Quantitative Relations between Corporate Social Responsibility Activity and Share Price: Introducing "Nila" Unit

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Abstract

A numerical representation of corporate social responsibility (CSR) was attempted by word counting method in order to find a correlation function between CSR and share price. The methodology included a specific word counting method which was defined as "Nila-unit". A sample test of the methodology conducted over some food companies in Japan yielded a positive correlation between CSR and the share prices.

Keywords: Corporate Social Responsibility, Content Analysis, Japan

1. Introduction

There is a growing awareness that the Corporate Social Responsibility (CSR) issue has certain correlation with the share prices. The idea of CSR is not new as this argument emerged more than 30 years ago (Carroll, 1999). Numerous scholars attempted to clarify the concept, its implementation, measurement and its relation with financial performance of firms. Those researchers examined CSR from various perspectives, used different methods, including wide range of data for a variety of industries. Their effort resulted in multi-dimensional analyses on CSR and its related matters. Nevertheless the definition of CSR is not yet unanimously agreed.

McGuire's (1963) highlighted that corporation has not only economic and legal obligations, but should fulfill other responsibilities to the society which are extended beyond those obligations. CSR is closely related to willingness of company to consider the impact of the company's activities on society (Carroll and Buchholtz, 2006). As society is a wide term, Carroll (1979) categorized expectations of society upon the presence of company into economic, legal, ethical and discretionary expectations. Carroll suggested that the level of CSR engagement can be examined by these domains.

Acknowledged that the society surrounding a company could be divided into some groups of stakeholders, the company is demanded to serve and maintain its mutual relationships with those stakeholders. The idea has led the emergence of stakeholder theory which argued that stakeholders have its legitimate interest in corporations. In the shareholder theory managers focus their services only to shareholders are morally untenable (Donaldson & Preston, 1995).

The concept of Corporate Social Responsibility (CSR) started to receive attention to assess the sustainability level of a company. It makes sense particularly in view of the alleged social issues such as education, welfare and climate change, for instances. The environmental concerns have become real determinant factors for the sustainability of corporations. These non-financial performances are important particularly by institutional investors who screen companies for long-term profitability.

Along with the growth of ownership of mutual funds in the US since the 1970s, small investors had found an access to highly qualified portfolio management (Domini, 2001). Consequently their

influence has been sharpened and the awakened conscience to examine the way in which the corporations invest and generate returns. Today's investors, both small and large tend to prefer sustainable and longer-term growth orientation instead of short-term profits per se by sacrificing society and natural resources (Davis et al., 2006).

The idea of connecting corporate participation in CSR agenda to share prices could motivate the investors to invest accordingly and the managers to behave acknowledged. In other words, practicing CSR may insure a longer-term profitability because current share price will indicate good perceived-performance of investors. Nevertheless managers still ought to determine, whether CSR or corporate financial performance should be prioritized as performance measurement in their daily business due to the increasing cost for practicing CSR which would erode firm's profitability (financial performance). In term of the return period the tolerance factor of the investors is difficult to judge. The question is should the managers disregard long term sustainability to achieve short term returns, vice versa. Such awareness has led many scholars to examine the relationship between corporate CSR activities and its financial performance and revealed various results (Ullmann, 1985; Griffin & Mahon, 1997).

This paper focuses on examining share price movement that might have been caused by the release of CSR information. In efficient market, market would adjust rapidly to new information even within the short period after a formal announcement (Fama et al., 1969). Relevant with this paper, Curran & Moran (2007) used FTSE4Good Index as proxy of good company and associated it with share price as a measurement tool of financial performance. An abrupt jump of share price was observed just after the release of CSR report indicating the market was responding to the CSR report.

To what extent CSR information has been responded by the market was questioned. It leads some scholars applied Corporate Social Disclosure (CSD) term as a branch of studying CSR. CSD is an attempt to examine social and environmental reports issued by companies (Unerman, 2000; Holder-Web et al., 2008). Describing firms' performance on CSR agenda, the reporting forms vary from leaflet, brochure, CEO's statement to annual social and environmental report. The CSR report used in this paper refer to the social and environmental report published by firms annually.

Examining CSR performance based on CSR report is legitimate because firms disclose the information in truthful manners based on a set of private information in their hand and because they are concerned about the assessment by financial market for the voluntary nature of reporting (Darrough, 1993; Fekrat et al., 1996). Care must be taken, however, that the interpretation on the CSR report could be sometimes misleading despite the CSR report themselves are truthful in nature because the researchers who have studied CSR report used different methodologies and/or different time frames (Ullmann, 1985, Cho & Patten, 2007). Some researches proved that under the theory of voluntary disclosure, company's performance on environmental activities has a positive association with the level of discretionary environmental disclosure (Clarkson et al., 2008).

