

## Article

# Relationship between Corporate Sustainability Management and Sustainable Tax Strategies

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**Abstract:** This study analyzed the relationship between the environmental, social, and governance (ESG) assessment results of the Korea Corporate Governance Service, which evaluates the sustainability management levels of Korean companies and the variability in the five-year cash effective tax rates, a proxy for sustainable tax strategies. Corporate sustainability management allows the continuation of businesses that consider environmental protection, social contribution, and ethical management, as well as short-term financial performance. We expect these companies to prioritize sustainable tax strategies that ensure the long-term maintenance of the tax strategy results. Using a sample of firms listed in the Korean securities market during the 2011–2017 period, we adopted a two-way clustered regression model by a firm and year and established a research model with reference to previous studies and tax strategies. We found a significant negative association between excellent ESG ratings and the variability of cash effective tax rates, as well as between the implementation of ESG assessments and the variability of cash effective tax rates. This result indicates that companies with excellent corporate sustainability management strengthen their sustainable tax strategies and that companies become more interested in sustainable tax strategies after implementing ESG assessments. This study sheds light on the relationship between corporate sustainability management and sustainable tax strategies, helping improve our understanding of the impact of corporate sustainability management on sustainable tax strategies.

**Keywords:** corporate sustainability management; environmental, social and governance (ESG); sustainable tax strategies; variability of cash effective tax rates



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## 1. Introduction

Since the 2000s, “corporate sustainability management” has emerged as a key topic for companies worldwide. Sustainability management refers to the pursuit of corporate sustainability by comprehensively reflecting the economic, environmental, and social responsibilities in the management activities of companies [1]. It is based on the perception that a company cannot survive in the long term if it only pursues short-term profits and fails to fulfill its environmental and social responsibilities.

This study empirically analyzed whether a company's sustainability management activities affect its sustainable tax strategy. Most of the research on the relationship between corporate sustainability management, or corporate social responsibility (Corporate social responsibility (CSR) can be defined as activities based on the return of profits to society and ethical and environmental responsibility, and Corporate sustainability management (CSM) is the application of CSR to management and enhances shareholder and corporate value by minimizing risks associated with management while making efforts for continuous development in the environment, economy, and society—the two terms are used interchangeably due to the similarity in practical content), and corporate tax behavior, is from a tax-avoidance perspective and shows inconsistent results. If paying taxes is considered a fulfillment of social responsibility, then it is more likely that companies that carry out

responsible CSR activities would refrain from excessive tax avoidance [2]. On the one hand, tax payments and CSR are complementary [3]. If an entity uses CSR activities as part of a risk management strategy that can protect the entity, it can manage its CSR reputation by expanding CSR activities to reduce the expected costs associated with aggressive tax avoidance [4]. In this case, tax payments and CSR will act as substitutes, and CSR activities will offset negative public perceptions of events such as fraud and environmental disasters [3]. Contrary to these two views, there is also a theory that a company's participation in CSR activities, such as lowering its capital costs through CSR, is aimed at maximizing shareholder wealth and that CSR and tax avoidance are not related [5–7]. These prior studies are based on the traditional view of tax minimization of corporate tax strategies.

However, recently, Scholes et al. [8] have suggested that tax minimization may not be an effective tax strategy. They argue that because tax-related transactions can incur non-tax costs as well as taxable costs, an effective tax strategy must take into account other factors that increase the firm's value. In this respect, McGuire et al. [9] suggest a sustainable tax strategy as an alternative tax strategy, which defines sustainable tax strategies not as one that minimizes the short-term tax burden but as one that maintains tax performance without major changes in the long-term effective tax rate. In practice, companies consider the risks of tax investigations to determine the optimal level of the tax burden and try to maintain it in the long term. We are therefore interested in the effects of corporate sustainability management on sustainable tax strategies.

As mentioned earlier, most preceding studies on the factors determining a corporate's tax burden or tax strategy examine the financial characteristics of the entity like firm size, debt ratio, and financial performance, taking a short-term perspective of tax minimization, such as tax avoidance. Few studies consider the non-financial nature of corporate sustainability management. Corporate sustainability management can be defined as a management activity to create long-term stakeholder value by carrying out non-financial activities that focus on environmental and social responsibility and governance. In other words, a company takes the lead in environmental protection such as resource conservation, recycling promotion, and environmental protection of water resources and engages in social contribution activities such as supporting the socially disadvantaged, creating an equal workplace culture for men and women, improving the working environment, and considering social safety. It refers to ethical management such as compliance and transparent business operation. It means that the company can continue to grow only when these activities are put into practice.

Adopting sustainable business activities means that companies must consider non-financial activities such as environmental protection, social contribution, and ethical management, in addition to financial performance to increase a firm's long-term value. These companies are more likely to focus on sustainable tax strategies that they can sustain for a long time [9] rather than on short-term tax minimization. Therefore, we expect that sustainability management activities will strengthen sustainable tax strategies.

This study investigated the impact of corporate sustainability management on sustainable tax strategies. Corporate sustainability management is measured by the Environment, Social, and Governance (ESG) ratings of the Korea Corporate Governance Service (KCGS). The ESG evaluation of the KCGS is the most used index to evaluate the level of sustainable management activities in Korea. It has evaluated the level of corporate sustainability management since 2011 and gives seven grades (S, A+, A, B+, B, C+, and C) in three areas: environment protection, social contribution, and governance. Sustainable tax strategies are measured by the coefficient of variation of the cash-effective tax rate following the methodology of McGuire et al. [9]. This study expected that sustainable management activities will enhance sustainable tax strategies. Therefore, it was expected to have a significant positive relationship between the ESG ratings by the KCGS and the coefficient of variation of the cash-effective tax rate.

In summary, the purpose of this study was to analyze the impact of sustainable management activities such as environmental protection, social contribution, and ethical

management for a company to survive as a going concern among various factors that determine a company's tax strategy. This empirically verifies whether a company considers not only financial information but also non-financial information when selecting a tax strategy.

The remainder of the article is organized as follows. Section 2 reviews the related literature and develops testable hypotheses. Section 3 discusses this research design. Section 4 presents the empirical results of the study. Finally, Section 5 concludes the study.

## 2. Literature Review and Hypothesis Development

Corporate sustainability management is an approach that incorporates non-financial aspects, such as ethical, social, and environmental considerations, into the management of the firm. Leading global companies, for example, General Electric and the Ford Motor Company, are not only concerned with environmental management but also with trying to fulfil their social and economic responsibility through transparency as they strive to adapt to the new paradigm of corporate sustainability management [10]. Companies are expected to take the lead in protecting the environment, supporting the socially disadvantaged, creating an equal workplace for men and women, and fully complying with laws and ethics.

