***	**-.0041***	**-.0039***
	(-3.83)	(-3.94)	(-3.32)	(-3.11)
ROE	**-.0067**	**-.0067**	**17.1614***	**17.7895***
	(-0.48)	(-0.47)	(3.19)	(3.36)
ROA	**.1926***	**.1918***	**168.0738***	**168.0913***
	(5.86)	(5.83)	(11.83)	(11.94)
Current Ratio	**-.0004**	**-.0004**	**-7.7052***	**-7.3655***
	(-0.21)	(-0.21)	(-9.01)	(-8.56)
Debt	**.1547***	**.1538***	**4.8959**	**5.1829**
	(4.83)	(4.81)	(0.47)	(0.50)
Assets*Assets	**.0000***	**.0000***	**.0000***	**.0000***
	(-3.41)	(-3.46)	(-11.50)	(-11.44)
Sales*Sales	**.0000***	**.0000***	**.0000***	**.0000***
	(2.74)	(2.77)	(3.13)	(3.05)
AlcoholDum	**.2328***	**.2203***	**125.7679***	**137.0474***
	(4.47)	(4.50)	(2.85)	(3.26)
WeaponsDum	**.1949***	**.1824***	**17.4195**	**19.5048**
	(3.84)	(3.77)	(0.45)	(0.53)
GamblingDum	**.05544**	**.0417**	**-21.3675**	**-17.4108**
	(1.14)	(0.90)	(-0.60)	(-0.52)
OilDum	**-.3513****	**.2066***	**-384.3365****	**87.4313***
	(-2.13)	(5.06)	(-2.20)	(2.49)
BiotechDum	**-.3598****	**.1985***	**-294.0001*****	**172.8288***
	(-2.16)	(4.81)	(-1.68)	(4.84)
CementDum	**-.1476**	**.4103***	**-378.7447****	**93.8107***
	(-0.89)	(9.26)	(-2.16)	(2.52)
Adjusted R^2	**0.0815**	**0.0818**	**0.8179**	**0.8183**

When looking at the number of institutions investing in a firm an interesting result comes up. Both CSR measurements show a significant positive effect of CSR engagement on the number of institutions investing in a firm. If the CSRindex increases by 0.01 the number of institutions increases by 8.71 and if the NetCSR increases by 1 the number of institutions increases by 17. These two models have much higher R^2s compared to the first two models. However, once again the sin industries show large significant negative effects of CSR engagement. It seems that CSR engagement by controversial industries shows almost no effect on the percentage of shares owned by institutions but does show a positive effect on the number of institutions investing in the firm. CSR engagement by the sin industries however seems to backfire and cause a negative effect on both the percentage of shares owned by institutions and the number of institutions investing in the firm. This makes sense as the sin industries are far more constrained by social norms than the other controversial industries. An interesting but odd result is the fact that the dummies from the sin industries show small positive relations with institutional ownership while the engagement in CSR for these industries shows a large negative relation with institutional ownership. Considering the social norms effect this is counterintuitive as both should be negative or at least not positive.

When regressing the stocks in sin industries (alcohol, tobacco, gambling and weapons) and the stocks in other controversial industries (oil, biotech and cement) separately one can see the same effects. The results of these regressions are provided in appendix 3, table 12.

The differences between the two institutional ownership variables are fairly easy to explain. Whether an institution wants to invest or not isn't too hard of a decision for most and engagement in CSR seems to push them towards investing, but the decision of how much they want to invest is a much more complicated one where the institutions may consider other variables exogenous to this model. Engagement in CSR seems to be only a small part in the decision making process. This is reflected in the R^2s of the models. This would mean that engagement in CSR seems to attract only small institutions to invest in your firm as it doesn't show an increase in the percentage of shares owned. At least this is the case in the oil, biotech and cement industries. For firms in the sin industries, it only seems to chase away institutions and even the large ones as the percentage of shares owned is highly negatively affected as well. This could be caused by distrust in their intentions or by the fact that the firm deviates from its core industry causing investors to

invest somewhere else. Investors might see the engagement in CSR activities by these firms from the sin industries as just another way of trying to make more profits by trying to improve their image or by trying to divert the attention away from their sinful activities. This could cause the CSR engagement to backfire and cause negative effects and push the institutions that were investing in them away, because they don't want to be associated with this type of behaviour.

