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The correlation between environmental, social and governance ratings and the transparency in Johannesburg Stock Exchange companies' tax practices

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Background and aim: The study explores the correlation between environmental, social and governance (ESG) ratings and the extent of corporate tax transparency to investigate whether ESG ratings are indicative of transparent corporate tax practices. To gain more insight, the correlation exploration is extended to the ratings achieved in the governance category and the transparency and reporting subcategory included in the overall ESG rating.

Setting and method: The extent of corporate tax transparency disclosures in the corporate reports of 112 companies, listed on the Johannesburg Stock Exchange (JSE) on 28 February 2022, was assessed using a content analysis. The correlation between the ESG ratings and the extent of corporate tax transparency of these companies was then explored through correlation analysis.

Results: The study provides evidence of significant correlation between overall ESG ratings and corporate tax transparency. However, no correlation was found between the ratings achieved in the governance category, or the transparency and reporting subcategory and corporate tax transparency. The latter might, however, be explained by the negatively skewed distributions of the ratings achieved in the governance category and the transparency and reporting subcategory.

Contribution and conclusion: The study provides persuasive evidence that ESG ratings can be used as indicators of transparent corporate tax practices. It might provide valuable insight to boards of companies about the correlation between ESG ratings and the transparency of tax practices, encouraging them to incorporate tax governance as part of the ESG agenda. Additionally, it may be utilised by investors when making investment decisions.

Keywords: environmental, social and governance (ESG); corporate tax transparency; tax governance; transparency and reporting; corporate social responsibility; Johannesburg Stock Exchange (JSE); South Africa.

Introduction

The environmental, social and governance (ESG) imperative is high on the agenda of many legislators, investors and the general public. Environmental, social and governance aspects are referred to by a variety of terms, including 'responsible', 'impactful' or 'sustainable investing' and 'corporate social responsibility'. Regardless of the terminology, ESG typically supports the notion that companies that include ESG values into their strategy create long-term value (Institute for Pension Fund Integrity [IPFIUSA] 2020). Much of the focus among ESG proponents has been on environmental factors with, mostly overlooked to date, how tax fits into the ESG discussion.

All three ESG categories involve tax. The 'E' (environmental aspect) stems from how taxes were used from ancient times as a tool to steer behaviour, in this case through the levy of environmental taxes to reduce environmental damage (Organisation for Economic Cooperation and Development [OECD] 2011).

According to Morris and Visser (n.d.), a company's tax policy and approach to tax is no more a matter of mere compliance. It is also becoming a powerful indicator of how a company views its position in society by paying a fair share of taxes and also accepting responsibility for workplaces fit for the requirements of future generations of the workforce. It's a critical element of an organisation's social contribution, the 'S' in ESG. The latter is supported by KPMG (2021) who recognises that stakeholders focused on ESG expect companies to pay their 'fair share' of taxes and to conduct their tax affairs in a sustainable manner which is measured in terms of good tax governance.

The importance of good tax governance, which correlates to the 'G' in ESG, has been emphasised by a large number of global initiatives, led by intragovernmental organisations over the past decade, according to which companies have been urged to report on how much and to whom they pay corporate taxes (see the 2014 report Good Tax Governance in Transition, the 2030 Agenda for Sustainable Development, the 17 UN Sustainable Development Goals of the United Nations and the Responsible Tax Principles developed by B Team) (Oikos, VBDO & PwC 2014; The B Team 2018; UN n.d.). The latter relates to the increased focus on corporate taxation and the transparency of the tax policies and practices which have been high on the agenda of the OECD for the past decade (OECD 2015b).

More organisations are paying attention to ESG issues as standards around corporate responsibility rise, and many people predict that in 5 years, ESG imperatives will produce greater shareholder value than they do now. This, together with transparency becoming more prevalent, urges organisations to act on sustainability requirements. Since sustainability is built on the assumption that developing such strategies fosters company longevity, it would be expected that tax, labelled as being 'essential to finance investments in human capital, infrastructure and the provision of services for citizens and businesses' by the World Bank (nd.), must form part of the discussion. In contrast, very little is being said about if and how corporate governance affects, influences or is reflected in corporate tax transparency.

Research aim, objectives and rational

The overall aim of the study is to explore whether enhanced corporate tax transparency practices have a favourable impact on ESG ratings. The overall aim can be divided into the following specific objectives:

- To obtain the ESG rating of JSE-listed companies from an appropriate rating agency, to examine and link the rating categories, included in the overall ESG rating, to corporate tax transparency.
- To examine and assign a measure to the extent of corporate tax transparency disclosures of these JSE-listed companies.
- To explore the correlation, if any, between ESG ratings and the extent of corporate tax transparency.

Although numerous studies have been done to investigate correlation and effect between and on corporate governance and tax planning, or aggressive tax practices (Hanlon & Heitzman 2010; Hoi, Wu & Zhang 2013; Knuutinen 2014; Lanis & Richardson 2012; Preuss 2010; Stiglingh, Smit & Smit 2021), very little research has been done to gain an understanding of whether corporate governance affects, influences or is reflected in corporate tax transparency. This exploration of the correlation between ESG ratings and corporate tax transparency thus adds to the existing body of research and provides a platform for future research to be done. It is therefore deemed appropriate and necessary.