Corporate sustainability management are known to affect corporate financial performance and corporate value. Kim [11] states that corporations should establish a continuous and productive relationship with all stakeholders (e.g., shareholders, customers, employees, and local communities) through corporate sustainability management, thereby, contributing to short- and long-term profitability by enhancing brand image, creating a collaborative labor-management culture, and providing more investment opportunities based on stable profitability and stronger customer relations. Furthermore, corporate sustainability management increases long-term corporate value through improvement in R&D investment, governance, and employee welfare. Tsoutsoura [12] analyzed the correlation between sustainability management performance and profitability and found positive relationships with return on assets, sales, and capital. Oh and Kang [10] also reported a positive relationship between sustainability management activities and corporate value.

In addition, prior studies have demonstrated that corporate sustainability management reduces earnings adjustments and tax avoidance. Kim et al. [13] found that the more ethical companies fulfil their social responsibilities the less they engage in earnings management. Ki [14] reported that companies engaging in more social responsibility activities have lower levels of tax avoidance and fewer negative effects of tax avoidance on corporate value. Lee and Kim [15] analyzed the relationship of corporate sustainability management to earnings quality, tax avoidance, and corporate value. Their empirical analysis results indicate that companies that are actively engaged in sustainability management show higher earnings persistence and lower tax avoidance.

Although corporate tax strategies are the result of many interrelated managerial decisions, previous studies have focused mainly on tax avoidance. This implicitly assumes that the main purpose of tax strategy is to minimize corporate tax costs. Since earnings after taxes are regarded as actual benefits, there is an incentive for companies to reduce their tax costs to maximize their after-tax profits [16]. However, Scholes et al. [17] argue that an effective tax strategy should consider other factors that affect company's value because tax-related transactions generate not only tax costs but also non-tax costs. Therefore, the tax strategy of a company does not necessarily mean only near-term tax minimization. In practice, sustainability is an important component of a firm's tax strategy. If companies seek only the minimization of tax costs, they may increase the volatility of tax payments and increase the possibility of an investigation by tax authorities. Schmidt [18] suggests that management dislikes drastic changes in profits from tax activity. Therefore, many companies try to determine and maintain the optimal sustainable level of tax burden rather than strict tax minimization [19].

McGuire et al. [9] define a sustainable tax strategy as one that focuses on maintaining the performance of tax avoidance. The authors indicate that a tax strategy focused on sustainability is meant to ensure consistent tax performance over a long period of time,

rather than absolute tax savings. As a result, firms strive to achieve tax outcomes where the effective tax rate does not change significantly over the long term. Their analysis shows that firms with a sustainable tax strategy achieve higher earnings before tax (EBT), cash flows, and accruals than control firms. These empirical results indicate that sustainable tax strategies provide useful information for investors to assess earnings persistence, since it reflects management's expectations of future profits.

Neuman et al. [20] examined whether financial performance uncertainty decreases and/or transparency increases in firms that adopt sustainable tax strategies, as such a strategy seeks to reduce tax costs under conditions that control the uncertainty of tax and other performance. Their analysis shows that sustainable tax strategies are positively related to corporate transparency, such as good governance and internal controls. In addition, firms that adopt sustainable tax strategies show higher Altman's Z scores, returns on assets, free cash flows and operating cash flows, and lower operating cost volatilities.

Previous research considered various factors such as corporate size, the financial ratio, and characteristics of operating activities as determinants of the corporate tax burden. Gupta and Newberry [21] argue that profitability, debt ratio, and capital intensity are related to a wide range of tax strategies. Kim and Jeong [22] have reported empirical evidence that tax avoidance behavior increases with firm size and amount of earnings before tax and decreases with debt ratio. The authors interpret the results to mean that financial characteristics may affect the tax avoidance behavior of the firm. Koh et al. [23] suggest that the likelihood of tax avoidance has a positive relationship with the tax burden level and a negative relationship with the tax benefit level. Most previous studies analyze tax-related strategies or decisions with respect to the ability of the firm to engage in tax avoidance behaviors. However, recent studies adopt an efficient tax management perspective, such as the balance between tax and non-tax costs. Further, we investigated whether a company's tax management strategy is related to sustainability management activities. The traditional view is that tax minimization that reduces tax costs is the goal of corporate tax strategies. However, Scholes et al. [17] argue that firms must balance tax minimization and profit maximization to minimize tax and non-tax costs, rather than the ultimate goal of an effective tax strategy. In other words, an efficient tax strategy should consider other factors together to maximize corporate value. Phillips [24] also reported that low effective tax rates mean tax savings but not necessarily maximized post-tax earnings, while Mills [8] showed that the greater the difference in reported earnings, the greater the likelihood the tax investigation. Because a company cannot continue to take a tax minimization strategy, it will try to reduce the risk of tax avoidance and increase its corporate value by maintaining a constant level of tax avoidance for a long period. McGuire et al. [9] define sustainable tax strategies as those focusing on maintaining the outcome of tax avoidance for a long time. A tax strategy focusing on sustainability represents an alternative aspect of strategic tax planning by maintaining a consistent tax performance over a long period of time rather than an absolute level of tax reduction.

The practice of sustainability management (ESG management) has gained acceptance since the 2000s. In Korea, companies have recently published their own sustainability reports, describing their efforts on environmental protection, social contribution, and ethical management, prompting us to analyze corporate tax management strategies from a sustainability perspective. We expect that the tax strategies of sustainably managed companies will consider various factors to maximize corporate value, as Scholes et al. [17] argue, and maintain long-term tax avoidance, as McGuire et al. [9] define, rather than focusing only on short-term tax minimization. In addition, according to the preceding research, the result of the company's sustainability management activity is related to the result of sustainable tax strategies. Lee and Kim [15] found that firms with high sustainability management activities had better earnings quality than those without, while McGuire et al. [9] find that the higher sustainable tax strategies, the higher the persistence of earnings. Further, Neuman et al. [20] reported that firms with sustainable tax strategies have better governance, internal control, and corporate performance, such as return on assets,

than other firms. Therefore, we established the following hypothesis to analyze the effects of corporate sustainability management on sustainable tax strategies. In addition, sub-hypotheses from H1.1 to H1.3 are presented for each ESG evaluation category that evaluates sustainability management activities as environment protection, social contribution, and governance.

