South African Journal of Economic and Management Sciences
ISSN: (Online) 2222-3436, (Print) 1015-8812

An exploratory study of the tax rate reconciliation disclosures of JSE listed companies

Authors:
Rudie Nel[1]
Anja van Niekerk[1]

Affiliations:
[1]School of Accountancy, Faculty of Economic Management Sciences, Stellenbosch University, Stellenbosch, South Africa

Corresponding author:
Rudie Nel,
rnel@sun.ac.za

Dates:
Received: 06 Aug. 2024
Accepted: 19 Nov. 2024
Published: 22 Jan. 2025

How to cite this article:
Nel, R. & Van Niekerk, A., 2025, 'An exploratory study of the tax rate reconciliation disclosures of JSE listed companies, *South African Journal of Economic and Management Sciences* 28(1), a5847. https://doi.org/10.4102/sajems.v28i1.5847

Background: Tax rate reconciliations provide stakeholders (investors, analysts and regulatory bodies) with an understanding of the relationship between accounting profits and tax expenses as well as assist researchers in understanding the sources of variation in effective tax rates.

Aim: This study analysed disclosed tax rate reconciliation data to identify possible explanations for fluctuations in effective tax rates.

Setting: The study exploited hand-collected tax rate reconciliation data of companies listed on the Johannesburg Stock Exchange (JSE) in South Africa for the financial reporting periods ranging from 2015 to 2022.

Methods: The exploratory study employed descriptive statistics and a mixed-model analysis of variance in pursuit of three objectives: (1) to describe the trend in tax rate reconciling items from 2015 to 2022 to identify possible sources of fluctuations, (2) to analyse variances in effective tax rates based on fair value adjustments and (3) to analyse variances in effective tax rates based on disclosure format (numeric vs. percentage).

Results: The main reconciling item category identified over the reporting periods was permanent differences that could be indicative of aggressive tax planning and warrant further research. The importance of both positive and negative permanent differences in explaining the fluctuation of effective tax rates of listed companies is highlighted for further research. Industry classification, fair value adjustments and disclosure format were also found to be significant factors in explaining fluctuations in effective tax rates.

Conclusion: The descriptive findings of this study provide insights into possible fluctuations in effective tax rates.

Contribution: The findings of this study highlight the importance of industry classification, permanent differences, fair value adjustments and disclosure format as explanations for fluctuation in effective tax rates. Furthermore, this study contributed to existing literature in support of the consistent and detailed tax disclosures by listed companies that support the use of such data in future research.

Keywords: effective tax rates; ETR; tax rate reconciliation; tax disclosures; disclosed tax rates.

Introduction

The information value of tax rate reconciliations is argued based on the ability of such disclosures to provide stakeholders with valuable information regarding the relationship between corporate profits and tax expenditures. Tax rate reconciliations can offer insights into companies' recurring (or normal) tax rates, the transitory component of the income tax expense, earnings management and the tax rates on different income sources (Nissim 2023). Furthermore, it could assist researchers in understanding the sources of variation in effective tax rates that are applied as a proxy for tax avoidance (Drake, Hamilton & Lusch 2020).

As effective tax rates are summary measures of a company's transactions, it is important to understand the sources of variation in effective tax rates (Drake et al. 2020). Based on tax disclosure data, including tax rate reconciliations, studies in the United States of America (hereafter the USA) have shown that companies' loss histories and accounting rules, most notably valuation allowances, influence inferences from declining effective tax rates as tax avoidance proxy (Drake et al. 2020). Declining cash effective tax rates in multinationals may also be associated with declining foreign tax rates (Dyreng et al. 2017). Since 2009, a decline and fluctuation in the effective tax rates of Johannesburg Stock Exchange (JSE)-listed companies in South Africa have been documented (Greeff 2019; Van der Spuy 2022); however, these prior studies in a South African

context do not offer explanations for the fluctuations in effective tax rates based on tax rate reconciliations. The present study is closely related to the recent study of Schutte and Van der Zwan (2024), which is submitted as the first study to investigate the trend in book-tax differences in South Africa. In their study, tax return data from the South African Revenue Service Normal Tax (SARS-NT) panel, as part of the United Nations University (UNU) Wider initiative, for the period 2013 to 2018, was utilised and the authors concluded that the lack of detail on tax return data was a significant limiting factor in their ability to describe book-tax differences in more detail (Schutte & Van der Zwan 2024). Recommendations for future research included describing the trend in book-tax differences over a target period that also includes the coronavirus disease 2019 (COVID-19) pandemic as well as an analysis relating to industries as the SARS-NT panel does not contain sufficient industry data (Schutte & Van der Zwan 2024). The present study expands on the findings of Schutte and Van der Zwan (2024) in four specific respects: Firstly, exploiting hand-collected data based on tax rate reconciliation disclosures to describe the trend in reconciling items in more detail. Secondly, documenting the trend in reconciling items to include the COVID-19 pandemic. Thirdly, including specific investigations of industry classification as an explanation of fluctuations in effective tax rates. Fourthly, investigating fair value adjustments and disclosure format as explaining fluctuations in effective tax rates not included in their study.

In terms of IFRS 9 *Financial Instruments*, fair value adjustments become effective for periods beginning on or after 01 January 2018 with early adoption permitted (PwC 2017). While IFRS 9 applies to financial instruments of all types of companies, the implication thereof is regarded as particularly important for the financial sector, especially banks (Ben Ltaief & Moalla 2023). The possible consequences of IFRS 9 include increased income statement volatility, as the risk will increase and an increased number of assets will need to be measured at fair value, with changes in fair value recognised in profit and loss as they arise (PwC 2017). Management's discretion in estimating the amount and timing of expected credit loss, based on the forward-looking information under IFRS 9, has been found to lead to greater earnings management (Gomaa et al. 2019). The introduction of IFRS 9 and its impact on fluctuations in effective tax rates have not yet been explored in the context of South African-listed companies.