Literature review

The increased focus on corporate taxation and the transparency of the tax policies and practices of (especially) multinational entities (MNEs), launched from the OECD, started the project on Base Erosion and Profit Shifting (BEPS), the OECD/G20 BEPS Project in 2013. The OECD/G20 BEPS Project attempts to equip governments around the globe with solutions to close loopholes in existing international standards that allow corporate profits to be artificially moved to low- or no-tax jurisdictions with little or no economic activity (OECD 2015a). One of the three pillars the OECD/G20 BEPS Project is structured around improvement in transparency (OECD 2015a).

During 2015, the Global Forum of the OECD laid the groundwork for a new level of transparency and information sharing through the introduction of non-public Country-by-Country (CbC) reporting and the automatic exchange of these reports among revenue authorities (OECD 2015b). These reports provide detailed information on the global activities, financial structure and economic substance of multinational entities for each country in which it operates (OECD 2015c). In short, CbC reporting aims to identify whether taxes are paid in the jurisdictions where the economic activity of the company takes place (OECD 2017). If not, it might signal to companies engaged in tax planning strategies, to reduce their overall group-effective tax rate.

Following the OECD's BEPS project, various organisations and initiatives that promote widespread adoption of ESG factors added tax criteria to their frameworks and standards for ESG reporting, resulting in corporate tax becoming a leading governance consideration, particularly tax transparency and corporate income tax responsibility (Barendregt, Anselmi & Tsiosta 2022). The World Economic Forum, for example, defined 'total tax paid' as a reportable indicator to reflect a corporation's direct and indirect tax contribution to public budgets. Standard 201–1 of the Global Reporting Initiative (GRI), an OECD partner, identified tax as a significant component of a country's economic value generated (Barendregt et al. 2022), and Standard 207: Tax 2019 (GRI 207), the first public global standard for comprehensive tax disclosures, was recently introduced as part of the global GRI Sustainability Reporting Standards.

In South Africa, there is no formal obligation to provide ESG disclosures under the present disclosure regime (Davids & Kitcat 2021). However, the King Code on Corporate

Governance (currently King IV) recommends the GRI as a guideline for sustainable reporting. This is further supported by the Johannesburg Stock Exchange (JSE) who operates the FTSE/JSE Responsible Investment Index Series which leverages the global FTSE ESG ratings to offer investors and stakeholders access to ESG data, as well as a benchmark and a tradable index product. In addition, the JSE developed its Sustainability and Climate Change Disclosure Guidance which aims to guide South African companies on how to approach sustainability reporting (https://www.jse.co.za/). This guidance considers the GRI, Task Force on Climate-Related Financial Disclosures and International Sustainability Standards Board, to name a few. Other sustainability guidelines, indices, espousing the ESG agenda in South Africa include the International Integrated Reporting Committee (IIRC), the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) and the Sustainability Accounting Standards Board (SASB) (Davids & Kitcat 2021). To this end, there is an onus on South African companies to report on material ESG impacts and King IV recommends that an institutional investor's ethical investment code adopted in terms of Principle 17, as well as the implementation of its principles and practices, should be made public.

The King Reports on Corporate Governance in South Africa (the King Reports) stress the importance of companies acknowledging all stakeholders and taking a 'triple-bottom-line' approach. The triple-bottom-line strategy focuses on a company's social, environmental, and financial sustainability (Dekker & Esser 2008).

The King Reports are not required to be applied, but they were introduced with an 'apply-or-explain' approach that was later revised to an 'apply-and-explain' approach that encourages companies to use sustainability initiatives, or explain why they haven't. As previously stated, this is especially true of JSE-listed companies, as the JSE Listing Requirements compel listed companies to conform with the King Report or otherwise justify their deviation from the norm (JSE n.d.).

As early as 1994 when the King Committee on Corporate Governance issued its first report, King I, the need for companies to be socially responsible in the communities in which they operate was emphasised. The overall objective of the introduction of King I was to promote corporate governance and adequate standards for the board of directors of listed companies.

The King I Report on Corporate Governance was updated in 2002 with the publishing of the King II Report on Corporate Governance. The updated report expanded on the stated objective of King I through the introduction of seven good corporate governance characteristics, namely discipline, transparency, fairness, social responsibility, independence, accountability and responsibility, expected to be applied in business dealings.

The third revised issue, the King III Report, became effective in March 2010. This version introduced sustainability, highlighting corporate citizenship, integrated reporting and disclosure as key elements. With the release of the King IV Report on Corporate Governance, which superseded the King III Report with an effective date of 01 April 2017, a further update to the current King Report on Corporate Governance was noticed. One distinction in this version is the emphasis on integrated reporting, which is in keeping with current international sentiment that favours increased accountability and transparency.