This would imply that the social norms effect holds for all types of these stocks as Coffey and Fryxell (1991), Graves and Waddock (1994), Simerly (1995) and Mahoney and Roberts (2007) all stated that social performance should have a small positive relation with both the percentage of institutional holdings and the amount of institutions investing in the firm which isn't the case here. The social norms effect however seems to be a lot stronger for firms in the sin industries than for the other three industries as not only is there not a compensation effect, but the opposite seems to take place where institutional ownership declines heavily.

So it seems that even though, according to Cai, Jo and Pan (2011), CSR engagement shows a positive effect on firm profitability it doesn't attract large institutional investors and for some industries it even repels them. The fact that the engagement in CSR by these firms shows a positive effect on profitability might even be one of the reasons why a negative effect is found as it could be important for the institutions that they trust the intentions of the firm's behaviour. Because the investors are already skeptic about the engagement of CSR by these types of firms, an increase in profitability will not help with regard to trustworthiness.

To check for the robustness of the results additional CSR measurements have been used. The results of these regressions are shown in table 6. The results are in line with the previously shown results. Most of the coefficients show that CSR barely influences the percentage of shares owned by institutions. There are however, quite some differences between the five different types of CSR. Engagement in CSR that affects the community for example causes investors to invest less (the effect is relatively large compared to the others but still fairly small) in a stock. This could be caused by the fact that the activities of these industries have a negative effect on the community and the engagement in this type of CSR seems to be frowned upon by investors. There are certain types of CSR that do seem to affect investors positively but the effect is rather small. Almost all measures do once again show a fairly large positive effect on the number of institutions.

Table 6: In this table results of regressions are provided using data from 1995-2009 of 2010 stocks. The dependent variables are shown in the second and third column of the first row. Data from all five types of institutions has been used. The seven different CSR measurements that have been used are shown in the first column. The same control variables have been used as in table 5, but only the regression coefficients of the CSR measurements are provided with the t-statistics in parentheses. * Regression is significant at the 0.1 level; ** Regression is significant at the 0.05 level; * Regression is significant at the 0.01 level.**

CSR measure	Percentage of shares owned by institutions	Number of institutions
Total Strengths	**-.0044*****	**28.8407***
	(-1.55)	(10.17)
Total Concerns	**.0010**	**2.2328**
	(0.32)	(0.73)
Community Index	**-.3466***	**641.3601***
	(-6.10)	(8.70)
Diversity Index	**.0679**	**381.0891***
	(1.27)	(9.76)
Employee Relations Index	**-.1691***	**188.8034***
	(-3.71)	(5.11)
Environment Index	**.0383**	**269.3175***
	(0.77)	(5.34)
Product Index	**.1246***	**-387.7065***
	(2.53)	(-6.82)

Because large firms usually have a large amount of investors and the t-statistics of the control variables for size are extremely large for number of institutions I also added a sales scaled by assets ratio to the model but this did not affect the model. Another robustness check is done by regressing the largest and smallest firms separately. The results are shown in tables 7 and 8.

As can be seen in the tables, larger firms do differ from smaller firms to some extent. Larger firms are often more profitable and thus have more investors keeping track of the firm. The number of institutions investing in the firms therefore react a lot more to changes in CSR. The large and small stocks do however both show the same results as earlier with regard to the number of institutions. When looking at the percentage of shares held by institutions the only significant result found is the negative effect of CSR on the percentage of shares held by large institutions. These larger firms are more constrained due to the fact that they are being monitored by institutions more than smaller firms which could explain this negative effect.

Table 7+8: In these tables results of regressions are provided using data from 1995-2009 of two times 1005 stocks. For the first table the 1005 largest firms are used and for the second table the 1005 smallest firms are used. The dependent variable on the left side of the table(1 and 2) is the percentage of shares owned by institutions and the number of institutions on the right side of the table (3 and 4). Data from all five types of institutions has been used. In the columns numbered (1) and (3) the CSRindex measurement is used as the dependent variable and in the columns numbered (2) and (4) the NetCSR measurement is used as the dependent variable. SinCSR is SinDum*CSRindex and SinNetCSR is Sindum *NetCSR. The regression coefficients are provided for each variable with the t-statistics in parentheses. * Regression is significant at the 0.1 level; ** Regression is significant at the 0.05 level; * Regression is significant at the 0.01 level.**