**Hypothesis (H1).** *Corporate sustainability management is positively associated with sustainable tax strategies.*

**Hypothesis (H1.1).** *In corporate sustainability management, environment protection is positively associated with sustainable tax strategies.*

**Hypothesis (H1.2).** *In corporate sustainability management, social contribution is positively associated with sustainable tax strategies.*

**Hypothesis (H1.3).** *In corporate sustainability management, governance is positively associated with sustainable tax strategies.*

### 3. Research Design

#### 3.1. Description of the Sample

We analyzed companies listed on the Korea Stock Exchange with ESG assessment grades from 2011 to 2017, as ESG assessment began in 2011. We collected ESG assessment grades from the website of KCGS by hand, and tax paid in cash was manually collected from the Data Analysis Retrieval and Transfer System (DART). Financial data were used from the TS-2000 database provided by the Korea Listed Companies Association. In order to consider the economic environment and the uniformity of data, data that were not for the December settlement or that belonged to the financial industry were removed. After removing outliers, the final sample size, shown in Table 1, included 1670 firm-year observations.

**Table 1.** Sample selection.

Category	Obs.
Firms listed on the KOSPI market from 2011 to 2017	6436
Firms without December fiscal year, financial industry	(1662)
Firms without the necessary financial data or a cash effective tax rate for five consecutive years	(2624)
Firms without ESG ratings	(425)
Outliers (if the studentized residual value is 2.5 or higher)	(55)
Total	1670

Table 2 presents 1670 sample observations by year. This table shows the annual distribution of observations and a gradual increase from 187 in 2011 to 263 in 2017.

**Table 2.** Sample distribution of the number of firms by year.

Year	2011	2012	2013	2014	2015	2016	2017	Total
Obs.	187	226	220	244	264	266	263	1670
Percent	11.2%	13.5%	13.2%	14.6%	15.8%	15.9%	15.7%	100.0%

#### 3.2. Measurement of Variables

##### 3.2.1. Sustainable Tax Strategies

Sustainable tax strategies (SUSTAIN) measure the volatility of the long-term performance of tax avoidance and use the coefficient of variation in cash effective tax rates, as in McGuire et al. [9]. Specifically, the coefficient of variation is the standard deviation of the



annual cash effective tax rate divided by the absolute value of the mean for five years. Many previous studies use this measure to assess the degree of volatility in profits and cash flows [25,26]. If the coefficient of change in the annual cash effective tax rate (CASH ETR) is small for the five years  $t$  through  $t-4$ , then we can interpret the firm's tax strategy as continuous. The cash effective tax rate (CASH ETR) is the amount of corporate tax payment divided by pre-tax earnings.

$$\text{SUSTAIN} = \frac{\sqrt{(\sum_{t=1}^N \{\text{CASH ETR}_t - \text{avg.CASH ETR}_t\}^2 / N)}}{\text{abs}\left[\frac{1}{N} \left(\sum_{t=1}^N \text{CASH ETR}_t\right)\right]}$$

### 3.2.2. Earnings Volatility

Since earnings volatility is a component of tax strategy continuity in the preceding study, we included the coefficient of variation of net income before tax expense (CV\_EBT) to control earnings volatility. For five years from  $t$  to  $t-4$ , we divided the standard deviation of net income before income tax expense by the absolute value of the mean, where a large value would indicate mean highly volatile earnings.

$$\text{CV\_EBT} = \frac{\sqrt{(\sum_{t=1}^N \{\text{EBT}_t - \text{avg.EBT}_t\}^2 / N)}}{\text{abs}\left[\frac{1}{N} \left(\sum_{t=1}^N \text{EBT}_t\right)\right]}$$

KCGS has conducted a corporate governance assessment since 2003 and has been assessing the level of corporate sustainability management of listed Korean companies every year since 2011 through ESG assessments. As shown in Table 3, KCGS considers the three categories of environmental management, socially responsible management, and governance and gives each firm one of seven possible grades (S, A+, A, B+, B, C, and D). In this study, we considered four of the grades (S, A+, A, and B+) as indicating excellent sustainability management activities, and the remaining three grades (B, C, and D) as not excellent.

**Table 3.** Key indicators for ESG assessment.

Category	Key Indicators
Environment Protection	Environmental management certification, environmental information disclosure, participation in international initiatives, environmental management organization, environmental education, environmental performance evaluation, amount of greenhouse gas emissions, energy use, hazardous chemical emissions, water usage/reuse rate, waste discharge/recycling capacity
Social Contribution	Percentage of temporary workers, operation of human rights protection programs, percentage of female workers, support of business partners, fair trade programs, anti-corruption programs, product and service safety certifications, social contribution expenditures
Governance	Shareholders' meetings, dividends, corporate governance disclosures, board independence, performance of the board's operations, professional committees within the board, audit bodies, audit committee operations, external audit independence, board operating regulations, publicizing ESG ratings

Note: ESG Basic Evaluation Report [27].

### 3.3. Empirical Models

Our study investigated the impact of corporate sustainability management on sustainable tax strategies in Korea. We used two-way clustering in OLS regression for empirical analysis. In Equation (1a), we tested our main hypothesis that companies with better sustainability management activities will have more sustainable tax strategies empirically, and we established the following firm-and-year clustered regression model with reference to previous studies on the determinant of tax strategies such as tax avoidance and sustain-

able tax strategies. Our data includes several firms and years. Thus, the correlation of time series and cross-sectional areas can be high. According to Petersen [28] and Gow et al. [29], the need to control individual clusters arises when analyzing panel data that show a high correlation between time series and cross-sectional areas. We tested the hypothesis using two-way clustering in accordance with the firm-year.