Another significant difference between the King IV Report and its predecessors is that the King IV Report covers tax policy and strategy creation within the scope of a company's obligations. According to the King IV Report, the governing body, that is, the board of directors, is responsible for ensuring that the company's tax policies are transparent and responsible. The King IV Report emphasises the need for transparency and responsibility as part of a company's responsibilities to act as responsible corporate citizens. Part 2 under the fundamental concepts of the King IV Report states:

> [*T*]ax has become a complex matter with various dimensions. The governing body should be responsible for a tax policy that is compliant with the applicable laws, but that is also congruent with responsible corporate citizenship, and that takes account of reputational repercussions. Hence, responsible tax policy and transparency in this regard are put forward as a corporate citizenship considerations in King IV. (p. 32)

Sustainability guidelines, indices and governance codes espousing the ESG agenda, however, rely on a company's own assessment of its performance. This allows companies to evaluate and decide what is viewed as material, meaning that in many cases various ESG topics, including corporate tax and the disclosure thereof, are not mentioned, or are classified as being of 'minor' importance.

Environmental, social and governance matters stem from corporate social responsibility (CSR), and while CSR attempts to hold companies accountable, ESG criteria make its efforts quantifiable. Corporate citizenship defines how a company accepts responsibility for its impact on the society in which it operates by acting in ways that do not harm the wider community, employees, customers, or the environment (Alva 2020). In the 2016 Tax Transparency Benchmark (VBDO & Oikos 2016), Angélique Laskewitz, Executive Director of the Dutch Association of Investors for Sustainable Development (VBDO), makes two key observations: taxes must be seen as part of a corporation's responsibility as a corporate citizen, and if a company is not upfront about its taxes, it must be hiding something. The latter is one of the many perceived advantages of corporate tax transparency, reducing tax-related reputational risk (Stiglingh et al. 2017).

According to Actionaid (2011), there are three criteria that guide sustainable tax planning behaviour:

- strict adherence to tax regulations is no longer adequate to prevent public scrutiny of tax planning tactics;
- increased risk and criticism result from a lack of transparency and complicated tax planning methods;
- the structures and practices of tax planning are at the centre of tax responsibility, not the actual amount of taxes paid.

Van der Enden (2016) argues that a company's tax governance should be aligned with its sustainability plan, and the transparency thereof indicates to stakeholders that a company is operating responsibly. This view is supported by KPMG (2021) which notes that public disclosure of a company's tax strategy, the amount paid in taxes, and where those taxes are paid are important elements of sustainable tax practices. The views derived from the VBDO, Actionaid, Van der Enden and KPMG, support the expectation that enhanced corporate tax transparency should have a favourable impact on ESG ratings.

The aim of this study is to explore this expectation by analysing the correlation between ESG ratings and the corporate tax transparency of JSE-listed companies in South Africa. Environmental, social and governance ratings are obtained from CSRHub (https://www.csrhub.com), a global rating agency, and examined with reference to the different rating categories included in the overall ESG rating. The overall ESG rating, the governance category rating and the transparency and reporting category rating are then correlated to a tax transparency score, assigned through a content analysis of various corporate reports of JSE-listed companies, all of which are explained in the next section.

Research design

Research methodology

The research design is an exploratory investigation that involves the correlation analysis of two variables: ESG rating and the extent of corporate tax transparency. A mixed-method design in three phases was used to perform the study. In the first phase, the ESG rating of JSE-listed companies was obtained from CSRHub and examined, based on the rating achieved for different categories included in the overall ESG rating. In the second phase the content of the corporate reports (either the tax report, the sustainability report or the integrated report) of the companies for which an ESG rating was obtained and examined to assign a measure to the extent of corporate tax transparency disclosures, yielding primary data on the extent of corporate tax transparency disclosures. Since proxies for measuring corporate tax transparency are rare in the scholarly literature, the content analysis was judged necessary (Venter, Stiglingh & Smit 2017). In phase three, correlation analyses were performed to explore the correlation between ESG ratings, and the extent of corporate tax transparency of the companies included in the data.

Data selection

The data were selected from all the companies listed on the JSE's main board as of 28 February 2022, which was provided by the JSE. For two reasons, a JSE listing is considered a prerequisite: (1) the content analysis relies on publicly available corporate reports and (2) the JSE listing requirements necessitate the application of the King IV Report and other sustainability indices. Companies for which CSRHub was unable to offer a full ESG rating across all rating categories on 28 February 2022 were removed from the data. Following that, the IRESS research domain (https://researchdomain-iress-co-za.ez.sun.ac.za/Default.aspx) was used to examine the organisational structure of the remaining list of companies in order to identify organisations that did not qualify as MNEs, that is, companies that only traded in South Africa and had no international footprint. Non-MNEs' legal structures do not allow for international tax planning or profit shifting; hence this step was deemed necessary. Six companies were eliminated, leaving 112 companies in the data, summarised in Table 1.