There is substantial growth of investors' behavior to use corporate social and environment report as a screening tool to distinguish 'good' company from 'bad' company (Friedman & Miles, 2001). Recently, the increasing reliability-likelihood of social and environmental report allows researcher to use the report as a proxy to define firm's social performance. There are some common methods as firm's effort to enhance its reliability, first by applying such a guideline for accomplishing and reporting, and secondly by involving third parties to execute social auditing particularly for those activities.

This paper follows previous studies which use social and environmental disclosure as source to assess firm's performance on these themes (Cochran and Wood, 1984; Milne and Adler, 1999). A common method to examine written document or report is content analysis. Study of Smith and Taffler (2000) show that quantitative content analysis toward narrative document was benefited to predict accurately whether firm would against bankruptcy or not in the future. The current report examined CSR report by applying content analysis through the defined words having CSR-related meaning and

used it as a proxy of corporate engagement in CSR agenda. The analyzed data was subsequently used to examine the correlation between CSR and share price.

As a tendency that investors would demand ready-to-use tools to measure corporate CSR (Davis et al., 2006), assessment of social activities performance is valuable to be done as practicing friendly behavior toward social and environmental stakeholder requires sufficient costs. Thus, the basic question is whether The current view is whether the share price performance of the company without CSR activity and that of the company which is practicing CSR activities have similar level of performance in market despite the former company is financially more profitable (Goukasian & Whitney, 2008).

Thus, the paper attempts to explore whether quantitative assessment toward CSR reports does have relationship with share price, as explained earlier. The assumption is frequency of the occurrence particular social and environmental term in the report will be responded positively by investors, and firm's share price will be increased.

In Japan, even though terminology corporate social responsibility seems to be new for most Japan's companies compare to their counterparts in the US and Europe (Tanimoto and Suzuki, 2005), firms have accepted concept of CSR since hundreds years ago as showed by firms' friendly behavior toward society (Fukukawa & Moon, 2009). Recently, its social responsibly behavior and accomplishment of CSR has been reported through CSR reports. Amount of CSR reports is increasing significantly. By November 2010, there are 89 CSR report for fiscal year 2009 for from Japan's companies which conducted based on Sustainability Reporting Guideline released by the GRI. It has took place Japan as the third biggest country with CSR reports, after the US and Spain.

The increasing number of foreign investors in Japan since the 1990s has contributed also to double amount of English version CSR reports. Trading volume data from Tokyo Stock Exchange (TSE) first section illustrate that foreign investor controlled 23.5% of total market capitalization in 2008. It had increased to 26% in 2009, took foreign investor place as the second largest shareholder in TSE just after financial institution which held 32%.

The paper is organized as follows. First section explains previous research and assumption of the research. Second section describes research method that contains illustration of applying content analysis. Third section outlines the result, and the fourth draws conclusion.

2. Research Method
2.1. Content Analysis

This paper uses content analysis for obtain quantitative data from social and environmental reports. Content analysis is a method of gathering categorized data by noting particular item which appear in a written document. As a codifying text method, content analysis is a useful way to provide data for further analysis, either discuss its items qualitatively or counted items used as a raw data for quantitatively research (Riffe et al., 2005). For this aim, Cochran & Wood (1984) used content analysis due to its objectiveness. The subjectivity in the choice of items in the first step of this method however should be admitted as its drawback. The author used content analysis method to collect data from CSR reports which were published by 5 Japanese food companies in 2006-2009.

Utilizing CSR report to assess a firm's performance disclosure is further warranted by the following reasons. The Environment Agency of Japan has published Environmental Reporting Guidelines 2007[1] and the Japan Business Federation (Nippon Keidanren[2]) has created a matrix as an implementation guidance of CSR agenda with strong expectation for being carried out by its members.

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[1] The Environment Agency of Japan provides a good example for conducting business circumstances and regulation particularly in their environmental policy. On this policy, they published many guidelines & plans for ensuring the sustainability of environment maintaining. Particularly, the government also published environmental reporting guideline

The CSR reports as stand-alone reports are publicly downloadable documents from each website of the firms. This widespread distribution and availability of reports allows a free access by stakeholders. Published annually along with financial statement these CSR reports, as outlined by Unerman (2000), offer a regular basis as a snapshot of the management's mindset of CSR agenda in each period.