Disclosure format refers to the format selected by companies for presenting tax rate reconciliations, as companies are required to disclose an explanation of the relationship between the tax expense and accounting profit using two alternatives (IASB 2017a, IAS 12 para. 81(c)). The first alternative is a numerical reconciliation between the tax expense and the product of accounting profit multiplied by the applicable tax rate(s), along with disclosing the basis on which the applicable tax rate(s) is (are) computed. The second alternative is a numerical reconciliation between the average effective tax rate and the applicable tax rate, as well as disclosing the basis on which the applicable tax rate is computed. In the USA, it has been found that from a reputational cost perspective, companies with low effective tax rates often avoid explicit mentions of their effective tax rates in an attempt to minimise reputational costs related to unfavourable perceptions of their tax-related activities (Chychyla, Falsetta & Ramnath 2022). Such companies are therefore more likely to use the numerical format rather than the percentage format and are less likely to mention their tax rates elsewhere in their disclosures (Chychyla et al. 2022). The only previous study on tax disclosures by listed companies in South Africa, conducted in 2006, revealed that the majority (88.7%) of the companies investigated applied the percentage format, while the remaining (11.3%) companies applied the numerical format (Meyer, Stiglingh & Venter 2006). Since 2006, significant tax reform has occurred in South Africa, including changes in the dividends tax regime and increases in applicable rates, which might have influenced companies to elect another disclosure format. Since 2006, no subsequent study to our knowledge in a South African context has explored the relationship between effective tax rates and the basis of the presentation of tax expense information (electing either the numerical format or the percentage format), which is an intended contribution of this study.

The present study aimed to explore tax rate reconciliation disclosures based on hand-collected data, to document the trends observed and to identify possible sources of fluctuations in effective tax rates based on such disclosures. The objectives of the study were:

- to describe the trend in tax rate reconciling items from 2015 to 2022 in order to identify possible sources of fluctuations in effective tax rates;
- to analyse variances in effective tax rates based on fair value adjustments and
- to analyse variances in effective tax rates based on disclosure format.

Prior literature and theoretical framework

Tax is regarded as an important element of sustainability reporting, resulting in increased demand from stakeholders for enhanced disclosures (Hoopes, Robinson & Slemrod 2023). Investors rely on tax rate reconciliations and other disclosures to evaluate income tax risks and opportunities (Financial Accounting Standards Board [FASB] 2023). Tax-related disclosure items can also be beneficial in the prediction of 1-year-ahead effective tax rates and offer those tasked with setting standards on the relevance of certain tax disclosures in achieving the objective of predicting future effective tax rates, financial earnings and tax forecasts (Guenther et al. 2023; Haas 2013). Notwithstanding the noted limitations of tax rate reconciliation disclosures, including unreported reconciling items and less transparent disclosure, recent research still demonstrates its usefulness (Nissim 2023).

In the present study, tax rate reconciliations refer to the disclosures required by *IAS 12*: *Income Taxes* wherein a

company provides an explanation of the relationship between the tax expense and accounting profit using two alternatives (IASB 2017a, IAS 12 para. 81(c)). Tax disclosures in South Africa, however, are not solely guided by IAS 12 but are also informed by other regulatory aspects of listed companies. The JSE Listings Requirements, amended with effect from 19 June 2017, mandate the implementation of King IV, the King Code on Corporate Governance for South Africa (Institute of Directors Southern Africa [IODSA] 2016). King IV is effective in respect of financial years commencing on or after 01 April 2017 resulting in further disclosures (JSE 2018). Responsible and transparent tax policy is emphasised as a corporate citizenship consideration in King IV (PwC 2016). King IV requires companies to demonstrate responsible citizenship through a governing tax policy, approved by the board of directors, that is compliant with applicable laws, takes account of reputational repercussions and enunciates aggressive tax strategies (IODSA 2016). A fundamental concept in King IV is that the governing body should be responsible for a tax policy aligned with responsible corporate citizenship and mindful of reputational repercussions. In addition, tax-related disclosures were further refined by IFRIC 23 *Uncertainty over Income Tax Treatments* issued in June 2017 and effective for periods beginning on or after 01 January 2019. IFRIC 23 is applied to the determination of taxable profit (tax losses), tax bases, unused tax losses, unused tax credits and tax rates when there is uncertainty over income tax treatments (IASB 2017b, IFRIC 23) and requires an entity to reflect the effect based on the probability that the applicable tax authorities will accept an uncertain tax treatment or not (IASB 2017b, IFRIC 23 para. 11). Despite IAS 12 remaining unchanged, the regulatory environment in South Africa may have affected disclosures since 2017/2018. It is expected that a trend towards more detailed disclosures may be noted starting from 2017/2018 because of the introduction of King IV and IFRIC 23.