The market capitalisation of the companies included in the data totalled more than R5.5 trillion, and were spread across all 10 industries of the JSE and 48 of the JSE's subsectors. Altogether 94 of the 112 companies in the data have a primary listing on the JSE.

Data collection

Environmental, social and governance ratings

The first variable, the ESG rating as provided by CSRHub, was used as a proxy for the data companies' extent of CSR. CSRHub is a rating agency with a web-based database providing the public open access to ESG performance, sustainability ratings and information on more than 22 000 companies in more than 148 countries of which South Africa is one.

The CSRHub aggregates ESG data sets from leading analysts which include ASSET4 (Thomson Reuters), CDP (Carbon Disclosure Project), IW Financial, MSCI (ESG Intangible Value Assessment, ESG Impact Monitor, Governance Metrics, and Carbon Tracker), RepRisk, Trucost and Vigeo EIRIS (CSRHub n.d.). These data sets are combined and normalised, whereafter CSRHub rates the company's ESG performance on a scale of 0–100 points, 100 being the most positive rating. The overall ESG rating of the company is calculated as the weighted average of four categories: employees, environment, community relations and governance. The overall ESG rating positions the aim of the study to explore the correlation between ESG ratings and corporate tax transparency.

TABLE 1: Defined data set.

Detail	Number
Companies listed on the main board of the JSE on 28 February 2022	258
Removal of companies for which CSRHub was unable to provide a complete ESG rating across all rating categories on 28 February 2022	(140)
Removal of companies not qualifying as a MNE on 28 February 2022	(6)
Data set	112

MNE, multinational entity; JSE, Johannesburg Stock Exchange; CSR, corporate social responsibility; ESG, environmental, social and governance.

The governance category included in the overall ESG rating encompasses a company's commitment to sustainability and corporate responsibility at all levels, as well as its directors and management (CSRHub n.d). The enlightened measurements in the governance category date back to the King IV Report, which places the obligation for ensuring that a company's tax policies are in place, transparent and accountable to the board of directors. To explore how tax governance is reflected in the overall ESG rating, the rating of a company's governance category, which can be viewed separately, supports the aim in the form of a more in-depth analysis of the correlation between the governance category ESG rating and corporate tax transparency.

Providing even more condensed data are the three subcategories included in the governance category, comprising: board, learnership and ethics, and transparency and reporting. The efficiency of a company in adopting best practices in corporate governance principles relating to board membership, and best practices related to board activities and functions, is covered by the board subcategory (CSRHub n.d.). The learnership and ethics subcategory assesses how a company manages its relationships with numerous stakeholders, including shareholders, customers, communities and regulators, among others. The company's ethical decision-making culture is also part of leadership (CSRHub n.d.). The transparency and reporting subcategory assesses, among other things, whether a company is transparent to stakeholders and whether its sustainability of CSR reports are accurate, complete and reliable. It also assesses whether these reports are made available to the general public (CSRHub n.d.). The scoring of the three subcategories can also be viewed separately. To support the aim in an even more in-depth exploration, the rating achieved in the transparency and reporting subcategory of the overall ESG rating is correlated to corporate tax transparency.

TABLE 2: Measurable criteria (GRI 207 2019).

Reference to GRI 207	Measurable criteria	Extent
207-1	Does the MNE disclose an approach to tax or tax strategy?	Yes = 1 No = 0
207-2	Does the MNE disclose a description of the tax governance and control framework?	Yes = 1 No = 0
207-3	Does the MNE disclose a description of the approach to stakeholder engagement and management of stakeholder concerns relating to tax?	Yes = 1 No = 0
207-4 a	Does the MNE disclose the different foreign jurisdictions in which it operates and has tax residency?	Yes = 1 No = 0
207-4 b i	Does the particular company report a list of all entities included in its consolidated financial statements by tax jurisdiction?	Yes = 1 No = 0
207-4 b ii	Are the primary activities of the foreign resident entities disclosed?	Yes = 1 No = 0
207-4 b iii	Are the number of employees employed by the foreign resident entities disclosed?	Yes = 1 No = 0
207-4 b iii	Is the basis of calculation of the number of employees employed by the foreign resident entities disclosed?	Yes = 1 No = 0
207-4 b iv	Is the revenue generated per jurisdiction from third-party sales disclosed?	Yes = 1 No = 0
207-4 b v	Is the revenue generated per jurisdiction from intra-group transactions with other tax jurisdictions disclosed?	Yes = 1 No = 0
207-4 b vi	Are the profit and loss per jurisdiction disclosed?	Yes = 1 No = 0
207-4 b vii	Are tangible assets, other than cash, per jurisdiction disclosed?	Yes = 1 No = 0
207-4 b viii	Is the corporate income tax paid on a cash basis disclosed for every jurisdiction?	Yes = 1 No = 0
207-4 b ix	Is the corporate income tax accrued on profit/loss disclosed for every jurisdiction?	Yes = 1 No = 0
207-4 b x	Are reasons disclosed for the difference between the statutory and effective tax rate for every jurisdiction?	Yes = 1 No = 0
207-4 c	Is the time period for the information reported disclosed?	Yes = 1 No = 0
Maximum extent of corporate tax transparency that can be obtained		16

MNE, multinational entity; GRI, Global Reporting Initiative.