Variable small	(1)=%	(2)=%	(3)=#	(4)=#
CSRIndex	**.4083**		**229.5818***	
	(1.32)		(4.23)	
NetCSR		**.0074**		**3.5577***
		(1.18)		(3.36)
SinCSR	**-1.4256**		**-245.8347**	
	(-1.13)		(-0.63)	
SinNetCSR		**-.0471*****		**-4.4828**
		(-1.73)		(-0.50)

Variable large	(1)=%	(2)=%	(3)=#	(4)=#
CSRIndex	**-. 3417***		**722.9675***	
	(-3.23)		(6.28)	
NetCSR		**-.0045***		**13.9791***
		(-2.14)		(6.32)
SinCSR	**-.0027**		**-1250.882***	
	(-.01)		(-2.55)	
SinNetCSR		**-.0027**		**-29.68565***
		(-0.29)		(-3.21)

Next, the effects of CSR engagement on different types of institutions will be evaluated. As said before, mutual funds and independent investment advisors are less constrained by social norms than banks, insurance companies and other institutional holdings. In table 9 the results of regressions are provided using only institutional data from banks, insurance companies and all other institutional holdings excluding mutual funds and independent investment advisors. In table 10 the results of regressions are provided using only institutional data from mutual funds and independent investment advisors.

Table 9 : In this table results of regressions are provided using data from 1995-2009 of 2010 stocks. The dependent variable on the left side of the table(1 and 2) is the percentage of shares owned by institutions and the number of institutions on the right side of the table (3 and 4). Only institutional data from banks, insurance companies and other institutional holdings has been used. In the columns numbered (1) and (3) the CSRindex measurement is used as the dependent variable and in the columns numbered (2) and (4) the NetCSR measurement is used as the dependent variable. Assets (in millions), sales (in millions), return on equity (percentage), return on assets (percentage), current ratio (current assets divided by current debt), debt to assets ratio, assets^2 (in millions) and sales^2 (in millions), at the end of the previous year, are the control variables used in the regression. The six industry dummy variables have the value 1 if the stock belongs to the corresponding industry. SinCSR is SinDum*CSRindex and SinNetCSR is Sindum *NetCSR. Adjusted R^2s are provided in the last row. The regression coefficients are provided for each variable with the t-statistics in parentheses. * Regression is significant at the 0.1 level; ** Regression is significant at the 0.05 level; * Regression is significant at the 0.01 level.**

	(1)=%	(2)=%	(3)=#	(4)=#
CSRindex	**.1488**		**689.9650***	
	(1.23)		(5.86)	
NetCSR		**-.0021**		**12.6476***
		(-0.93)		(5.86)
SinCSR	**-1.427374***		**-994.4036***	
	(-2.97)		(-2.74)	
SinNetCSR		**-.0278***		**-23.9005***
		(-2.82)		(-3.16)
Assets	**.0000***	**.0000***	**.0237***	**.0234***
	(3.80)	(4.23)	(19.93)	(19.70)
Sales	**.0000***	**.0000***	**-.0046***	**-.0045***
	(-3.08)	(-3.39)	(-3.98)	(-3.82)
ROE	**-.0045**	**-.0047**	**11.0209***	**11.4616***
	(-0.36)	(-0.38)	(2.56)	(2.71)
ROA	**.1563***	**.1595***	**134.6591***	**135.2428***
	(5.25)	(5.33)	(11.63)	(11.73)
Current Ratio	**.0023**	**.0021**	**-4.9015***	**-4.6700***
	(1.23)	(1.14)	(-6.77)	(-6.43)
Debt	**.1542***	**.1538***	**20.4238****	**20.6153****
	(5.01)	(5.01)	(2.13)	(2.13)
Assets*Assets	**.0000***	**.0000***	**.0000***	**.0000***
	(-2.65)	(-2.92)	(-11.91)	(-11.83)
Sales*Sales	**.0000****	**.0000****	**.0000***	**.0000***
	(2.15)	(2.28)	(3.31)	(3.24)
AlcoholDum	**.2162***	**.2133***	**122.41***	**130.9300***
	(4.23)	(4.49)	(3.86)	(4.17)
WeaponsDum	**.1664***	**.1596***	**28.1780**	**29.1073**
	(3.33)	(3.37)	(0.98)	(1.03)
GamblingDum	**.0690**	**.06069**	**-5.4259**	**-3.2755**
	(1.49)	(1.39)	(-0.22)	(-0.14)
OilDum	**-.4253****	**.1815***	**-354.7426****	**81.5875***
	(-2.32)	(4.55)	(-2.45)	(3.31)
BiotechDum	**-.4304****	**.1837***	**-284.7664****	**149.0152***
	(-2.33)	(4.56)	(-1.96)	(5.90)
CementDum	**-.2952**	**.3102***	**-345.8163****	**90.8817***
	(-1.53)	(4.39)	(-2.38)	(3.35)
Adjusted R^2	**0.0588**	**0.0596**	**0.7690**	**0.7683**