As a basis of coding, there are several unit analyses such as number of documents, words, pages, sentences, paragraph and also rough percentage of entire document (Unerman, 2000). Despite Milne & Adler (1999) indicated that coded sentences are far more reliable than others, Unerman (2000) outlined:

> "Using sentences as the unit of measurement seems to ignore the possibility that differences in use of grammar might result in two different writers conveying the same message by using a similar number of words and taking up a similar amount of space but using a different number of sentences."

Each measure has its advantages and drawbacks. This research used word as an analysis unit and normalized the number of words found by dividing by the total words of each report. Milne & Adler (1999) also indicated that individual words apparently meaningless as a basis of coding without sentences, even though they admitted that word counting has higher precision than sentence counting. Regarding the repetitiveness of the word found, Krippendorff (2004) outlined that the frequency indicates the importance of the subject viewed by the issuer. Also, highlighting Unerman's (2000) statement that based on assumption of the using content analysis on CSR research is because quantity of disclosure signifies the importance of the item being disclosed, then count how many times a set of certain variables of CSR appears on CSR disclosure is crucial.

Thus, previous study used words as the unit analysis like Holder-Webb et al. (2009) in which then interpreted it into 7-point of Likert scale. Moreover, using word basis also allows to maintain consistency of data and the reliability as well, as the researcher apply similar keywords into other CSR documents without any bias on the interpretation step which is often happened in using sentences as unit analysis.

According to Milne & Adler (1999), content analysis study must concern to reliability that may cause discrepancy between coders and also reliability associated the instrument utilized. Regarding to this, in this present research one coder employed particularly to find and verify words appropriate with defined keywords. Words search engine in Adobe Reader 9 implanted on Microsoft XP is utilized to enable search exact words and maintain the level of instrument reliability at once. Thus principle of stability by which assure that data coding –suited with defined keyword– would be done in the same way over time is fulfilled (p. 239). Thus, the word counting method has a benefit over the sentence interpretation method because it has less room for inviting researcher's subjectivity and at the same the method can screen out any conspicuous intention of the CSR report writers.

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that continues to be revised in a short time. The newest published guideline is being named as Environmental Reporting Guidelines (Fiscal Year 2003 Version). http://www.env.go.jp/en/policy/index.html

[2] Established in August 16, 1946, The Japan Federation of Economic Organization (Nippon Keidanren) has been known as "the prime minister of the business world" because of its position as the nation's most powerful business lobby in Japan. Former Keidanren is representative of big business in Japan, but its membership recently expanded to comprise smaller business and foreign companies and reach total 1,609 members companies and organizations as of the end of May, 2009. The objectives of the establishment are gathering the opinions of businesses & to have their views reflected in the government's economic & other policies.

Keidanren issued the CSR Matrix and its content are based on the "Charter of Corporate Behavior" and the "Implementation Guidance for the Charter of Corporate Behavior" to pursue companies to carry out CSR activities. on the voluntary basis by selecting & prioritizing these elements according to their management philosophies and corporate cultures, their management environments and their business strategies.

The website of this Nippon Keidanren is http://www.keidanren.or.jp/

2.2. Definition of "Nila" Unit

In this study, keywords for CSR activities were derived from a guideline of CSR practice and reporting released by Nippon Keidanren. These CSR related-words were limited to nouns and adjectives only. Verbs used by each company to describe their activities are varies and have more synonym that would cause difficulty for the researchers to run this method in the future. In addition both singular and plural versions and words with both uppercase and lowercase were counted. This procedure is usually done in content analysis relied on assumption that the frequency indicates the importance of the subject (Krippendorff, 2004).

The word counting software used counts words in picture captions and footnotes. Therefore they were also counted as supported by Holder-Webb et al. (2009). For instance, guideline statement for environment issue and community as the stakeholder is: 'measures to counter global warming'. For this guideline, the author picked up words: 'measures', 'global', and 'warming' as keywords on the basis that these words have its appropriateness to reveal CSR activities, particularly for environment cases.

Keidanren guideline might be expanded and implemented into various activities in the level of firm, not only limited to the existing guideline on the matrix. This is because the importance of the particular issue for company might be different. Thus, in this case, the author included words that may not appear in the guidelines, but apparently the company did the activities that were referred to by the words. For example, in the box of employee as company's stakeholder and environment as the issue, Keidanren guidelines mentioned: 'Training & education in environmental issues'. From this sentence, keyword 'training', 'education', 'environmental' and 'issues' are derived. As the terms 'giving training & education in environmental issues' can encompass some certain programs, words 'program', 'programs', 'Program' and 'Programs' were also considered to capture CSR activities. Such words that are apparently remotely related to CSR activities were also counted. For generic words such as 'guideline', 'management', 'procurement', 'communication', 'procedure', 'development', 'database', 'consumer', 'competition', 'product' and so on the author included as CSR related words because they are all used to describe the CSR activity in the CSR reports.