The tax rate reconciling items disclosed by companies can be distinguished based on the different effects and the level of discretion of disclosure (Nissim 2023): transitory or volatile (such as goodwill impairments and changes in valuation allowances); stable over time (such as state and local taxes); related to operations (such as fixed non-deductible expenditure and research and development tax credit) and related to financing or investing activities (such as interest on state-issued bonds). The aggregate effect of tax planning activities, based on different categories of reconciling items as individual components, may also vary with respect to valuation effects (Wahab & Holland 2012). Segregating book-tax differences into different components provides indications of preferences for tax planning strategies relating to permanent differences, temporary differences and statutory tax rate differences (Wahab & Holland 2012). Accordingly, previous studies (Mgammal 2020; Wahab & Holland 2012) have classified 31 reconciling items into five broad categories:

- Permanent differences – 10 items: (1) Associates and joint ventures, (2) Expenses that have no tax effect (non-deductible), (3) Permanent differences specified, (4) Sale of property, (5) Income tax suffered, (6) Rate change adjustment, (7) Tax on capital items, (8) Withholding tax or secondary taxation, (9) Share-based payments as well as share options and (10) Tax benefit from goodwill deduction (Mgammal 2020).
- Temporary differences – 12 items: (11) Impairment of long leasehold property, (12) Recognition of a deferred tax asset not previously recognised, (13) Provided deferred tax including the movement in unprovided deferred tax asset or liability, (14) Exchange differences, (15) Timing differences, (16) Present year deferred tax, (17) Adjustments in respect of equity accounted investments, (18) Deferred tax on retirement benefit obligations, (19) Pensions and post-retirement benefits, (20) Previous period adjustments, (21) Deferred tax on unremitted earnings of overseas subsidiaries and (22) Deferred tax asset or deferred tax liability not recognised (Mgammal 2020).
- Foreign tax rate differentials – one item: (23) Subsidiaries operating in other jurisdictions (Mgammal 2020).
- Tax losses – three items: (24) Unutilised Tax Losses Offsetting (hereafter TLOS) including the tax effect of utilisation of formerly unrecognised tax losses, (25) Recognition of TLOS as well as the tax effect of utilisation of tax losses and (26) Tax effect of unrecognised or unutilised losses.
- Unclassified – five items: (27) Incentives, credits or relief, (28) Restructuring and impairment, (29) Exceptional items, (30) Other and (31) Tax on derivative financial instruments (Mgammal 2020).

These five broad categories as well as references to the Income Tax Act (Republic of South Africa 2023), hereinafter referred to as 'the Act', are elaborated on within a South African context in this section.

Permanent differences

Permanent differences are evident from tax disclosures in financial statements and include significant reconciling items requiring disclosure through the tax rate reconciliation of the effective tax rate to the statutory tax rate (Graham, Raedy & Shackelford 2012). Consequently, permanent differences do not create deferred tax assets or liabilities but rather cause effective tax rates (income tax expense divided by pretax income) to differ from statutory tax rates (Graham et al. 2012). Permanent differences could also indicate tax planning (Gaertner, Laplante & Lynch 2016; Wahab & Holland 2015) and signify a company's strategic tax planning activities, as this component reflects a portion of book-tax differences that are permanent in nature, which could imply permanent tax benefits (Zhou [2016] in Wahab [2020]). Non-taxable income, as a permanent difference, would be represented by exempt income such as dividends received from another resident company (section 10(1)(*k*) of the Act) as well as certain foreign

dividends (section 10B of the Act), which depict accruals and receipts not subjected to tax. Capital in nature accruals or receipts refer to amounts received not as the result of income-producing activities and not included in gross income (case law on the interpretation of the definition of 'gross income' in section 1(1) of the Act). Non-deductible expenditure, as a permanent difference, would be represented by expenditure not allowed as a deduction because of expenditure not incurred in the carrying on of a trade or in the production of income in terms of section 11(*a*) of the Act or expenditure specifically prohibited as a deduction in terms of section 23 of the Act (e.g., penalties and interest incurred). Capital in nature expenditure furthermore includes specific non-deductible expenditure resulting in the acquisition or establishment of an income-producing asset or right (case law on the interpretation of section 11(*a*) of the Act).

In prior literature, permanent differences have also been classified as positive or negative (Gaertner et al. 2016). Positive permanent differences are favourable differences resulting in taxable income being lower than accounting profit (for example, exempt income or non-taxable income), whereas negative permanent differences are unfavourable differences resulting in taxable income being higher than accounting profit (for example, non-deductible expenditure) (Gaertner et al. 2016). A further grouping of permanent differences as positive or negative could accordingly enhance the contribution of the present study. Tax rate change adjustments affect the tax rate reconciliation in respect of deferred tax. In a South African context, two rate changes would have impacted corporates during the period from 2015 to 2022: (1) the inclusion rate at which capital gains are included in normal tax, referred to as the effective capital gains tax (hereafter CGT) rate, increased for corporates from 66.6% to 80% in respect of years of assessment commencing on or after 01 March 2016 (Republic of South Africa 2016b) and (2) the corporate tax rate in South Africa was reduced from 28% to 27% for companies for years of assessment with effect from years of assessments ending on or after 31 March 2023 (National Treasury 2021). These tax rate changes could represent a permanent difference because the corresponding adjustments against deferred tax in respect of a rate change are not deductible or taxable for tax purposes. For the purposes of this study, there is no specific expected trend concerning permanent differences, apart from the tax rate change adjustments based on the literature. Therefore, the study intends to explore the trend based on data collected.

Temporary differences

Temporary differences represent instances where the timing of deductions or the taxability of amounts differ between accounting standards and tax legislation. Deferred taxes are informative for financial statement users in terms of value relevance despite varying results concerning the value relevance of deferred tax liabilities (Görlitz & Dobler 2023). Deferred tax assets and deferred tax expenses are value-relevant in predicting future income taxes, cash flows, earnings, market values, abnormal returns, rating changes and future credit risks (Görlitz & Dobler 2023). Temporary differences indicate reversal strategies of tax planning, but despite their temporary nature, these differences have been identified as a notable component in tax planning relating to tax shelters (Gaertner et al. 2016; Wahab 2020). In addition, persistent temporary differences can generate permanent tax savings where consistent new temporary differences replace reversed temporary differences over time (Wahab & Holland 2015). Therefore, despite their temporary nature, the trend in temporary differences over time requires careful consideration.