From CSRHub's database, the overall ESG rating and the rating achieved in the governance category and transparency and reporting subcategory of all JSE-listed companies for which CSRHub has a completed ESG rating across all categories on 28 February 2022 were obtained. These ratings form the proxy for measuring the ESG of the companies included in the data.

The extent of corporate tax transparency

The second variable is the extent of corporate tax transparency disclosures of the data companies. The content of the various corporate reports of the data companies, which are freely available in the public domain, was examined to assign a measure to the extent of corporate tax transparency for each company. The examination resulted in primary data on corporate tax transparency disclosures for each company.

There is no single universally accepted definition for the term 'tax transparency'. The *Cambridge Dictionary* defines the term 'transparent' as 'a situation in which business and financial activities are done in an open way without secrecy, so that people can trust that they are fair and honest'. In *CollinsDictionary.com* the word is described as 'if a situation, system, or activity is transparent, it is easily understood or recognised'.

Tax transparency, according to BDO, refers to the way in which an organisation discloses how its profits are taxed and how much tax it actually pays (BDO n.d.). The OECD's CbC reporting framework and the automatic exchange of these data among revenue authorities are not publicly available unless an organisation willingly shares such information in the public domain, as indicated in the literature review. Many large companies issue annual reports that include information related to their corporate tax affairs, but the extent of the disclosure varies. As a result, a number of public corporate tax transparency initiatives have been launched in a number of jurisdictions.

With clause 149 of the Finance Bill of 2016, Her Majesty's Revenue and Customs (HMRC) introduced significant new tax governance requirements, requiring qualifying companies to publish their tax strategy outlining their approach to various tax components and encouraging all other (non-qualifying) companies to do so (HMRC 2016).

The Australian Taxation Office (ATO) implemented the Australian tax transparency code in February 2016 which sets out a set of principles and standards of tax information to be disclosed by companies (The Board of Taxation 2016). Although this application of the code is voluntary, it is encouraged. Furthermore, the ATO requires corporations, through section 3C of the *Australian Taxation Administration Act* 1953, to publish information about public and foreign-owned entities with income above $100 million, as well as Australian private enterprises with income surpassing $200 million, in an annual corporate tax transparency report. This transparency report discloses tax information which includes, among others, the amount of total income, taxable income and tax payable (ATO n.d.).

On 28 September 2021, the European Commission's Council adopted the so-called 'Public Country-by-Country Reporting' directive after much debate and controversy. This directive would alter EU Directive 2013/34 to compel MNEs, with revenues of more than EUR 750 million, to publish an income tax report. The amount of profit and loss before income tax, the amount of income tax accrued, and the amount of income tax paid on a cash basis will all be included in the income tax information report. The latter must be disclosed in each jurisdiction where the MNE operates (Ernst & Young 2021).

The Polish government published substantial revisions to corporate income tax law on 30 November 2020, which took effect on 01 January 2021. Tax capital groups and taxpayers with revenues of more than €50 million are now expected to prepare and publish an annual report on the execution of their tax strategy. These reports should be made public and include exact information on the tax processes and procedures used to manage tax compliance, transactions with related parties, executed or planned restructurings, and transactions with businesses from black-listed jurisdictions (EY 2021).

The global movement for enhanced public tax transparency is further being pursued by investor action and industry non-profit groups such as VBDO (see the 2014 report Good Tax Governance in Transition, the 2030 Agenda for Sustainable Development, the 17 UN Sustainable Development Goals of the United Nations and the Responsible Tax Principles developed by B Team) (F PwC 2014; UN n.d.; The B Team 2018). Most recently, the GRI, a partner of the OECD, introduced the GRI 207: Tax 2019 (GRI 207 2019), the first public global standard for comprehensive tax disclosures, as part of their GRI Sustainability Reporting Standards. According to PwC (2021), tax is increasingly being integrated into the ESG agendas, with the GRI 207 standard serving as an example of how tax and a company's responsibility to the environment, society and good governance are linked.

In accordance with the OECD's CbC reporting framework, the GRI 207 entails four parts that encourage public CbC disclosure of a company's business activities and tax payments:

- Disclosure 207-1 Approach to tax.
- Disclosure 207-2 Tax governance, control and risk management.
- Disclosure 207-3 Stakeholder engagement and management of concerns related to tax.
- Disclosure 207-4 Public country-by-country reporting (GRI 207 2019).

Companies that identify tax as a material topic must adhere to the disclosure criteria of GRI 207, although all companies are free to use GRI 207 to any extent desirable:

- **Criteria:** The corporate tax information outlined in terms of Disclosure 207-4 of GRI 207 (2019) was used as the theoretical framework and proxy for measuring the extent of corporate tax transparency (through disclosure) in the data companies' corporate reports (PwC 2021). Examination of the 2020 year-end of the JSE Top Listed 100 companies revealed that more than 60% follow the GRI standards in ESG areas, hence this proxy was deemed appropriate.