Other 'rule' on determine keywords in this paper is generic words that appear on the Keidanren CSR matrix should be omitted, even though these words are noun and/or adjective, such as 'strict', 'adherence', 'provision', 'appropriate', 'complete' 'establishment', 'clarification', 'requirement' and so on. For example, in a box link business partners and issue of environment, Keidanren mentioned "promotion of eco-conscious business practices (green purchasing, green procurement)", the author picked words 'eco-conscious', 'business', 'practices', 'green', 'purchasing', and 'procurement'. Word of 'promotion' ought to be excluded considering the generic nature of the word.

Counting words may appear too much simplification of a rich and diverse portrays of companies' CSR activities. However by picking up words as opposed to sentences the counting becomes independent from syntax of the sentences in the report. As an example, the word 'consumption' is used in different context in different sentences by Kirin & Kikkoman in their reports as shown in Table 1 below.

Table 1: A sample of Word Counting

Reports	Related Stakeholder	Related Issue	Word on its sentences
Kirin CSR Report 2006	Consumers & Customers Basic principles	Safety & Quality Environment	*"It also explains the harmful effects of alcohol **consumption** on developing brains in particular detail."* *"..consideration for environmental impact in each stage of the life cycle of production, logistics and marketing, **consumption**, recycling and reusing.."* *"handling of empty containers after **consumption**."*
Kikkoman CC	Basic principles	Environment	*"Optimize and reduce energy consumption by consolidating*

Report 2008			*factories.."* *"Step up efforts to reduce or recycle containers and packaging materials under 'Kikkoman's Guidelines for Containers and Packaging' while reviewing their material, volume, usage, and post-**consumption** collection and processing methods'*

Then, the same procedure was applied to others elements within the Keidanren matrix and the all words found were collected. In the end 378 keywords to measure CSR activities were determined. Further, by applying those keywords into 18 CSR reports, Nila-unit of each company were calculated by the equation:

$$\text{Nila Unit} = \frac{\text{Number of CSRness words}}{\text{Total number of words in one document}} \times 100$$

The formula is required to standardize the length of the reports (Smith and Taffler, 2000). Giving a name Nila on the above ratio is to remind the readers of the subjectivity nature in the word counting method employed. However it should also be pointed out that this counting method is reproducible in so far as one follows the definitions of the word counting employed in this paper.

Due to applicability of Adobe Reader and word counting software, this paper use English version CSR reports prepared on pdf. Japanese food companies which published CSR report in English and written version is limited to a few large companies, unfortunately. As confirmed by the study of Holder-Webb et al. (2009) the size of firm is one of factors caused differences in reporting. Thus, apparently that firms which publish CSR reports are well-established corporate and have particular motives to disclose such social and environmental information. Some of the reports have been locked. The protected and secured CSR reports of some companies had to be excluded from samples because the word counting could not work upon those reports. In view of the relevance to the recent trends the choice of the reports was limited to 2006 or newer. Due to opt to pick food companies instead of other industries, the author do not mention certain reason, beside this research is a preliminary that will be extended into other industries. Table 2 lists the reports utilized in the current research.

Table 2: CSR report of Japanese food companies used

No	Name of firms	Name of Reports
1	Kikkoman	Kikkoman Group Corporate Citizenship Report 2008
2	Kikkoman	Kikkoman Group Corporate Citizenship Report 2007
3	Kikkoman	Kikkoman Group Corporate Citizenship Report 2006
4	Ajinomoto	Ajinomoto Group CSR Report 2009
5	Ajinomoto	Ajinomoto Group CSR Report 2008
6	Ajinomoto	Ajinomoto Group CSR Report 2007
7	Ajinomoto	Ajinomoto Group CSR Report 2006
8	Asahi Breweries	Asahi Breweries Group Corporate Social Responsibility Report 2009
9	Asahi Breweries	Asahi Breweries Group Corporate Social Responsibility Report 2008
10	Asahi Breweries	Asahi Breweries Group Corporate Social Responsibility Report 2007
11	Asahi Breweries	Asahi Breweries Group Corporate Social Responsibility Report 2006
12	Kirin	The Kirin Group Corporate Social Responsibility Report 2009
13	Kirin	The Kirin Group Corporate Social Responsibility Report 2007
14	Kirin	The Kirin Group Corporate Social Responsibility Report 2006
15	Nisshin Seifun	Nisshin Seifun Group Social & Environmental Report 2009
16	Nisshin Seifun	Nisshin Seifun Group Social & Environmental Report 2008
17	Nisshin Seifun	Nisshin Seifun Group Social & Environmental Report 2007
18	Nisshin Seifun	Nisshin Seifun Group Social & Environmental Report 2006

As seen in the table 2 above, the names of CSR reports vary from CSR Report, Corporate Citizenship Report, to Social and Environmental Report but essentially they refer to same

interpretation. And for convenience of reference in this paper, word of CSR reports should refer to those reports.