When looking at the results in table 9 the CSRindex and the NetCSR for percentage of ownership once again show insignificant results and the R^2 of the models are once again very low. CSR seems to have the same effect on number of institutions as before when using data from all institutional holdings. The sin industries once again show significant highly negative results. Even somewhat larger than in the previous model. This makes sense if the social norms effect holds as these institutions are very constrained by social norms which once again causes the CSR engagement to backfire as compensation does not take place but the opposite.

In table 10 the results of regressions using only data from the less constrained institutions is provided. The explanatory value of the models is a lot lower than that of the previous models and it shows a lot of insignificant results. The CSRindex shows a significant negative effect on the percentage of shares held which could imply that even the less constrained institutions are still somewhat affected by the social norms effect. The effects for the sin industries seem to be a bit more positive but due to the many insignificant results and the low R^2s of the models no conclusive evidence can be given. When using additional CSR measures (the same as those used in table 6) the results do not become more significant. Because of this it's also very hard to conclude about the differences between the two types of institutions due to a lack of enough significant results (mainly for the less constrained institutions).

Table 10: In this table results of regressions are provided using data from 1995-2009 of 2010 stocks. The dependent variable on the left side of the table(1 and 2) is the percentage of shares owned by institutions and the number of institutions on the right side of the table (3 and 4). Only institutional data from mutual funds and independent investment advisors has been used. In the columns numbered (1) and (3) the CSRindex measurement is used as the dependent variable and in the columns numbered (2) and (4) the NetCSR measurement is used as the dependent variable. Assets (in millions), sales (in millions), return on equity (percentage), return on assets (percentage), current ratio (current assets divided by current debt), debt to assets ratio, assets^2 (in millions) and sales^2 (in millions), at the end of the previous year, are the control variables used in the regression. The six industry dummy variables have the value 1 if the stock belongs to the corresponding industry. SinCSR is SinDum*CSRindex and SinNetCSR is Sindum *NetCSR. Adjusted R^2s are provided in the last row. The regression coefficients are provided for each variable with the t-statistics in parentheses. * Regression is significant at the 0.1 level; ** Regression is significant at the 0.05 level; * Regression is significant at the 0.01 level.**