Income or loss of a capital nature as a temporary difference would include recoupments (section 8(4)(*a*) of the Act) or allowances resulting from the alienation, loss or destruction of an allowance asset (section 11(*o*) of the Act) in respect of the disposal of depreciable assets, as well as any resulting CGT (section 26 of the Act read with the Eighth Schedule of the Act). From a tax perspective, section 24JB of the Act applies to gains and losses on 'financial assets' and 'financial liabilities' as defined in IFRS 9 for years of assessment commencing on or after 01 January 2014 (Rudnicki 2013). Section 24JB of the Act applies in respect of companies that are brokers, banks or part of a banking group, stipulating that amounts recognised in profit or loss for accounting purposes should be included or deducted for tax purposes.

In the South African banking sector, a combination of the introduction of IFRS 9 and the outbreak of the COVID-19 pandemic resulted in a significant increase in credit impairments in recent years, which consequently affected the regulatory capital of banks because of the recognition of deferred tax assets (Abuka 2023). Additionally, deferred tax assets arising from temporary differences constitute a larger component of regulatory capital in the post-IFRS 9 era (Abuka 2023). For other companies to which section 24JB does not apply (i.e. those that are neither brokers nor banks or part of a banking group), the fair value adjustments for accounting purposes could result in permanent or temporary differences that may affect effective tax rates. These adjustments could explain fluctuations in effective tax rates and warrant consideration in the present study. For the purposes of the study, it is therefore expected that fair value adjustments as a reconciling item will increase since 2019 as a result of the introduction of IFRS 9 and the impact of the COVID-19 pandemic.

Foreign tax rate differentials

Foreign tax rate differentials are categorised separately because of the different nature of explaining tax planning (Mgammal 2020). These differentials refer to taxes incurred by subsidiaries operating in foreign jurisdictions, including items such as 'different tax rates' and 'withholding taxes' that are not otherwise specified or clarified in tax rate reconciliation disclosures. In the South African context, section 6*quat* of the Act affords a credit for foreign taxes incurred; however, this credit is included as a tax incentive under a separate category (under section 2.5) and not as part of foreign tax rate differentials. For the purposes of this study, no specific trend is expected in respect of foreign tax rate differentials.

Therefore, the study intends to explore the trend based on the data collected.

Tax losses

Tax losses are categorised separately as a component because of the different nature in explaining tax planning (Mgammal 2020). In the present study, tax losses refer to assessed losses allowed to be carried forward (section 20 of the Act) and are linked to deferred tax assets recognised to the extent that future taxable income is probable (IASB 2017a, IAS 12 paras. 24 & 34). Further voluntary disclosure of tax loss uncertainties, regarding the utilisation of the tax losses carried forward, enriches the information environment, as managers provide additional information to meet investor expectations (Flagmeier & Müller 2022). The valuation allowances recorded by companies in the USA relate to tax loss deferred tax assets that are unlikely to be realised (Drake et al. 2020) and have been highlighted because of their discretionary nature (Nissim 2023). In the South African context, companies are not required to recognise valuation allowances as in the USA; however, a deferred tax asset would be recognised to the extent that future taxable income is probable.

The near-total cessation of economic activity followed by a somewhat haphazard partial reopening of the economy during the COVID-19 pandemic wreaked havoc on South Africa's tax base (Ajam & Davis 2020). Cash-flow-related variables significantly affected company performance during the pandemic year, with the real estate and basic materials sectors among the worst affected, based on actual versus forecasted performance (Muthu & Wesson 2023). The resulting lower economic activity likely increased the assessed losses carried forward by companies during the pandemic as well as post-pandemic. Companies fortunate enough to have survived the pandemic will be able to carry forward their assessed tax losses for many years, potentially resulting in a drastic reduction in revenue flows to the fiscus (Ajam & Davis 2020). Section 20 of the Act was amended, with effect from years of assessments ending on or after 31 March 2023, resulting in a potential limitation on the tax losses carried forward by companies. However, this amendment did not impact the present study, as the target period extends only to 2022. For the purposes of this study, it is therefore expected that assessed losses as a reconciling item will have increased since 2019 because of the pandemic.

Unclassified (incentives, credits or relief)

The last broad category is unclassified (incentives, credits or relief), which are included as reconciling items. In the South African context, specific incentives, credits and relief relating to corporates were identified for the purposes of this study. Firstly, a learnership allowance (an incentive) is an additional allowance (deduction) in respect of registered learnership agreements, intended to encourage employers to create and develop skills by providing an additional tax deduction over and above the deduction of salary costs (Rudnicki 2016). Section 12H of the Act was introduced in South Africa in 2002 (Republic of South Africa 2002) and amended in 2006 (Republic of South Africa 2005) to include additional incentives for disabled employees, with a further refinement in 2016 (Republic of South Africa 2016a) linked to the National Qualifications Framework (NQF) skill level of employees.