$$\begin{aligned} \text{SUSTAIN}_{i,t} = & \beta_0 + \beta_1 \text{ESGD}_{i,t} + \beta_2 \text{CV\_EBT}_{i,t} + \beta_3 \text{ESGD} \times \text{CV\_EBT}_{i,t} + \beta_4 \text{SIZE}_{i,t} \\ & + \beta_5 \text{LEV}_{i,t} + \beta_6 \text{OCF}_{i,t} + \beta_7 \text{MTB}_{i,t} + \beta_8 \text{PPER}_{i,t} + \beta_9 \text{INTAG}_{i,t} + \beta_{10} \text{ROA}_{i,t} \\ & + \beta_{11} \text{NOL}_{i,t} + \sum \text{ID} + \varepsilon_{i,t} \end{aligned} \quad (1a)$$

$$\begin{aligned} \text{SUSTAIN}_{i,t} = & \beta_0 + \beta_1 \text{ED}_{i,t} + \beta_2 \text{CV\_EBT}_{i,t} + \beta_3 \text{ED} \times \text{CV\_EBT}_{i,t} + \beta_4 \text{SIZE}_{i,t} \\ & + \beta_5 \text{LEV}_{i,t} + \beta_6 \text{OCF}_{i,t} + \beta_7 \text{MTB}_{i,t} + \beta_8 \text{PPER}_{i,t} + \beta_9 \text{INTAG}_{i,t} + \beta_{10} \text{ROA}_{i,t} \\ & + \beta_{11} \text{NOL}_{i,t} + \sum \text{ID} + \varepsilon_{i,t} \end{aligned} \quad (1b)$$

$$\begin{aligned} \text{SUSTAIN}_{i,t} = & \beta_0 + \beta_1 \text{SD}_{i,t} + \beta_2 \text{CV\_EBT}_{i,t} + \beta_3 \text{SD} \times \text{CV\_EBT}_{i,t} + \beta_4 \text{SIZE}_{i,t} \\ & + \beta_5 \text{LEV}_{i,t} + \beta_6 \text{OCF}_{i,t} + \beta_7 \text{MTB}_{i,t} + \beta_8 \text{PPER}_{i,t} + \beta_9 \text{INTAG}_{i,t} + \beta_{10} \text{ROA}_{i,t} \\ & + \beta_{11} \text{NOL}_{i,t} + \sum \text{ID} + \varepsilon_{i,t} \end{aligned} \quad (1c)$$

$$\begin{aligned} \text{SUSTAIN}_{i,t} = & \beta_0 + \beta_1 \text{GD}_{i,t} + \beta_2 \text{CV\_EBT}_{i,t} + \beta_3 \text{GD} \times \text{CV\_EBT}_{i,t} + \beta_4 \text{SIZE}_{i,t} \\ & + \beta_5 \text{LEV}_{i,t} + \beta_6 \text{OCF}_{i,t} + \beta_7 \text{MTB}_{i,t} + \beta_8 \text{PPER}_{i,t} + \beta_9 \text{INTAG}_{i,t} + \beta_{10} \text{ROA}_{i,t} \\ & + \beta_{11} \text{NOL}_{i,t} + \sum \text{ID} + \varepsilon_{i,t} \end{aligned} \quad (1d)$$

Sustainable tax strategies (SUSTAIN), which was a dependent variable, were measured by the volatility in the cash effective tax rate. The smaller this value is, the less volatile the tax strategy. The variable of interest was the ESG grade of the KCGS, which assesses the level of corporate sustainability management as total and detailed categories. ESGD is a dummy variable that was equal to 1 if the ESG total assessment corresponded to an excellent grade (S, A+, A, or B+); otherwise, it was equal to 0. ED, SD, and GD represent the individual assessment grades of environmental protection, social contribution, and governance ratings, respectively, and were defined in the same binary fashion as ESGD. Sustainable tax strategies were affected by the volatility of pre-tax income and, therefore, included CV\_EBT, the volatility of net income before income tax. A negative regression coefficient ( $\beta_3$  in Equations (1a)–(1d)) of ESGD (or ED, SD, GD)  $\times$  CV\_EBT could indicate that companies with excellent sustainability management activities (excellent ESG firms) try to reduce the volatility of the tax strategy. In other words, our hypothesis was supported because the result would indicate that firms with excellent sustainability management activities have more sustainable tax strategies.

The control variables were as follows. The firm size (SIZE) is the natural logarithm of total assets. The size of a company can play an active or passive role in tax avoidance. The larger the company, the more likely it uses active tax strategies, such as establishing professional tax strategies and reducing tax costs by utilizing tax experts. On the contrary, companies can be passive in avoiding taxes because they must bear political costs based on political cost assumptions [30]. The leverage ratio (LEV) is the total debt divided by the total assets. Interest expense is a form of tax shield, so the larger the debt, the lower the tax burden, thereby controlling for the effect of debt on tax avoidance [31]. We calculated cash flows from operating activities (OCF) by dividing operating cash flows of the underlying total assets. We controlled OCF as the cash flow decreased; tax avoidance tendencies increased as a means to minimize the amount of cash tax paid [32]. The market to book value ratio (MTB) is the market capitalization of equity divided by the book value of equity and represents future growth opportunity. The likelihood of tax avoidance may increase as firms expect future income growth. PPER (INTAG) is PPE (intangible assets) divided by total assets. Both variables are proxies for tax deduction for investment [33]. A higher return on assets (ROA) increases the tax burden, so managers of highly profitable firms may make greater efforts at tax avoidance to reduce tax costs [30]. The net operating loss carry-over (NOL) is a dummy variable indicating that firms reported unappropriated deficits in year  $t-1$ . Losses carried forward were deductible from current earnings, thus

lowering tax liability. However, we used NOL instead of actual loss carried forward because of data unavailability [34]. Finally, we included the industry dummy (ID) and the year dummy (YD).

## 4. Empirical Results

### 4.1. Descriptive Statistics and Correlations

Table 4 shows descriptive statistics of the research variables. The average of sustainable tax strategies (SUSTAIN) was 0.437, and the median was 0.361, showing a positively skewed distribution. A smaller value of SUSTAIN indicates the more sustainable tax strategies. In the ESG total assessment (ESGD), firms with excellent grades (S, A+, A, and B+) comprised 20.7% of the sample. The percentages of firms with excellent grades in each of the sub-assessments were 30.2% for environmental protection (ED), 25.2% for social contribution (SD), and 23.8% for ethical management (GD). The average value of net income before tax expense of volatility (CV\_EBT) was 0.439, and the median value was 0.389. The average values of SIZE, LEV, and OCF were 27.161, 0.337, and 0.065, respectively. The MTB mean was 1.415, indicating that the market value of equity was about 1.4 times higher than the book value. PPE was about 19.5% of average total assets. ROA showed 5.3% of the average total assets; firms with losses carried forward from the previous year comprised 0.8% of the total sample.