	(1)=%	(2)=%	(3)=#	(4)=#
CSRindex	**-.1953***		**187.0781***	
	(-2.70)		(2.52)	
NetCSR		**.0010**		**4.4736***
		(0.75)		(3.18)
SinCSR	**.1022**		**-102.6122**	
	(0.37)		(-0.49)	
SinNetCSR		**.0001**		**-3.696135**
		(0.02)		(-0.90)
Assets	**.0000***	**.0000****	**.0046***	**.0045***
	(2.46)	(1.99)	(7.87)	(7.69)
Sales	**.0000*****	**.0000**	**.0006**	**.0007**
	(-1.67)	(-1.32)	(0.88)	(1.04)
ROE	**-.0022**	**-.0019**	**6.0874***	**6.2809***
	(-0.43)	(-0.38)	(3.72)	(3.87)
ROA	**.0364***	**.0324***	**32.4726***	**31.9090***
	(3.05)	(2.72)	(6.23)	(6.20)
Current Ratio	**-.0027***	**-.0025***	**-2.7180***	**-2.6080***
	(-2.90)	(-2.75)	(-5.63)	(-5.33)
Debt	**.0007**	**.0001**	**-16.0824***	**15.9977***
	(0.06)	(0.01)	(-3.80)	(-3.83)
Assets*Assets	**.0000***	**.0000****	**.0000***	**.0000***
	(-2.62)	(-2.34)	(-5.15)	(-5.08)
Sales*Sales	**.0000*****	**.0000**	**.0000**	**.0000**
	(1.65)	(1.53)	(0.21)	(0.14)
AlcoholDum	**.01987**	**.0106**	**5.1631**	**7.9450**
	(0.64)	(0.38)	(0.27)	(0.45)
WeaponsDum	**.0286**	**.0231**	**-9.7353**	**-8.7065**
	(0.94)	(0.81)	(-0.60)	(-0.58)
GamblingDum	**-.0134**	**-.0187**	**-14.1630**	**-12.4876**
	(-0.48)	(-0.74)	(-0.89)	(-0.87)
OilDum	**-.0735**	**-.0749**	**3.6276**	**3.2072**
	(-1.25)	(-1.27)	(0.92)	(0.85)
BiotechDum	**-.0770**	**-.0854**	**22.7005***	**19.8914***
	(-1.31)	(-1.45)	(3.92)	(3.38)
CementDum	**.1452**	**.1005**	**-43.6053**	**4.8101**
	(1.23)	(1.58)	(-0.56)	(0.30)
Adjusted R^2	**0.0248**	**0.0213**	**0.3451**	**0.3479**

5. Conclusion

In this paper the effect of CSR engagement on institutional ownership is evaluated for firms operating in the so called controversial industries. The firms in these industries are known to be under a lot of social pressure due to the nature of the firms. This causes some institutions to avoid investing in these types of firms as they do not want to be associated with them. This is also known as the social norms effect. It has been tested whether this effect holds no matter what the firm does with regard to CSR or whether engagement in CSR has a compensation effect for the nature of the firm. The results show that such a compensation effect does not seem to be present. For firms in the Biotech, Cement and Oil industry a non significant negative effect is found for the percentage of institutional ownership. Engagement in CSR by these industries does however attract more institutions to invest in these firms. These institutions seem to be only small institutions though as the percentage of shares owned by these institutions does not increase. The social norms effect seems to hold for these firms as no compensation seems to take place (no positive relation is found). Engagement in CSR for firms in the sin industries (alcohol, tobacco, gambling and weapons) shows a more interesting result. Engagement in CSR for firms in these industries shows large highly significant negative effects on both institutional ownership measures. It seems that the social norms effect is so strong for these industries that when they engage in CSR activities, they don't attract (large) investors but repel them. It could be that institutional holdings distrust their intentions and see it as just another strategic choice to divert the people's attention from their activities, which they do not seem to want to be associated with, causing them to withdraw their investing activities in the firm. The social norms effect holds for both types of controversial industries but the strength of the social norms effect is a lot stronger for the sin industries.

Next it has been evaluated whether the effect differs between the constrained and less constrained institutions. It is hard to find significant evidence of differences between these types of institutions but it is clear that the constrained institutions such as banks and insurance companies show the same effects (if not stronger) as stated above. The results of the less constrained institutions imply a more positive result but no conclusive evidence is found.

In short it seems that engagement in CSR has different effects on the two different types of controversial industries. Engagement in CSR does not show a compensation effect for the nature of the firms and the social norms effect holds. The results in general show barely any effect of engagement in CSR on institutional ownership for firms in the biotech, oil and cement industries while it shows highly negative effects on institutional ownership for firms in the alcohol, tobacco, gambling and weapons industries. The social norms effect is stronger for these last four industries.

Appendix 1

Table 11: List of Strengths and Concerns from the KLD database

Category	Strength Items	Concern Items
Community	Charitable Giving	Investment Controversies
	Innovative Giving	Negative Economic Impact
	Support from Housing	Tax Disputes
	Support for Education	Other Concerns
	Non-US Charitable Giving	
	Volunteer Programs	
	Community Engagement	
	Other Strengths	
Diversity	CEO	Controversies
	Promotion	Non-Representation
	Board of Directors	Board Diversity
	Work-Life Benefits	Other Concerns
	Women and Minority Contracting	
	Employment of the Disabled	
	Gay and Lesbian Policies	
	Other Strengths	
Employee Relations	Union Relations	Union Relations
	No-Layoff Policy	Health and Safety Concerns
	Cash Profit Sharing	Workforce Reductions
	Employee Involvement	Retirement Benefits Concern
	Retirement Benefits Strength	Supply Chain Controversies
	Health and Safety Strength	Other Concerns
	Supply Chain Policies, Programs & initiatives	
	Other Strengths	
Environment	Beneficial Products and Services	Hazardous Waste