Secondly, research and development incentives, represented by additional deductions of 50% of the expenditure incurred in respect of qualifying research and development (section 11D of the Act), provide an additional deduction. This allowance is not directly linked to expenditure considered in the calculation of profit before tax. While section 11D of the Act provides generous income tax incentives, the interpretation thereof has been recognised as a potential hindrance in attaining the goal sought by the South African National Treasury to promote sustainable development in the country through science and technology (Strauss 2011). Other additional allowances (incentives) represent energy-efficient projects approved before 31 March 2020 (section 12I of the Act) and investment in Venture Capital Companies in respect of shares acquired on or before 30 June 2021 (section 12J of the Act). The only credits expected to be reflected as a reconciling item are foreign taxes allowed as a rebate against South African normal tax (section 6*quat* of the Act) or explicit tax credits afforded by governments of other jurisdictions, as disclosed in tax rate reconciliation disclosures. For the purposes of the present study, no specific trend is expected with respect to unclassified items (incentives, credits or relief); therefore, the study intends to explore the trend based on the data collected.

In conclusion, a summary of the expected tax rate reconciliation components relating to companies, based on theoretical analysis of the Act and literature, is provided in Table 1 in the five categories previously applied in literature (Mgammal 2020; Wahab & Holland 2012).

Research methodology and methods

Research methodology

This research study is based on the positivistic paradigm, which holds an ontological foundation that views the world objectively and independently from knowledge (epistemology) and apart from the researcher (McKerchar 2008). Prior to conducting the study, ethical clearance was obtained to ensure that all research conducted complied with the necessary ethical requirements. The research was approached from an objectivist's view as a rigorous scientific research process detached from the values and beliefs of the researcher (Saunders, Lewis & Thornhill 2019). The study was exploratory in nature, characterised as both empirical and descriptive. Exploratory research can offer noteworthy insights and represent the initial research that forms the basis of more conclusive studies (Singh 2007). This study, as an exploratory investigation, was not intended to provide explanatory evidence based on tax rate reconciliation

TABLE 1: Theoretical rate reconciliation components.

Reconciling item	Description
Category 1: Permanent differences	
Non-taxable income	Exempt income (section 10) and foreign dividends (section 10B)
Capital in nature receipts	Accruals or receipts not included in gross income (section 1(1))
Non-deductible expenditure	Expenditure prohibited as a deduction (section 23), other than penalties and interest
Penalties and interest	Non-deductible penalties and interest incurred (prohibited by section 23)
Capital in nature expenditure (non-deductible)	Expenditure of a capital nature such as expenditure in acquiring an income-producing asset or right (case law on interpretation of section 11(a))
Tax rate changes	The increase in the effective rate of CGT in respect of corporates as well as the corporate tax rate reduction from 2022
Category 2: Temporary differences	
Deferred tax	Deferred tax implications excluding assessed losses recognised under a separate category
Allowance assets temporary differences	Capital allowances that differ from accounting depreciation include possible recoupment (section 8(4)(a)); allowances resulting from the alienation; loss or destruction of an allowance asset (section 11(o)) and CGT consequences
Fair value adjustments	Accounting adjustments in terms of IFRS 9 are not afforded as a deduction or inclusion for tax purposes
Category 3: Foreign tax rate differentials	
Foreign taxes	Taxes incurred by subsidiaries operating in foreign jurisdictions, including items referred to as 'different tax rates' and 'withholding taxes' not otherwise specified or clarified
Category 4: Tax losses	
Tax losses	Assessed losses carried forward (section 20) and linked to deferred tax as a deferred tax asset for accounting purposes
Category 5: Unclassified (incentives, credits or relief)	
Incentives	Learnership allowances (section 12H); research and development (section 11D); energy-efficient projects (section 12I) and investment in Venture Capital Companies (section 12J)
Tax credits	Foreign taxes rebate (section 6quat) or tax credits specified
Exceptional items	Includes the provision for tax recognised or reversed during a year and inter-group eliminations
Tax on derivative financial instruments	If explicitly stipulated, the reconciling item is tax relating to a derivative instrument

Note: All references to sections are references to sections in the income tax act and for each category, the reconciling items not specified would be classified as 'other'.
CGT, capital gains tax; IFRS, international financial reporting standards.

disclosures. Instead, it aimed to provide insights into the trend in such disclosures and possible explanations for fluctuations in effective tax rates that could serve as the basis for further empirical research.

Target period and population

The target period of the present study includes financial years from 2015 to 2022. The population for this study comprises of companies listed on the JSE for the entire period of 2015 to 2022. Companies often adjust their effective tax rates by 1%–2% points on average, either up or down, during the first 3 years following a significant initial public offering upon entrance to an industry (Chyz et al. 2023). To eliminate the confounding factor of these potential adjustments by newly listed companies, only companies listed since at least 2012 (3 years prior to the present study's target period) were included.

In line with previous studies, Real Estate Investment Trusts (hereafter REITs) are excluded from the study because of the fact that these corporate entities are subject to different tax regimes (Greeff 2019; Van der Spuy & De Jager 2023). Unlike many studies that exclude banks and financial institutions because of their unique business models, this study retained them based on research suggesting that these companies play an important role as facilitators of corporate tax avoidance (Van der Spuy & De Jager 2023). Using these selection criteria, a total of 140 companies were identified as the study population.

Data

The study utilised data from three sources: (1) hand-collected data from the tax rate reconciliation disclosures in the financial statements of companies, (2) financial data obtained from the Bloomberg database and (3) Industry Classification Benchmark (hereafter ICB) classifications obtained from the JSE. The ICB is a globally utilised standard for the categorisation and comparison of companies by industry and sector (JSE n.d.).