**Table 4.** Descriptive statistics.

Variable	Mean	Median	Std	Min	Max
SUSTAIN	0.437	0.361	0.311	0.021	1.862
ESGD	0.207	0.000	0.405	0.000	1.000
ED	0.302	0.000	0.459	0.000	1.000
SD	0.252	0.000	0.434	0.000	1.000
GD	0.238	0.000	0.426	0.000	1.000
CV_EBT	0.439	0.389	0.260	0.019	1.872
SIZE	27.161	26.881	1.478	23.815	32.921
LEV	0.337	0.328	0.170	0.001	0.815
OCF	0.065	0.060	0.060	−0.269	0.336
MTB	1.415	0.969	1.544	0.160	14.780
PPER	0.195	0.170	0.148	0.000	1.348
INTAN	0.021	0.008	0.044	0.000	0.646
ROA	0.053	0.043	0.060	−0.040	1.570
NOL	0.008	0.000	0.088	0.000	1.000

Variable definitions: SUSTAIN is sustainable tax strategies, which was measured by the volatility in the cash effective tax rate; ESGD is a dummy variable that is equal to 1 to if the environmental, social, and governance (ESG) ratings of the Korean Corporate Governance Service (KCGS) total assessment corresponded to an excellent grade (S, A+, A, B+), otherwise it was equal to 0; ED is a dummy variable that is equal to 1 to if the ESG grade for the environmental sector corresponds to an excellent grade, otherwise it is equal to 0; SD is a dummy variable that is equal to 1 to if the ESG grade for the corporate social responsibility sector corresponds to an excellent grade, otherwise it is equal to 0; GD is a dummy variable that is equal to 1 to if the ESG grade for the corporate governance sector corresponds to an excellent grade, otherwise it is equal to 0; SIZE is the natural logarithm of total assets; LEV is the financial leverage, determined by the ratio of total debt to total assets; OCF is the cash flow for operating activities divided by total assets; MTB is the market value of equity divided by the book value of equity; PPER is the property, plant, and equipment divided by total assets; INTAG is the intangible assets divided by total assets; ROA is return on assets, which was measured as pretax income in year *t* divided by lagged total assets; NOL is a dummy variable that is equal to 1 to if a firm reported unappropriated deficits in a lagged year, otherwise it is equal to 0.

Table 5 shows the correlation analysis results between the research variables. The correlation coefficients between sustainable tax strategies (SUSTAIN) and the level of corporate sustainability management, as represented by three of the four ESG measures



(ESGD, SD, and GD), showed negative relationships ( $-0.072$ ,  $-0.093$ , and  $-0.082$ , respectively) under the 1% significance level, indicating that the sustainable tax strategies of excellent ESG firms was high. The correlation coefficient of the fourth ESG measure, ED, with SUSTAIN was also negative but statistically insignificant. The volatility of EBT presented a positive correlation (0.530) with SUSTAIN, indicating that the greater the volatility of EBT, the lower the sustainable tax strategies. SUSTAIN had significant correlations with the control variables, showing negative correlations with firm size (SIZE), cash flow from operations (OCF), market to book value ratio (MTB), and PPE asset intensity (PPER) and positive correlations with leverage ratios (LEV) and the loss carry forward dummy (NOL). This indicates that if a company's financial position or performance is good, it increases the likelihood of having sustainable tax strategies.

**Table 5.** Pearson correlations among the variables.

Variables	SUSTAIN	ESGD	ED	SD	GD	CV_EBT	SIZE	LEV	OCF	MTB	PPER	INTAG	ROA
ESGD													
ED	$-0.034$ (0.173)	0.599 (0.000)											
SD	$-0.093$ (0.000)	0.739 (0.000)	0.454 (0.000)										
GD	$-0.082$ (0.000)	0.568 (0.000)	0.277 (0.000)	0.409 (0.000)									
CV_EBT	0.530 (0.000)	$-0.068$ (0.005)	$-0.045$ (0.074)	$-0.102$ (0.000)	$-0.091$ (0.000)								
SIZE	$-0.075$ (0.002)	0.618 (0.000)	0.551 (0.000)	0.588 (0.000)	0.469 (0.000)	$-0.098$ (0.000)							
LEV	0.121 (0.000)	0.132 (0.000)	0.121 (0.000)	0.127 (0.000)	0.066 (0.007)	0.054 (0.029)	0.220 (0.000)						
OCF	$-0.267$ (0.000)	0.146 (0.000)	0.124 (0.000)	0.156 (0.000)	0.083 (0.001)	$-0.281$ (0.000)	0.064 (0.009)	$-0.101$ (0.000)					
MTB	$-0.072$ (0.003)	0.158 (0.000)	0.045 (0.073)	0.184 (0.000)	0.133 (0.000)	$-0.083$ (0.001)	0.120 (0.001)	0.048 (0.050)	0.275 (0.000)				
PPER	$-0.085$ (0.001)	0.178 (0.000)	0.230 (0.000)	0.166 (0.000)	0.077 (0.002)	$-0.140$ (0.000)	0.156 (0.000)	0.352 (0.000)	0.224 (0.000)	0.011 (0.656)			
INTAG	0.019 (0.448)	0.160 (0.000)	0.046 (0.066)	0.204 (0.000)	0.167 (0.000)	$-0.027$ (0.267)	0.170 (0.000)	0.089 (0.000)	0.144 (0.000)	0.069 (0.005)	0.050 (0.042)		
ROA	$-0.207$ (0.000)	0.084 (0.000)	0.009 (0.725)	0.085 (0.001)	0.099 (0.000)	$-0.172$ (0.000)	0.017 (0.494)	$-0.163$ (0.000)	0.343 (0.000)	0.325 (0.000)	$-0.004$ (0.885)	0.085 (0.001)	
NOL	0.060 (0.013)	$-0.028$ (0.245)	$-0.026$ (0.306)	$-0.020$ (0.415)	$-0.033$ (0.172)	0.016 (0.517)	$-0.021$ (0.402)	0.036 (0.137)	$-0.033$ (0.182)	$-0.009$ (0.709)	$-0.016$ (0.516)	$-0.006$ (0.802)	$-0.034$ (0.169)

Notes: the number above the parentheses indicates the correlation coefficient value, and the number in parentheses indicates the *p*-value. Please see Table 4 for variable definitions.

Table 6 presents the results of comparing the financial performance of excellent ESG firms and non-excellent ESG firms. According to the results of the mean difference test, the volatility of the effective tax rate (SUSTAIN) was 0.393 for excellent ESG firms and 0.448 for non-excellent ESG firms, and the mean difference was statistically significant. Thus, sustainable tax strategies of excellent ESG firms was significantly higher than that of non-excellent ESG firms. The CV\_EBT, which represents the volatility of EBT, was 0.400 for the excellent ESG firms, which was significantly lower than that of non-excellent ESG firms (0.444). Regarding financial characteristics, we found that the mean of the firm size (SIZE), the leverage ratio (LEV), the cash flow from operating activities (OCF), the market to book ratio (MTB), the PPE intensity (PPER), the intangible asset intensity (INTAG), and the return on assets (ROA) were significantly higher for excellent ESG firms than non-excellent ESG firms. On the contrary, the mean of the loss carry forward dummy (NOL) was significantly lower for excellent ESG firms, indicating that companies with excellent

sustainability management activities had a better financial position or performance than non-excellent ESG firms.