	Pollution Prevention	Regulatory Problems
	Recycling	Ozone Depleting Chemicals
	Clean Energy	Substantial Emissions
	Property, Plant, Equipment	Agriculture Chemicals
	Management Systems Strength	Climate Change
	Other Strengths	Other Concerns
Product Quality and Safety	Quality	Product Safety
	R+D Innovation	Marketing Contracting Concern
	Benefits to Economically Disadvantaged	Antitrust
	Access to Capital	Other Concerns
	Other Strengths	

Appendix 2

I borrow this Appendix from Cai, Jo and Pan (2011)

Combined strength and concern scores:

COMMUNITY(i,t) = (sum of all community strength items for firm i at year t minus the sum of all community concern items for firm i at year t plus total maximum possible number of community concern items at year t) divided by (total maximum possible number of community strength items during year plus total maximum possible number of community concern items at year t)

ENVIRONMENT(i,t) = (sum of all environment strength items for firm i at year t minus the sum of all environment concern items for firm i at year t plus total maximum possible number of environment concern items at year t) divided by (total maximum possible number of environment strength items during year plus total maximum possible number of environment concern items at year t)

DIVERSITY(i,t) = (sum of all diversity strength items for firm i at year t minus the sum of all diversity concern items for firm i at year t plus total maximum possible number of diversity concern items at year t) divided by (total maximum possible number of diversity strength items during year plus total maximum possible number of diversity concern items at year t)

EMPOYEE RELATIONS(i,t) = (sum of all employee strength items for firm i at year t minus the sum of all employee concern items for firm i at year t plus total maximum possible number of employee concern items at year t) divided by (total maximum possible number of employee strength items during year plus total maximum possible number of employee concern items at year t)

PRODUCT(i,t) = (sum of all product strength items for firm i at year t minus the sum of all product concern items for firm i at year t plus total maximum possible number of product concern items at year t) divided by (total maximum possible number of product strength items during year plus total maximum possible number of product concern items at year t)

CSR Index = (COMMUNITY + ENVIRONMENT + DIVERSITY + EMPLOYEE + PRODUCT)/5

This calculation is following Hillman and Keim (2001) and Baron, Harjoto and Jo. (2011)

Appendix 3

Regressions using only data from the oil, biotech and cement industries.

Table 12: In this table results of regressions are provided using data from 1995-2009 of 2010 stocks. The first row shows the regression coefficients of a dataset of 1808 stocks from the biotech cement and oil industries. The second row shows the regression coefficients of a dataset of 202 stocks from the alcohol, tobacco, weapons and gambling industries. The dependent variable on the left side of the table(1) is the percentage of shares owned by institutions and the number of institutions on the right side of the table (2). Data from all five types of institutions has been used. The CSRindex measurement is used as the dependent variable. The regression coefficients are provided for each variable with the t-statistics in parentheses. * Regression is significant at the 0.1 level; ** Regression is significant at the 0.05 level; * Regression is significant at the 0.01 level.**

Variable	(1)= %	(2)= #
CSRIndex:	**-.0381**	**857.9055***
Biotech Cement Oil	(-0.33)	(7.46)
CSRIndex:	**-1.6310***	**-106.1165**
Sin industries	(-3.94)	(-0.45)

References

Aupperle, K., Carroll, A. , Hatfield, J. (1985), An Empirical Examination of the Relationship between Corporate Social Responsibility and Profitability, *The Academy of Management Journal*, Vol. 28, No. 2 446-463

Baron, D., Harjoto, M., Jo, H., (2011)The Economics and Politics of Corporate Social Performance, *Business and Politics*, Vol. 13, 1-46

Barraclough, S., Martha, M., (2008), A grim contradiction: The practice and consequences of corporate social responsibility by British American Tobacco in Malaysia, *Social Science & Medicine*, Vol. 66, 1784-1796

Cai, Y., Jo, H., Pan, C., (2011) Doing Well While Doing Bad? CSR in Controversial Industry Sectors, *Journal of Business Ethics*

Coffey, B., Fryxell, G., (1991), Institutional Ownership of Stock and Dimensions of Corporate Social Performance: An Empirical Examination, *Journal of Business Ethics*, Vol. 10, No.6, 437-444

De Colle, S., York, J., (2009), Why Wine is not Glue? The Unresolved Problem of Negative Screening in Socially Responsible Investing, *Journal of Business Ethics*, Vol. 85, 83-95

Epstein, M., Pava, M., (1992), Corporations and the Environment: Shareholders Demand Accountability, *USA Today Magazine*, Vol. 121, 32-33.