Table 3: Generate Nila-unit

No	Companies	Samples	CSR words	Number of total words	Nila units
1	Kikkoman	2008	3,617	24,192	14.951
2	Kikkoman	2007	3,904	27,740	14.074
3	Kikkoman	2006	3,705	25,000	14.820
4	Ajinomoto	2009	2,428	19,943	12.175
5	Ajinomoto	2008	2,379	20,939	11.362
6	Ajinomoto	2007	4,377	28,050	15.604
7	Ajinomoto	2006	4,876	32,334	15.080
8	Asahi Breweries	2009	4,235	32,130	13.181
9	Asahi Breweries	2008	2,670	19,636	13.597
10	Asahi Breweries	2007	4,375	29,350	14.906
11	Asahi Breweries	2006	4,409	29,838	14.776
12	Kirin	2009	1,922	14,759	13.023
13	Kirin	2007	4,223	31,638	13.348
14	Kirin	2006	4,037	28,189	14.321
15	Nisshin Seifun	2009	746	5,369	13.895
16	Nisshin Seifun	2008	822	4,854	16.934
17	Nisshin Seifun	2007	929	7,884	11.783
18	Nisshin Seifun	2006	625	4,945	12.639

Generated Nila-unit from the previous step was used as a numerical representation of firm's CSR engagement. In some extent, the magnitude of Nila-unit number reflects the high intensity of the disclosure of certain keywords. This indicates that on the report, company opts to use keywords which have implied on the Nippon Keidanren CSR matrix rather than other words to inform their engagement in CSR. In other words, this method could reveal to some extent of firm's adherence to the matrix. As noted earlier, firm adherence to implement CSR concept will be rewarded by financial market, marked by the rising of firm's share price. The next step explains the methods to outline whether this assumption is true.

2.3. Share Price

In order to see whether or not an award of financial markets on corporate social performance disclosure is existed, this paper applies market to book value ratio as a proxy for share price. The market to book ratio is presented below.

$$\text{Market to book value} = \frac{\text{Share price}}{\text{Book value per share}}$$

This paper applies assumption that price of share is equal to the present value of future earning from stock (including dividends) expected by investors (Penman, 1996). Thus, application of market to book value will be benefited to assess future profitability of firm, particularly refer to its ability as indicator of earning growth (p. 256). The result of calculating market to book value is presented in the Table 4. High number of the ratio may indicate high expectation of investors for firm's future profitability.

Then the time or period of measuring the share prices were determined based on the timing of the publication of the CSR reports. The reporting period of each company in this research vary as being portrayed in the Table 4. As for the book value the value at the end of the fiscal year was taken.

It was recognized that the precise publication dates of a month were not always available. This paper therefore took an average of high and low share prices in a month following the month of issuing CSR report. For example, Kikkoman Group Corporate Citizenship Report 2008 was issued in June

2008 to cover activities for the fiscal year 2008, which is from April 1st 2007 to March 31st 2008. In the following month of CSR report release, the high price of Kikkoman's share was recorded at 1,343.00 yen per share and the low price was 1,136.00 yen per share. Hence the average of the month was 1,239.50 yen/share as shown in Table 4. This share price was divided by the year end book value to obtain the market to book ratio for Kikkoman.