**Table 6.** Mean differences in financial characteristics for companies with excellent vs. non-excellent ESG assessment.

Variables	Excellent Firm ( <i>n</i> = 346)	Non-Excellent Firm ( <i>n</i> = 1324)	Mean Difference	t-stat.
SUSTAIN	0.393	0.448	−0.055	−3.39 ***
CV_EBT	0.400	0.444	−0.044	−2.80 ***
SIZE	28.948	26.694	2.254	26.79 ***
LEV	0.381	0.325	0.056	5.46 ***
OCF	0.082	0.060	0.022	5.36 ***
MTB	1.892	1.290	0.601	5.21 ***
PPER	0.246	0.181	0.065	6.56 ***
INTAG	0.034	0.017	0.017	4.66 ***
ROA	0.063	0.051	0.012	3.10 ***
NOL	0.003	0.009	−0.006	−1.59

Notes: \*\*\* represents significance at the 0.01, 0.05, and 0.1 level, respectively. Please see Table 4 for variable definitions.

#### 4.2. Regression Results

Table 7 shows the results of analyzing the impact of the corporate sustainability management on sustainable tax strategies. The dependent variable is the volatility of the effective tax rate, representing sustainable tax strategies. The smaller the volatility of the effective tax rate is, the higher the sustainable tax strategies value is. The variable of interest is the ESG rating (ESGD), which assesses a company's sustainability management activities. As the volatility of pre-tax income affects sustainable tax strategies, we included an interaction term of the CV\_EBT with ESGD (or ED, SD, GD). If the regression coefficient of ESGD (or ED, SD, GD) × CV\_EBT was negative, then the corporate sustainability management had an incremental effect on increasing sustainable tax strategies, even considering the volatility of pre-tax income.

**Table 7.** Regression analysis result for ESG assessment and sustainable tax strategies.

Variables	Model 1		Model 1.1		Model 1.2		Model 1.3	
	Coefficient	t-stat.	Coefficient	t-stat.	Coefficient	t-stat.	Coefficient	t-stat.
Intercept	0.548 ***	3.85	0.745 ***	5.16	0.496 ***	3.59	0.607 ***	4.56
ESGD	0.096 ***	3.48						
ED			0.097 ***	3.20				
SD					0.040	1.48		
GD							0.059 **	2.29
CV_EBT	0.599 ***	15.34	0.594 ***	14.46	0.584 ***	14.99	0.590 ***	15.01
ESGD × CV_EBT	−0.265 ***	−4.26						
ED × CV_EBT			−0.180 ***	−2.82				
SD × CV_EBT					−0.164 **	−2.46		
GD × CV_EBT							−0.167 ***	−2.75
SIZE	−0.012 **	−2.30	−0.019 ***	−3.73	−0.009 *	−1.91	−0.014 **	2.84
LEV	0.187 ***	3.86	0.202 ***	4.07	0.180 ***	3.71	0.180 ***	3.74
OCF	−0.571 ***	−4.17	−0.570 ***	−4.11	−0.554 ***	−4.03	−0.577 ***	−4.23
MTB	−0.002	−0.37	−0.003	−0.72	0.000	−0.02	−0.001	−0.23
PPER	−0.018	−0.32	−0.041	−0.70	−0.017	−0.29	−0.016	−0.29
INTAG	0.390 ***	2.64	0.386 **	2.32	0.398 **	2.56	0.379 **	2.47
ROA	−0.422 ***	−3.26	−0.233	−1.51	−0.422 ***	−3.17	−0.434 ***	−3.25
NOL	0.168 **	2.18	0.095 ***		0.171 **	2.23	0.148 **	2.22

Table 7. Cont.

Variables	Model 1		Model 1.1		Model 1.2		Model 1.3	
	Coefficient	t-stat.	Coefficient	t-stat.	Coefficient	t-stat.	Coefficient	t-stat.
IND	Included		Included		Included		Included	
Cluster	Firm and year		Firm and year		Firm and year		Firm and year	
F-value	26.80 ***		25.27 ***		26.50 ***		27.19 ***	
Adj. R <sup>2</sup>	35.48%		34.44%		35.37%		35.35%	
Obs.	1670		1618		1675		1725	

Note: \*\*\*, \*\*, and \* represent significance at the 0.01, 0.05, and 0.1 level, respectively. Please see Table 4 for variable definitions.

The variable of interest, ESGD in Model 1, is a dummy variable that has a value of 1 if the ESG total grade of a firm corresponds to the excellent grade (S, A+, A, and B+), and 0 otherwise. The regression coefficient of  $ESGD \times CV\_EBT$  showed a significant negative value at the 1% significance level (−0.265). This indicated that excellent sustainability management activities increase sustainable tax strategies.

In Model 2, the variable of interest, ED, indicates a firm with an excellent grade in environmental protection. The regression coefficient of  $ED \times CV\_EBT$  also presented a negative value and was statistically significant at the 1% level (−0.180). Therefore, it was inferred that environmental protection, as a category of sustainability management activities, improves sustainable tax strategies.

SD in Model 3 is a dummy variable that indicates a firm with an excellent grade in social contributions. The regression coefficient of  $SD \times CV\_EBT$  showed a negative and significant value (−0.164), implying that social contribution activities also improve sustainable tax strategies.

Finally, GD in Model 4 represents excellent ethical management activities. The regression coefficient of  $GD \times CV\_EBT$  showed a consistently negative and significant value, which is the effect of ethical management activities on the volatility of tax strategy, indicating that ethical management activities increase sustainable tax strategies.

Among the control variables, SIZE was significantly negatively related to SUSTAIN in all models, which indicates that large firms have more sustainable tax strategies as they use professional tax services. LEV and INTAG had a significant positive relationship with SUSTAIN, suggesting that sustainable tax strategies would be lower when the leverage ratio is high and intangible assets are large. OCF and ROA had a significant negative relationship with SUSTAIN, which we can interpret to mean that more profitable firms have highly sustainable tax strategies. NOL also had a significant positive relationship with SUSTAIN, which means that firms with a larger loss carry forward had lower sustainable tax strategies.