Fabozzi, F., Ma, K., Oliphant, B., (2008), Sin Stock Returns, *Journal of Portfolio Management*, Vol. 35, No. 1, 82-94

Graves, S., Waddock, S., (1994), Institutional Owners and Corporate Social Performance, *The academy of Management Journal*, Vol. 37, No. 4, 1034-1046

Hamilton, S., Jo, H., Statman, M. (1993), Doing well while doing good? The investment performance of socially responsible mutual funds, *Financial Analysts Journal*, Vol. 49, No.6

Harjoto, M., Jo, H., (2011), Corporate Governance and Firm Value: The Impact of Corporate Social Responsibility, *Journal of Business Ethics*, Vol. 103, 351-383

Hillman, A., Keim, G., (2001), Shareholder Value, Stakeholder Management, and Social Issues: What's the Bottom Line?, *Strategic Management Journal*, Vol. 22, No.2, 125-139

Hing, N., (2001), Changing the Odds: A Study of Corporate Social Principles and Practices in Addressing Problem Gambling, *Journal of Business Ethics*, Vol. 33, 115–144

Hong, H., Kacperczyk, M., (2009), The price of sin: The effects of social norms on markets, *Journal of Financial Economics*, Vol. 93, 15-36

Jo, H., Harjoto, M., (2012), The Causal Effect of Corporate Governance on Corporate Social Responsibility, *Journal of Business Ethics,* Vol. 106, 53-72

Kempf, A., Osthoff, P., (2007) The Effect of Socially Responsible Investing on Portfolio Performance, European Financial Management, Vol. 13, No. 5, 908-922

Lindgreen, A., Swaen, V., Maon, F., (2009), Introduction: Corporate Social Responsibility Implementation, *Journal of Business Ethics,* Vol. 85, 251-256

Liu, Y., Lu, H., Veenstra, K., (2011), Is Sin Always a Sin? The Interaction Effect of Social Norms and Financial Incentives on Market Participants' Behavior

Mackey, A., Mackey, T., Barney, J., (2007), Corporate Social Responsibility and Firm Performance: Investor Preferences and Corporate Strategies, *Academy of Management Review,* Vol. 32, No.3, 817-835

Mahoney, L., Roberts, B., (2007), Corporate social performance, financial performance and institutional ownership in Canadian firms, *Accounting Forum*, Vol. 31, 233-253

Palazzo, G. Richter, U., (2005), CSR Business as Usual? The Case of the Tobacco Industry, *Journal of Business Ethics*, Vol. 61, 387-401

Pava, M., Krausz, J., (1996) The Association Between Corporate Social-Responsibility and Financial Performance" The Paradox of Social Cost., *Journal of Business Ethics*, Vol. 15, No. 3, 321-357

Renneboog, L., Ter Horst, J., Zhang, C., (2008), Socially responsible investments: Institutional aspects, performance, and investor behavior, *Journal of Banking & Finance*, Vol. 32, 1723-1742

Salaber, J., (2007), The Determinants of Sin Stock Returns: Evidence on the European Market, *Finance International Meeting*

Simerly, R., (1995) Institutional Ownership, Corporate Social Performance, and Firms' Financial Performance, *Psychological Reports,* Vol. 77, 515-525.

Velde, E., Vermeir, W. Corten, F. (2005) "Corporate social responsibility and financial performance", *Corporate Governance*, Vol. 5 No. 3, 129-138

Yoon, Y., Gürhan-Canli, Z., Schwarz, N., (2006),The Effect of Corporate Social Responsibility (CSR) Activities on Companies With Bad Reputations, *Journal of Consumer Psychology*, Vol. 16, No. 4, 377-390