Table 4:   Determining Share Price

| No	Company	Year report	Issued	FY coverage	FY time range	Market value	Book value/share	Market to Book Ratio
1	Kikkoman	2008	Jun-08	2008	Apr 1, 2007–Mar 31, 2008	1,240	890.87	1.39
2		2007	Jul-07	2007	Apr 1, 2006–Mar 31, 2007	1,543	899,53	1.72
3		2006	Jun-06	2006	Apr 1, 2005–Mar 31, 2006	1,477	875.61	1.65
4	Ajinomoto	2009	Aug-09	2008	Apr 1, 2008–Mar 31, 2009	917	870.20	1.05
5		2008	Aug-08	2007	Apr 1, 2007–Mar 31, 2008	1,062	921.70	1.16
6		2007	Jul-07	2006	Apr 1, 2006–Mar 31, 2007	1,403	884.82	1.59
7		2006	Sep-06	2005	Apr 1, 2005–Mar 31, 2006	1,321	861.19	1.53
8	Asahi Breweries	2009	Jul-09	2008	Jan 1 – Dec 31, 2008	1,569	1,216.96	1.29
9		2008	Jun-08	2007	Jan 1 – Dec 31, 2007	1,919	1,127.61	1.70
10		2007	Jul-07	2006	Jan 1 – Dec 31, 2006	1,795	1,072.65	1.67
11		2006	Jun-06	2005	Jan 1 – Dec 31, 2005	1,642	995.97	1.65
12	Kirin	2009	Jun-09	2008	Jan 1 – Dec 31, 2008	1,344	1,015.45	1.32
13		2007	Jun-07	2006	Jan 1 – Dec 31, 2006	1,785	1,096.86	1.63
14		2006	Jun-06	2005	Jan 1 – Dec 31, 2005	1,729	1,035.19	1.67
15	Nisshin Seifun	2009	Sep-09	2008	Apr 1, 2008–Mar 31, 2009	1,233	1,081.94	1.14
16		2008	Oct-08	2007	Apr 1, 2007–Mar 31, 2008	1,070	1,039.74	1.03
17		2007	Aug-07	2006	Apr 1, 2006–Mar 31, 2007	1,067	1,073.18	0.99
18		2006	Aug-06	2005	Apr 1, 2005–Mar 31, 2006	1,209	1,046.77	1.15

It is worthy to note that the research aim is to explore whether there is a link between CSR with share price, through application of Nila-unit as a new proxy for CSR. In the circumstance of introducing Nila-unit, this paper involves exploration study to see the relationship between the two. Thus, the author do not neither affirm hypothesis statement nor testing a model. Due to the limited number of samples, then perform the hypothesis testing would yield less meaningful significance. Simple scatter plot will take place to see the relationship. Further appropriate statistical procedure to study the relationship will be accomplished and be presented in the next article by involving larger number of samples.

3. Result and Discussion
3.1. Correlation between Nila-Unit and the Share Prices

The market to book value was then attempted to see the correlation between them by plotting Nila-unit against the corresponding market to book values. As aforementioned, the objective of the paper is to explore whether such correlation between Nila-unit and share price is existed. To see the link, the author apply simple scatter plot diagram. As shown in Graph 1 below, apparently the relationship between Nila-unit and share price is existed.

Graph 1: Scatter plot of Nila-unit and share prices
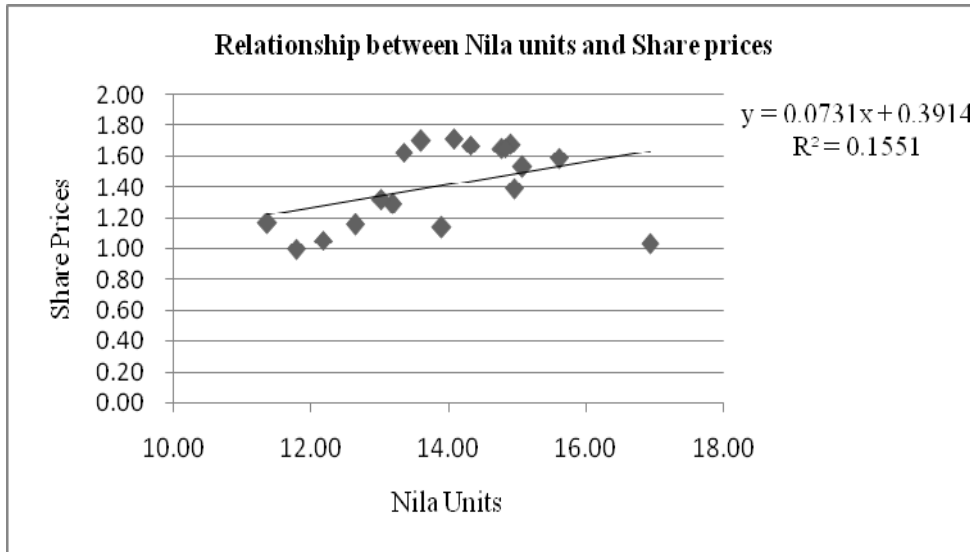
The positive slope suggests a positive contribution of CSR, as measured by Nila-unit, toward the share prices. The coefficient of determinant (R^2) generated from Microsoft Excel scatter plot shows 0.155 suggests about 15.5% of the share prices can be explained by the CSR activity. Nila-unit contributed by 7.3% to share price. Refer to influence of other determinant factors for the share prices, for example, the future prediction on the relevant supply and demand, the strategic thrust of the company, the future paradigm changes and so on, the coefficient of determinant likely is sufficient to give a chance to further study on the link between Nila-unit, as a proxy of firm's engagement on CSR, and share price.