#### 4.3. Robustness Check

We further analyzed whether corporate sustainability management had a significant impact on sustainable tax strategies by comparing sustainable tax strategies in the pre- and post-ESG assessment period. This was verified through Equation (2). For this analysis, we changed the sample period from 2003 to 2017. (In order to measure the coefficient of variation, which is the effective cash tax rate for five years from  $t-4$  to  $t$ , which is the dependent variable, data on the amount of tax paid in cash was required, and the data had been disclosed since 1999; therefore, the period from 2003 to 2017 was used as the sample period.) The ESG evaluation of the KCGS has been implemented since 2011. If it was from 2011 to 2017, which is the period after ESG evaluation, the value of POST is 1, and if it was from 2003 to 2010, which is the year before the ESG evaluation, the value of POST is 0. If the regression coefficient of  $POST \times CV\_EBT$  is negative and significant, then, from Equation (2), we can infer that sustainable tax strategies increased since 2011 because the importance of corporate sustainability management increased.

$$\begin{aligned} \text{SUSTAIN}_{i,t} = & \beta_0 + \beta_1 \text{POST}_{i,t} + \beta_2 \text{CV\_EBT}_{i,t} + \beta_3 \text{POST} \times \text{CV\_EBT}_{i,t} + \beta_4 \text{SIZE}_{i,t} \\ & + \beta_5 \text{LEV}_{i,t} + \beta_6 \text{OCF}_{i,t} + \beta_7 \text{MTB}_{i,t} + \beta_8 \text{PPER}_{i,t} + \beta_9 \text{INTAG}_{i,t} + \beta_{10} \text{ROA}_{i,t} \\ & + \beta_{11} \text{NOL}_{i,t} + \sum \text{ID} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

Table 8 presents the analysis results of the effect of ESG assessment adoption on sustainable tax strategies. The regression coefficient of  $\text{POST} \times \text{CV\_EBT}$  was negative and significant at the 10% significance level ( $-0.065$ ). The coefficients of control variables showed consistent signs and significance. This result was consistent with our expectation that the ESG assessment promotes sustainable tax strategies by a company's increasing the importance of sustainability management activities.

**Table 8.** Regression analysis for implementation of ESG assessment and sustainable tax strategies.

Variables	Coefficient	t-stat.
Intercept	0.185 **	2.34
POST	0.025	−1.64
CV_EBT	0.613 ***	22.88
$\text{POST} \times \text{CV\_EBT}$	−0.065 *	−1.74
SIZE	0.001	0.30
LEV	0.189 ***	5.99
OCF	−0.196 **	−2.36
MTB	0.007 *	1.79
PPER	−0.072 **	−2.05
INTAG	0.046	0.49
ROA	−0.799 ***	−6.84
NOL	0.113 ***	2.99
IND	Included	
Cluster	Firm and year	
F-value	61.65 ***	
Adj. R <sup>2</sup>	39.00%	
Obs.	3280	

Notes: \*\*\*, \*\*, and \* represent significance at the 0.01, 0.05, and 0.1 level, respectively. Please see Table 4 for variable definitions.

## 5. Conclusions

Experiences from the financial crises in the late 2000s and the fragile global economy heightened interest in corporate sustainability management among government officials and academia, and among businesses and investors. Therefore, we analyzed the impact of sustainable management activities on the sustainable firms' tax strategies using listed companies in Korea. Corporate sustainable management requires companies to consider non-financial activities such as environmental protection, social contribution, and ethical management, as well as short-term financial performance, to survive. Following McGuire et al. [9], we examined sustainability from various aspects of tax strategy. Corporate sustainability management enhances sustainable tax strategies, as its focus shifts from absolute tax avoidance in the short term to maintaining stable tax performance over the long term.

Our sample period was from 2011 to 2017, when the ESG assessments of sustainability management activity began. The sample consisted of non-financial businesses listed on the Korean stock market. We can summarize our results as follows.

First, we found that firms with excellent ESG ratings have highly sustainable tax strategies. This supports the research hypothesis and indicates the importance of sustainable tax strategies in maintaining the performance of tax outcomes over the long term. Second, sustainable tax strategies increased since 2011, when ESG assessments were implemented. These results indicate that because ESG evaluation recognizes that knowledge about a firm's sustainability management activities is important for investors' decision-making, companies undertake substantial sustainability management activities to strengthen their sustainable tax strategies and to maintain consistent tax performance over a long period.

Overall, the results of this study may be viewed as part of a risk management strategy that can protect businesses, based on previous studies that studied the relationship between CSR and tax avoidance [4]. This aligns with the view that tax avoidance and CSR activities have a substitutive relationship [3]. However, whereas these studies focused on short-term relationships, the present study has the distinction of analyzing long-term relationships between the corporate sustainability management and sustainable tax strategies.

The contributions of this study are as follows. First, most previous studies on corporate tax strategies focus on tax minimization or tax benefits, and few analyze sustainable tax strategies. This study is notable as it performs an empirical analysis of sustainable tax strategies that can sustain long-term tax avoidance, using McGuire et al. [9]’s definition of the variability of the cash effective rate. Second, we analyzed the distinct impact of sustainability management activities, such as environmental protection, social contribution, and ethical management, on sustainable tax strategies. Finally, we verified the corporate sustainability management or CSR using the results of evaluations by third-party companies and institutions, in contrast to the data in the sustainability management activity report disclosed by the companies. This provides important evidence to enhance the understanding of the relationship between a company’s tax actions or tax strategies and its corporate sustainability management or social responsibilities.

A limitation of this study is that it used the variability in the five-year cash effective tax rate as a proxy to measure sustainable tax strategies, which indicates whether tax avoidance continues over the long term. Because actual data on tax avoidance by companies could not be measured, prior research used ETRs, which are widely regarded as appropriate measures for tax avoidance [35]. In addition, we measured the coefficient of variation over the five-year period to determine whether the companies sustained their long-term performance. However, a recent statutory change in the tax rates in Korea could have introduced a measurement error. Further, as the cash effective tax rate was close to the highest corporate tax rate, the analysis results should be interpreted with caution.