For purposes of the study, the GRI 207 disclosure recommendations were converted into measurable criteria for the content analysis on the following basis:

- **Approach:** The available corporate report(s) (the tax report, the sustainability report and/or the integrated report) of the companies included in the data set were obtained, scrutinised and evaluated against the measurable criteria.
- **Interpretation and limitation of scope:** The corporate reports of the data companies were examined to the extent to which the measurable criteria were addressed in any of the reports. The author used judgment throughout the examination procedure in order to analyse the content as thoroughly as feasible. A point (1) was awarded in circumstances where the measurable criteria could be determined from disclosed information without it being specifically reported as part of GRI 207.

Data analysis

To explore the aim of the study, the correlation between ESG ratings and corporate tax transparency is explored. Correlation is a measure of association between variables and the most commonly used correlation coefficients are the Pearson and Spearman coefficients (Keller & Warrack 1997). When two variables are correlated, their magnitude might fluctuate in the same direction (positive correlation) or in the opposite (negative correlation), depending on which variable is changing (Rodgers & Nicewander 1988). Pearson correlation is frequently used in the context of a linear association between two normally distributed random variables. A Spearman rank correlation can be used to describe the monotonic association between two variables and is useful in cases where the distribution of data is not normal and/or contains outliers (Caruso & Cliff 1997). A Spearman coefficient is basically a Pearson correlation coefficient calculated with the ranks of the values of each of the two variables instead of their actual values (Kutner et al. 2005).

In the study, the opposite, that there is no correlation between ESG ratings and corporate tax transparency, was assumed.

The p (probability) value indicated by the Pearson and Spearman correlations is a measure of how probable it is that any observed correlation is due to chance (Keller & Warrack 1997). A p-value ranges between 0 and 1, where a p-value close to 0 indicates that the correlation is unlikely due to chance and signals a very high probability that the assumption of no correlation is wrong, thus indicating correlation between the variables (Keller & Warrack 1997). In statistics, a p-value of 5% is accepted as strong ($p = 0.05$). Below this level, there is at least a 95% probability that the correlation is statistically significant and that these two show a true relationship.

Where significant correlation is found, a linear regression analysis is performed to explore how the two variables affect each other and it uses a mathematical equation (Keller & Warrack 1997) of:

$$y = a + b(x) \qquad \text{[Eqn 1]}$$

The regression establishes how x causes y to change. The p-value of the analysis tests whether the regression coefficient Beta is equal to zero, indicating no effect. A p-value of less than 0.05 indicates that changes in the one variable are related to changes in the other variable. The Beta (shown as b) indicates how much y changes for each one-unit change in x (Keller & Warrack 1997).

To ensure the validity of the correlation and regression analysis, the Durbin Watson statistic is used to guarantee that no autocorrelation exists at lag one, which would undervalue the standard error and may cause us to believe that predictors are significant when they are not (Keller & Warrack 1997). Where the Durbin Watson test statistic values are in the range of 1.5 to 2.5, it is acceptable, with $d = 2$ signalling no autocorrelation. As a final validity test, the Breusch-Pagan test is run to see if the errors have constant variance, also known as whether heteroskedasticity is present in the regression analyses. This is important because one of the fundamental assumptions of regression is that the variance of the errors is constant across observations (Keller & Warrack 1997). In cases where heteroskedasticity is present, bootstrap samples are created to ensure that the relationship between the variance of each error and the corresponding regressor is retained (MacKinnon 2002). The MacKinnon and White procedure (1985) to adjust the results for heteroskedasticity is then applied.

Results

Correlation results

Both the Pearson and Spearman correlation tests indicated a highly significant correlation between overall ESG rating and the total corporate tax transparency of the companies included in the data. The Spearman correlation is $r = 0.335$ with t-statistic $t = 3.73$ and p-value = 0.000304. The Pearson correlation is $r = 0.357$ with t-statistic $t = 4.01$ and p-value = 0.00011. Since both correlations are positive it signifies that as one variable (either the overall ESG rating or corporate tax transparency) increases, the other variable (either the overall ESG rating or corporate tax transparency) also increases.

As a result of the significant correlation, the regression analysis of y = corporate tax transparency on x = overall ESG ratings is of interest. The regression analysis gives the following information: The estimated regression equation is:

$$y = -7.544 + 0.1767x \qquad \text{[Eqn 2]}$$

Detail is shown in Table 3. No regression is thus rejected since the slope estimate is $b = 0.1767$, also with t-statistic $t = 4.01$ and p-value = 0.00011 (or F-statistic = 16.116 and p-value = 0.00011). The percentage variation of the extent of corporate tax transparency explained by the overall ESG rating is 12.778%.