This research follows study of Smith and Taffler (2000) that narrative disclosures contain information and applying content analysis to them would be useful to assess firm survivability. It should be acknowledged that counting words manually seems to take time. However, due to its simplicity, less subjectivity and applicability of automatic computer coding of text, assessing firm's social and environmental performance through CSR report would provide advantages.

3.2. Other Report-Based Measurement of CSR Activities

The idea to examine CSR activities from CSR reports has been employed by Nippon Foundation which releases Canpan CSR Plus 3 since 2006. Canpan office conducts research based on company's environmental report and CSR report. They have a set of categories and give scores from 1-4 in each of the category and total the scores to represent the score for that company for a given year. Although it is a different method from the current paper the end result is that corporate CSR is numerically represented by the Canpan method as well.

We have therefore tested the correlation between Canpan numbers against the share prices as defined for the same companies chosen for the current paper. A vaguely positive correlation between Canpan numbers and the share prices were obtained with the R^2 at 0.0002. The result suggests that Canpan's numerical representation may not be as useful as the word counting method adopted by the current paper for the purpose of correlating with share prices for these companies.

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[3] Nippon Foundation operates Canpan CSR Plus, a participation-oriented community site which is available for all people including NPOs, NGOs and aid organizations. Canpan provides mechanism that bridging communications between companies & citizen, by giving a score to companies individually. Score is given based on assessing company's reports on CSR activities. There are three basic criteria represent Japanese specific culture and value: *Seken-yoshi* (good for society), *Urite-yoshi* (good for seller) and *Kaite-yoshi* (good for buyer). The website of the Canpan CSR Plus is http://canpan.info/csr_en/

Graph 2: Scatter plot of Canpan scores and share prices
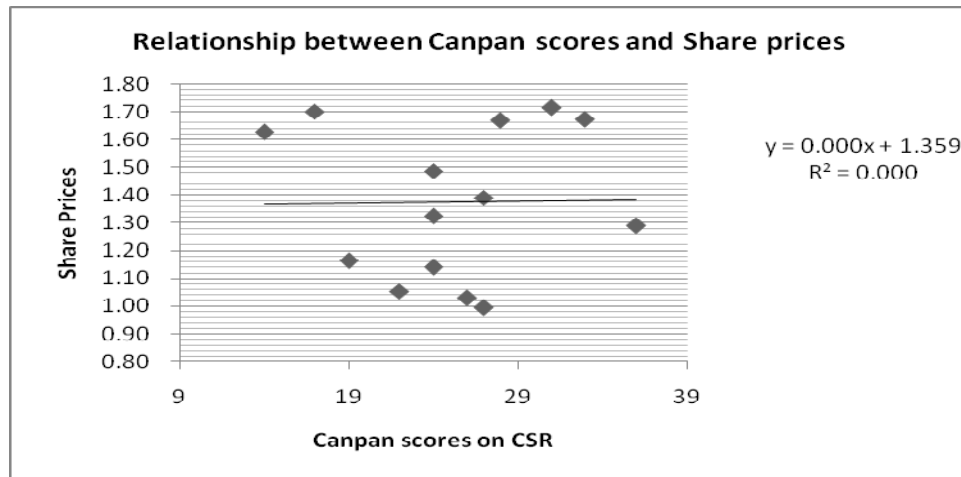
4. Conclusion

An attempt was made to obtain a numerical representation on the CSR commitment of a corporation in order to assess the correlation between the corporate CSR and the share prices. The current paper utilized word counting method with the choice of the word based on Keidanren's guideline. In order to salvage the maximum CRS commitment in the CSR report the author introduced certain rules for the word counting and thereby the ratio against the total words in a given CSR report was termed "Nila-unit" to avoid any confusion.

Thus obtained Nila-unit and the share prices of the following month after the CSR report release were plotted for some food companies in Japan. The plotting showed a positive contribution of the CSR activity by the companies toward the share prices.

Since the above result is based on the limited number of samples a generalization at this stage is not warranted, however, the current paper provided a potential way forward for a numerical representation of CSR activity of a corporation through the word counting method (Nila-unit) and hence force a mathematical analysis on the correlation between CSR activity and the share price.