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## References

1. Kang, B.O. [A Jackpot Start-Up] ‘ESG Management’ Corporate Craze. 2018. Available online: <http://www.ilyoseoul.co.kr/news/articleView.html?idxno=246031> (accessed on 26 July 2019).
2. Hoi, C.K.; Wu, Q.; Zhang, H. Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from irresponsible CSR activities. *Account. Rev.* **2013**, *88*, 2025–2059. [CrossRef]
3. Davis, A.K.; Guenter, D.A.; Krull, L.K.; Williams, B.M. Do socially responsible firms pay more taxes? *Account. Rev.* **2016**, *91*, 47–68. [CrossRef]
4. Godfrey, P.C. The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Acad. Manag. Rev.* **2005**, *30*, 777–798. [CrossRef]
5. Dhaliwal, D.; Li, O.; Tsang, A.; Yang, G.Y. Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *Account. Rev.* **2011**, *86*, 59–100. [CrossRef]
6. Friedman, M. The Social Responsibility of Business Is to Increase Its Profits. *N. Y. Times*, 13 September 1970; 122–126. Available online: <https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html> (accessed on 1 September 2019).
7. Lev, B.; Petrovits, C.; Radhakrishnan, S. Is doing good good for you? How corporate charitable contributions enhance revenue growth. *Strate. Manag. J.* **2009**, *31*, 182–200. [CrossRef]
8. Mills, L. Book-tax differences and international revenue service adjustments. *J. Account. Res.* **1998**, *36*, 343–356. [CrossRef]
9. McGuire, S.T.; Neuman, S.S.; Omer, T.C. *Sustainable Tax Strategies and Earnings Persistence*. Working Paper. 2013. Available online: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1950378](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1950378) (accessed on 26 July 2019).



10. Oh, G.; Kang, S. A study on effects of sustainability management on financial performance and firm value. *Korean Tax Account. Res.* **2014**, *40*, 81–108.
11. Kim, K. Effects of corporate sustainability management on short and long-term performance. *Rev. Account. Policy Stud.* **2012**, *17*, 95–118.
12. Tsoutsoura, M. *Corporate Social Responsibility and Financial Performance*; Working Paper; University of California: Berkeley, CA, USA, 2004. Available online: <https://escholarship.org/uc/item/111799p2> (accessed on 1 September 2019).
13. Kim, Y.; Huh, Y.; Koh, S. The study on the association of corporate sustainability with earnings management. *Account. Inf. Rev.* **2010**, *28*, 33–57.
14. Ki, E. The effect of corporate social responsibility on the tax avoidance and the market response to the tax avoidance. *Korean J. Tax. Res.* **2012**, *29*, 107–136.
15. Lee, H.; Kim, K. The study on the impact of the corporate sustainability management on the earnings quality, tax avoidance and the firm value. *J. Tax. Account.* **2015**, *16*, 209–242.
16. Choi, G.; Park, J. Estimating the corporate tax evasion with financial statements. *Korean Account. Rev.* **2000**, *25*, 79–103.
17. Scholes, M.; Wolfson, M.; Erikson, M.; Maydew, M.; Shevlin, T. *Taxes and Business Strategy: A Planning Approach*; Prentice Hall: Englewood Cliffs, NJ, USA, 2008.
18. Schmidt, A. The persistence, forecasting, and valuation implications of the tax change component of earnings. *Account. Res.* **2006**, *81*, 589–626. Available online: <https://www.jstor.org/stable/4093107> (accessed on 15 September 2019). [CrossRef]
19. Park, H. Valuation Implications of Tax Strategies Sustainability and Earnings Persistence. Ph.D. Thesis, The Graduate School of Hanyang University, Seoul, Korea, 2013.
20. Neuman, S.S.; Omer, T.C.; Shelley, M.K. *Corporate Transparency, Sustainable Tax Strategies, and Uncertain Tax Activities*. Working Paper. 2013. Available online: <https://ssrn.com/abstract=2184892> (accessed on 26 July 2019).
21. Gupta, S.; Newberry, K. Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *J. Account. Public. Policy.* **1997**, *16*, 1–34. [CrossRef]
22. Kim, J.; Jeong, J. The effect of corporate financial characteristics on tax avoidance. *Korean J. Tax. Res.* **2006**, *23*, 97–124.
23. Koh, Y.; Kim, J.; Choi, W. A study on corporate tax avoidance. *Korean J. Tax. Res.* **2007**, *24*, 9–40.
24. Phillips, J. Corporate tax-planning effectiveness: The role of compensation-based incentives. *Account. Rev.* **2003**, *78*, 847–874. Available online: <https://www.jstor.org/stable/3203228> (accessed on 1 September 2019). [CrossRef]
25. Minton, B.; Schrand, C. The impact of cash flow volatility on discretionary investment and the costs of debt and equity financing. *J. Fin. Econ.* **1999**, *54*, 423–460. [CrossRef]
26. Minton, B.; Schrand, C.; Walther, B. The role of volatility on forecasting. *Rev. Account. Stud.* **2002**, *7*, 195–215. [CrossRef]
27. Korea Corporate Governance Service. ESG Basic Evaluation Report. Available online: [www.cgs.or.kr](http://www.cgs.or.kr) (accessed on 10 June 2019).
28. Petersen, M. Estimating standard errors in finance panel data sets: Comparing approaches. *Rev. Finan. Stud.* **2009**, *22*, 435–480. Available online: <https://www.jstor.org/stable/40056916> (accessed on 10 September 2019). [CrossRef]
29. Gow, I.; Ormazabal, G.; Taylor, D. Correcting for cross-sectional and time-series dependence in accounting research. *Account. Rev.* **2010**, *85*, 483–512. [CrossRef]
30. Choi, W.; Koh, Y.; Cho, J. Related party transactions and tax avoidance. *Korean J. Taxation. Res.* **2011**, *28*, 9–35.
31. Graham, J.R.; Tucker, A.L. Tax shelters and corporate debt policy. *J. Fin. Econ.* **2006**, *81*, 563–594. [CrossRef]
32. Park, J.; Hong, Y. Corporate tax avoidance and foreign ownership. *Korean J. Tax. Res.* **2009**, *26*, 105–135.
33. Shin, S. Causality between effective tax rate and debt ratio, and effectiveness of the tax provision for limiting tax deductibility of interest expense. *Korean Account. Rev.* **2005**, *30*, 77–108.
34. Jang, S.; Kim, E.; Lee, Y.; Roh, H. A study on the impact of CEO overconfidence on tax avoidance. *Korean J. Tax. Res.* **2017**, *34*, 41–76.
35. Rego, S.O. Tax-avoidance activities of US multinational corporations. *Con. Account. Res.* **2003**, *20*, 805–833. [CrossRef]