The Durbin Watson statistic for the test of serial correlation in the residuals is $d = 1.981$, which is close to 2, implying no serial correlation. The Breusch–Pagan test that the residuals are homoskedastic is rejected since the test statistic is BP = 9.46, with degrees of freedom = 1 and p-value < 0.001. Thus, the results should be adapted for heteroskedasticity. This is done using the MacKinnon and White procedure (1985). This test concludes that the test of no regression is rejected with $t = 3.25$ and p-value = 0.00152, confirming the correlation and regression found.

Although both the Pearson and Spearman tests indicated a highly significant correlation between overall ESG rating and the total corporate tax transparency, the Shapiro-Wilk test indicated that the residuals of the regression analysis are not normally distributed, statistic SW = 0.837 and p-value $p = 0.000001$, which indicate that the appropriate test of no correlation is the one according to the Spearman correlation. This correlation is summarised in Table 4.

Both the Pearson and Spearman correlation tests indicated no significant correlation between the rating achieved in the governance category and corporate tax transparency, indicating no significant correlation between the rating achieved in the governance category and corporate tax transparency. The Spearman correlation is $r = -0.045$ and p-value = 0.6363. The Pearson correlation is $r = 0.07$ and p-value = 0.46.

TABLE 3: Regression summary.

Variable	b^*	Standard error of b^*	B	Standard error of b	$t(110)$	p-value
Intercept			-7.5440	2.4661	-3.06	0.00279
Overall ESG rating	0.36	0.09	0.1767	0.0440	4.01	0.00011

R = 35746843 R^2 = 12778368 Adjusted R^2 = 11985444
$F(1.110) = 16.116$ $p < .00011$ Standard error of estimate: 3.1037

ESG, Environmental, social and governance aspects.

TABLE 4: Spearman correlation statistics.

Variable	Spearman R	T(N-2)	p-value
Overall ESG rating	0.335106	3.73030	0.000304

Spearman correlation
Correlations are significant at $p < 0.05000$

ESG, Environmental, social and governance.

On the same basis, both the Pearson and Spearman correlation tests indicated no significant correlation between the rating achieved in the transparency and reporting and corporate tax transparency, indicating no significant correlation between the rating achieved in the transparency and reporting and corporate tax transparency. The Spearman correlation is $r = -0.03$ and p-value = 0.636. The Pearson correlation is $r = -0.11$ and p-value = 0.23.

Although the tests indicate a significant correlation between ESG ratings and corporate tax transparency, the results should be interpreted with caution since no significant correlation was found when the rating achieved in the governance category, and the transparency and reporting subcategory of the overall ESG ratings were tested. This could signal that the significant correlation is coincidental and that the overall ESG rating is not necessarily indicative of good tax governance. The data are further analysed using descriptive statistics in an attempt to gain additional clarity, but further research is recommended.

Descriptive statistics

The descriptive statistics for the companies included in the data are listed in Table 5. The mean for the extent of corporate tax transparency variable is very low. This suggests that the vast majority of the companies in the data do not disclose corporation tax information other than what is required by International Financial Reporting Standards. This is supported by the fact that the minimum for the extent of the corporate tax transparency variable is zero, indicating that 37.5% of the companies included in the data do not disclose any of the GRI 207's recommended tax disclosures. The mean values of the ratings achieved in both the governance category, and the transparency and reporting subcategory are noticeably smaller than the median, indicating that the distribution is negatively skewed. This indicates a large gap in the distribution of these ratings, which could explain why there was a significant correlation between the overall ESG rating and corporate tax transparency, but no correlation when the overall ESG rating was replaced with the ratings achieved in the governance category or transparency and reporting subcategory.

Corporate tax transparency was second-greatest in the company with the best overall ESG rating. This company earned the second-highest rating in the governance category, as well as in the transparency and reporting subcategory.

TABLE 5: Descriptive statistics.

Variable	Mean	p-value	Median	Minimum	Maximum	Standard deviation
Overall ESG rating	55.621	0.046	55.996	32.590	73.632	6.692
Rating achieved in the governance category	57.095	0.243	73.000	52.500	73.000	6.791
Rating achieved in the transparency and reporting subcategory	58.308	1.000	78.320	51.920	78.320	8.430
Extent of corporate tax transparency	2.28	0.002	1.000	0.000	16.0	3.308

ESG, Environmental, social and governance.

Two companies included in the data achieved the highest extent of corporate tax transparency possible, disclosing all of the GRI 207's required corporate tax aspects. One of these companies' ESG ratings are all substantially over their respective means, ranging close to their respective maximums. In contrast, the other company's ESG rating, achieved in both the governance category and transparency and reporting subcategory, is below the respective means, ranging near to the respective minimums.

The companies included in the data with a secondary listing on the JSE had an average extent of corporate tax transparency that was 1.043 points more than the companies with a primary listing on the JSE. This is proof of international initiatives imposed by the foreign jurisdictions where these companies are primarily listed and is indicative that South African companies are not yet following international trends on public corporate tax disclosures.