References

[1]   Carroll, A. B. and Buchholtz, A. K., 2006. "Business and society: Ethics and stakeholder management", *Prentice Hall Inc*., New York.
[2]   Carroll, A. B. 1999. "Corporate Social Responsibility: Evolution of a Definitional Construct", *Business and Society*. 38 (3), pp. 268-295.
[3]   Carroll, A. B. 1979. "A Three-Dimensional Conceptual Model of Corporate Performance", *Academy of Management Review* 4, pp. 497-505.
[4]   Cho, C. H. and Patten, D. M., 2007. "The role of environmental disclosures as tools of legitimacy: A research note", *Accounting, Organizations and Society* 32 (7-8), pp. 639-647.
[5]   Clarkson, P. M., Li, Y., Richardson, G. D. and Vasvari, F. P., 2008. "Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis", *Accounting, Organizations and Society* 33, pp. 303-327.
[6]   Cochran, P. L. and Wood, R. A., 1984. "Corporate Social Responsibility and Financial Performance", *The Academy of Management Journal* 27 (1), pp. 42-56.
[7]   Curran, M. M. and Moran, D., 2007. "Impact of the FTSE4Good Index on firm price: An event study", *Journal of Environmental Management* 82 (4), pp. 529-237.

[8]   Darrough, M. N., 1993. "Disclosure policy and competition: Cournot vs. Bertrand", *The Accounting Review* 68 (3), pp. 534-561.

[9]   Davis, S. M., Lukomnik, J. and Pitt-Watson, D., 2006. "The new capitalist: How citizen investors are reshaping the corporate agenda", *Harvard Business School Publishing*, USA.

[10]   Domini, A., 2001. "Socially Responsible Investing: Making a difference and making money", *Dearborn Trade*, Chicago, USA.

[11]   Donaldson, T. & Preston, L. E., 1995. "The stakeholder theory of the corporation: Concepts, evidence and implication", *The Academy of Management Review* 20 (1), pp. 65-91.

[12]   Fama, E. F., Fisher, L., Jensen, M. C. and Roll, R., 1969. "The adjustment of stock prices to new information", *International Economic Review* 10 (1),pp. 1-21.

[13]   Fekrat, A. M., Inclan, C. and Petroni, D., 1996. "Corporate environmental disclosures: Competitive disclosure hypothesis using 1991 annual report data", *The International Journal of Accounting* 31 (2), pp. 175-195

[14]   Friedman, A L. & Miles, S., 2001. "Socially responsible investment and corporate social and environmental reporting in the UK: An exploratory study", *The British Accounting Review* 33 (4), pp. 523-548.

[15]   Fukukawa, K. and Moon, J., 2004. "A Japanese model of Corporate Social Responsibility? A study of website reporting", JCC 16. Greenleaf publishing.

[16]   Goukasian, L. and Whitney, L. K., 2008. "Corporate Socially Responsible Firms Perform Well! Evidence from Financial and Operating Performances", Electronic copy available at: http://ssrn.com/abstract=972649

[17]   Griffin, J. J. and Mahon, J. F., 1997. "The Corporate Social Performance and Corporate Financial Performance Debate: Twenty-Five Years of Incomparable Research", *Business and Society* 36 (1), pp. 5-31.

[18]   Holder-Webb, L., Cohen J. R., Nath, L. and Wood, D., 2009. "The supply of Corporate Social Responsibility Disclosure among US Firms", *Journal of Business Ethics* 84, pp. 497-527.

[19]   Krippendorff, K., 2004. "Content Analysis An Introduction to its Methodology", *Sage Publication, Inc.*, USA.

[20]   McGuire, J. B.; Sundgren, A. and Schneeweis, T., 1988. "Corporate Social Responsibility and Firm Financial Performance", *Academy of Management Journal* 31 (4), pp. 854-872.

[21]   Milne, M. J. and Adler, R. W., 1999. "Exploring the Reliability of Social and Environmental Disclosure Content Analysis", *Accounting Auditing & Accountability Journal* 12 (2), pp. 237-256.

[22]   Riffe, D., Lacy, S. and Fico, F. G., 2005. "Analyzing media messages: Using quantitative content analysis in research". Second edition. *Lawrence Erlbaum Associates, Inc*. New Jersey.

[23]   Smith, M. and Taffler, R. J., 2000. "The chairman's Statement: A content analysis of discretionary narrative disclosure", Accounting Auditing & Accountability Journal 13 (5), pp. 624-646.

[24]   Tanimoto, K. and Suzuki, K., 2005. "Corporate social responsibility in Japan: Analyzing the participating companies in Global Reporting Initiative", Working paper 208.

[25]   Ullmann, A. A., 1985. "Data in Search of a Theory: A Critical Examination of the Relationships among Social Performance, Social Disclosure and Economic Performance of US Firms", *Academy of Management Review* 10 (5), pp. 340-357.

[26]   Unerman, J., 2000. "Methodological issues: Reflections on quantification in corporate social reporting content analysis", *Accounting, Auditing and Accountability Journal* 13 (5), pp. 667-680.