A potential benefit of using data from tax disclosures in annual financial statements is that these disclosures are subject to audits, which provide some assurance regarding the reliability of the data. To enhance confidence in the financial statements, a qualified external party (an auditor) is engaged to examine the financial statements, including related disclosures, produced by management. The purpose of the annual audit of financial statements is to provide users with an opinion on whether the financial statements fairly present, in all material respects, the key financial information for the reporting period in accordance with the financial reporting framework and applicable legislation (Auditor-General South Africa 2022). Accordingly, an audit is intended to provide the users with reasonable assurance about how reliable and credible the financial statements are based on whether or not the audit procedures performed revealed any material errors or omissions in the financial statements (Auditor-General South Africa 2022). Historically, companies listed on the JSE have been found to mostly comply with the income tax presentation and disclosure requirements in their annual financial statements (Meyer et al. 2006; Penning 2014). The following data relating to tax rate reconciliations were hand collected from the notes to the financial statements of the companies included in this study's population:

- The effective tax rate disclosed by companies represents the accounting effective tax rate (*aetr*), which expresses income tax as a percentage of profit before tax.
- The reconciling items disclosed by companies were allocated to different categories as established in Table 1, with 15 specific categories and five broad categories considered in this study. A variable was created for each reconciling item disclosed for each firm-year observation, with a value of '1' assigned if the reconciling item was classified in an applicable category, and '0' assigned if it was not classified in an applicable category.
- The top three reconciling items for each firm-year observation, based on value (numeric or percentage), were recorded in order to document the most notable categories of reconciling items over the period that would explain fluctuations in effective tax rates.
- For each of the top three reconciling items classified as permanent differences a further classification as positive permanent differences (favourable differences resulting in taxable income being lower than accounting profit) and negative permanent differences (unfavourable differences resulting in taxable income being higher than accounting profit) was performed to further elaborate on the trend in permanent differences.
- The format of disclosure, whether numeric or percentage, was captured. Each firm-year observation where the reconciling items were presented in a numeric format (using only Rand values, not percentages) was classified as 'Numeric'. Conversely, each firm-year observation where the reconciling items were presented in a percentage format (not using merely Rand values) was classified as a 'Percentage'.

Applying more than one form of effective tax rate could contribute to improving robust results and overcoming some of the limitations posed by the accounting effective tax rate (Stiglingh, Smit & Smit 2022). Accordingly, this study considered cash effective tax rates (*cetr*) in addition to accounting effective tax rates (*aetr*). Data in respect of cash effective tax rates (*cetr*) were calculated based on financial data obtained from the Bloomberg Terminal representing cash tax paid scaled to profit before tax (Bloomberg fields: CF_CASH_PAID_FOR_TAX divided by PRETAX_INC_ EXCL_ABN). The income tax field (IS_INC_TAX_EXP) includes tax expenses resulting from income (from federal, local or foreign sources), deferred income taxes and provisions for taxes in respect of prior periods, the associates or joint ventures' share of tax expense when disclosed under income taxes by the company and in a South African context, tax charges (or benefits) on exceptional, unusual or abnormal items (Bloomberg 2023). The income tax field (IS_INC_TAX_EXP) excludes any taxes other than income taxes, as other taxes are included as a portion of operating expenses (Bloomberg 2023).

Data regarding industries were obtained, representing the ICB industry names (ICBIndustryShortName and ICBSuperSectorLongName), from the JSE. In a South African context, substantial variation in marginal effective tax rates depends on economic sectors, with some sectors benefitting from accelerated depreciation and favourable tax treatment of debt (Ebrahim et al. 2019). The eligibility of certain sectors for accelerated allowances and beneficial tax treatment underscores the potential information value of tax rate reconciliations, as companies are mandated to disclose such significant items. Industry classification was accordingly included in the mixed-model analysis of variance to control for potential industry-specific factors.

Data analysis

Data analysis was performed by means of descriptive statistics and a mixed-model analysis of variance. Descriptive statistics were analysed based on the frequency of reconciling item categories disclosed in tax rate reconciliations and the top three reconciling items were also ranked (based on the numeric or percentage size of the reconciling items) to capture the extent or magnitude to which reconciling items explain the trends noted. A mixed-model analysis of variance was then performed to investigate whether effective tax rates differed statistically significant based on five grouping variables (tax rate type, year, industry, fair value adjustment and disclosure format). Log transformation was applied to the tax rate variables plus one in the mixed-model analysis of variance. Normal probability plots were then inspected for each variable to determine whether effective tax rates required winsorisation. Conducting Fisher's least significant difference (LSD) post hoc tests, the study investigated the statistical difference between the means of pairs. The significance of the movement in each variable was evaluated using F-statistics and the calculated probability (*p*-value) for each variable by applying a 10% significance level ($p < 0.10$ was regarded as significant). The mixed-model analysis of variance was performed using the Variance Estimation and Performance Analysis with Correlated Data module in TIBCO Statistica (Version 13), which is a data analysis and visualisation program.

Ethical considerations

An application for full ethical approval was submitted to the Research Ethics Committee: Social, Behavioural and Education Research (REC: SBE) and ethics consent was received on 17 July 2023. The ethics waiver number is ACC-2023-28647. The committee issued an ethics waiver for the study because it does not involve the participation of human participants or the use of personal identifiable information.

Findings

Description of the trend in reconciling items from 2015 to 2022

Based on the data collected from 1120 firm-year observations, a total of 4872 reconciling items were classified into different categories for the period from 2015 to 2022. In considering the trend in the observations for each category of reconciling items, a comparison of the first half of the target period (2015 to 2018) and the second half of the target period (2019 to 2022) is illustrated in Figure 1.