The South African Revenue Service announced regulations establishing the CbC Reporting Standard for multinational groups in South Africa (SA CbC Regulations) on 23 December 2016, in response to the OECD's recommendations on the OECD/G20 BEPS Project (SARS 2016). Multinational groups with a total consolidated group turnover above R10 billion are required to adhere to the SA CbC Regulations, which mandate thorough tax reporting on a country-by-country basis (SARS 2016). The total consolidated revenue of the data companies with a primary listing on the JSE was compared to the R10 billion CbC Reporting threshold, yielding 52 companies with a probable CbC Reporting filing obligation. Since these companies should have tax-related information readily available for each jurisdiction in which they trade, since increased public corporate tax disclosure is expected, and is confirmed by an average extent of corporate tax transparency of 3.019 compared to 1.65 of companies without a filing obligation. However, 33 of the 52 companies included in the data, with a probable CbC Reporting filing obligation, received a corporate tax transparency extent of 3 or lower (out of 16).

It's worth noting the following findings from the content analyses: some companies boldly state that tax is not a material item in their operations. Tax was listed as a material item by one company, but only for taxes paid in South Africa. All other jurisdictions in which the company trades are not considered material, so it is not reported. One company applied the first two parts of GRI207, GRI 207-1 and 207-2, while GRI 207-3 and GRI 207-4 were not applied. Many companies state in their Integrated Report that it has a tax strategy in place but do not disclose it. Some companies combine all of their foreign jurisdictions' tax information to report on their foreign activities, instead of disclosing on a country-by-country basis. All the companies in the data set, however, publicly declare that it views itself as a responsible corporate citizen through its tax payments made to governments.

Conclusion

Over the last few years, corporate tax transparency has garnered a lot of media attention, with many initiatives initiated by governments, regulators, investor action organisations, and industry non-profit organisations to improve tax governance through disclosure. Tax fits into all three categories of ESG. The 'E' ties back to environmental taxes, the 'G' relates to the governance of tax and the 'S' stands for a company's social contribution in the form of corporate tax paid. To this end, the paying of a corporation's fair share of corporate tax, as well as transparency of a company's tax practices are becoming a powerful indicator of how a company understands its role in society and its commitment to its goal in the context of the ESG imperative.

Since there is little being said about tax as part of the ESG imperative, the aim of the study was to explore the correlation between ESG ratings and the corporate tax transparency of JSE-listed companies. CSRHub, an open-access rating organisation, provided the ESG rating of the companies included in the data. The weighted average of four categories, namely employees, environment, community relations, and governance, is used to calculate the ESG rating. In order to gain a better understanding of how tax governance is reflected in the ESG rating, the ratings achieved in the governance category, and transparency and reporting subcategory, were explored. A content analysis was used to assign a measure to the extent of corporate tax transparency disclosures of the companies included in the data. Following that, a correlation analysis was conducted to see if there was any correlation between ESG ratings and corporate tax transparency.

The study found a significate correlation between the overall ESG rating and the corporate tax transparency of the companies included in the data. The correlation found provides persuasive evidence that companies with a higher overall ESG rating are also more transparent with their corporate tax practices. This conclusion must, however, be interpreted with caution as no correlation was found between the ratings achieved in the governance category, transparency and reporting subcategory and the extent of corporate tax transparency. Descriptive statistics did, however, indicate negatively skewed distributions of both the ratings achieved in the governance category and transparency and reporting subcategory. Since this is an indication of large gaps in the distribution of these variables, it might explain why no correlation was found.

There are limitations to this study. For starters, the data excludes several of the top 100 JSE-listed companies based on market capitalisation since CSRHub either does not provide the rating of these companies or had incomplete ratings. Despite this, the data include 112 companies with a combined market capitalisation of almost R5.5 trillion as of 28 February 2022. Secondly, because the data only contained JSE-listed companies, the findings may be more specific to South Africa which is classified as a developing country and not necessarily applicable to other jurisdictions. Thirdly, the research is purely exploratory and only covers one year of data. The results may vary from year to year as a company's perception of tax as a material element shifts, resulting in more or less disclosure in terms of GRI 207. Finally, the author used judgment to assign the measure to the data companies' extent of corporate tax transparency disclosures throughout the content analysis, resulting in a less-than-rigid interpretation of the criteria.

The study attempts to add to the limited scholarly literature on tax as part of the ESG imperative by adding to the current body of knowledge on the correlation between ESG ratings and company tax transparency. The study's findings may be valuable in informing company boards about the impact of corporate tax transparency on ESG ratings. Additionally, investors may utilise it to make investment decisions.

Future research could include conducting the same study with a global set of data, which would yield a larger data parameter and provide more insight into the correlation between global ESG ratings and corporate tax transparency. Another relevant area for future examination is the correlation between ESG ratings and corporate tax transparency across longer time periods, particularly in future years, given the ongoing demand and need for greater corporate tax transparency.

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Author's contributions

C.T. declares that she is the sole author of this research article.

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Data availability

Data sharing is not applicable to this article, as no new data were created or analysed in this study.

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