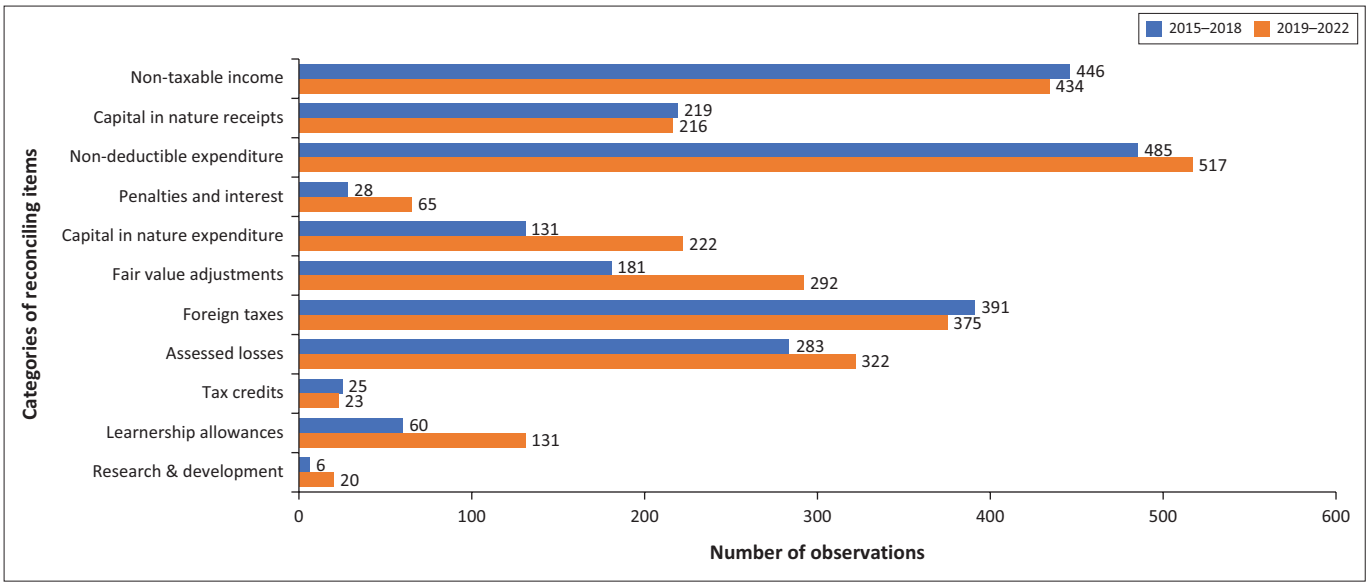


FIGURE 1: Number of observations per category compared between the first period (2015–2018) and the second period (2019–2022).

Noticeably, there was an increase in the majority of categories, with seven out of 11 specific categories showing an upward trend during the second half of the target period. In line with similar studies conducted in China (Mei 2021) and in Spain (Gallego 2004), the major types of tax adjustments by South African companies based on tax returns for the period 2013 to 2018 have been noted as credit adjustments that increase taxable income rather than debit adjustments that decrease taxable income (Schutte & Van der Zwan 2024). The findings of the present study for the period 2019 to 2022 confirm, in line with prior studies, that the major categories of credit adjustments (non-deductible expenditure and capital in nature expenditure) exceeded the major categories of debit adjustments (non-taxable income and capital in nature receipts). The most prominent increases in the number of observations were in respect of capital in nature expenditure, fair value adjustments and learnership allowances. Assessed losses increased during the second half of the target period, as expected, reflecting the financial impact of the COVID-19 pandemic (Ajam & Davis 2020). This negative financial impact could have extended to the disposal of major business segments or assets, which may account for the increases in the capital in nature expenditure noted because of potential capital losses or allowances resulting from the alienation, loss or destruction of an allowance asset in terms of section 11(*o*) of the Act.

As expected, fair value adjustments increased notably during the second half of the target period, largely because of the implementation of IFRS 9. The increase in the prevalence of these adjustments warrants further investigation because of their discretionary nature (Nissim 2023), as they may have potential implications for effective tax rates, often applied as a proxy for tax avoidance. Despite the increase in research and development expenditures during the second half of the target period (2019 to 2022), this category had the lowest number of observations. Although generous deductions are available for research and development (section 11D of the Act), the lower uptake observed in this study could potentially be explained by the complexities of interpretation. The introduction of an online system for application during 2022 served as a welcomed change in respect of the administration of the research and development tax incentive contemplated in section 11D (Du Raan 2023). Further amendments since 2024, including the extension of the sunset clause contained in section 11D and as well as a 6-month grace period prior to the date of the application, are also positive developments in the interest of researchers and innovators (Du Raan 2023). However, certain detail refinements to section 11D remain outstanding and recommended, in particular relating to patents (Javangwe 2021). Despite recent developments relating to section 11D further refinements to promote sustainable development in South Africa through the utilisation of science and technology are therefore recommended (Javangwe 2021; Strauss 2011).

Based on the number of observations, a trend was noted; however, the number of these observations could differ in magnitude in explaining fluctuations in effective tax rates. Categories with a high number of observations, such as learnership allowances, are expected to be of a lower Rand value and, accordingly, explain fluctuations in effective tax rates to a lesser extent. In contrast, categories with a low number of observations, such as fair value adjustments and research and development, are expected to be of higher Rand values and, therefore, explain fluctuations in effective tax rates to a greater extent. Instead of solely focussing on a number of observations, the top three reconciling items were also ranked for further investigation (based on the numeric or percentage size of the reconciling items) in order to capture the extent to which reconciling items explain the trends noted. The number of observations for the top three reconciling items in each of the five broad categories is illustrated in Figure 2.

The findings suggest that permanent differences represented the main category for the entire period considered. Permanent differences could provide indications of aggressive tax planning (Gaertner et al. 2016), and given their significance as the top reconciling item category among listed companies in South Africa, they merit further consideration in future research. Foreign tax rate differentials and temporary differences represented the second-largest categories throughout the period. A fluctuation in the categories during 2019 and 2020 is notable and in line with expectations based on the impact of the COVID-19 pandemic. Despite tax losses and unclassified (incentives, credit or relief) being noted as the categories with the fewest observations in the top three reconciling items, the inclusion of these categories in the top three reconciling items for certain companies underscores the significant impact these categories have on explaining fluctuations in effective tax rates.

Prior findings suggest that the trend of lower cash-effective tax rates documented in the USA stems from positive (favourable) permanent and temporary differences (Gaertner et al. 2016). Schutte and Van der Zwan (2024) found that non-taxable (positive) permanent differences significantly exceeded non-deductible (negative) permanent differences for South African companies for the period 2013 to 2018. The present study found for listed companies that the top three reconciling items classified as permanent differences for the period 2015 to 2022 consisted of 51.66% positive permanent differences and 48.34% negative permanent differences. This finding suggests that positive permanent differences were only marginally more important, contrary to the significant difference noted by Schutte and Van der Zwan (2024) in respect of all companies, in explaining the fluctuation of effective tax rates of listed companies over the period 2015 to 2022. The importance of both positive and negative permanent differences with respect to listed companies is therefore highlighted by the present study, contrary to the findings in the USA by Gaertner et al. (2016) that positive (favourable) differences are more prevalent in explaining fluctuations in effective tax rates.

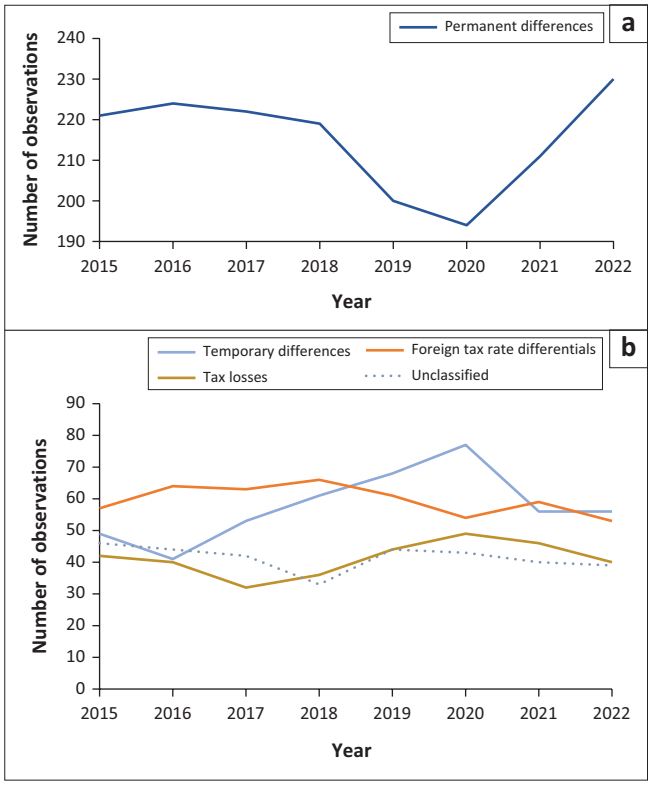
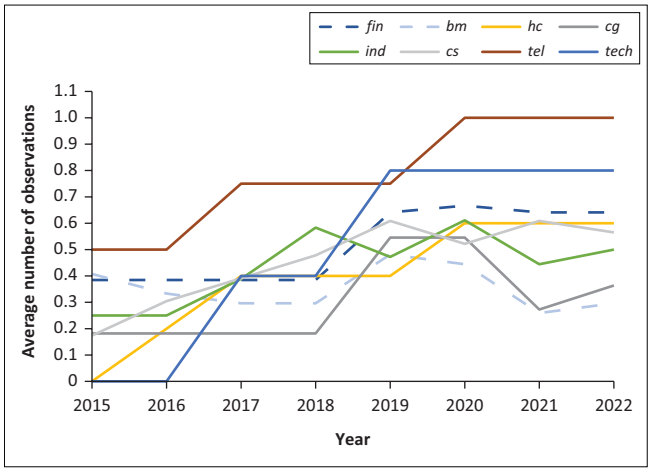


FIGURE 2: Number of observations for the top three reconciling items in each of the five broad categories: (a) permanent differences and (b) temporary differences; foreign tax rate differentials; tax losses; and unclassified (incentives, credits or relief).

In respect of fair value adjustments, an analysis of the trend for each of the eight industries over the target period is illustrated in Figure 3.

For all industries, an increase in fair value adjustments as reconciling items was noted since 2019 in line with expectations based on the COVID-19 pandemic and the introduction of IFRS 9. The findings, however, highlighted the importance of industry-specific factors as the telecommunication (*tel*) and technology (*tech*) industries were noted with the highest average number of fair value adjustments as reconciling items. This finding is contrary to the expectation that companies in the financial sector, especially banks would be most affected by the introduction of IFRS 9 (Ben Ltaief & Moalla 2023) and highlight the importance of industry classification when investigating fluctuations in effective tax rates.

The present study contributes by adding to the only previous study in a South African context, that of Meyer et al. (2006), by confirming that the majority of firm-year observations selected (85%) applied the percentage format, whereas the remaining firm-year observations selected (15%) applied the numeric format during the target period considered. The numeric disclosure format was elected by 30 companies across six of the eight industries, with no numeric format noted for companies in two industries (being, the healthcare



Note: Industry classification: financials (*fin*); basic materials (*bm*); healthcare (*hc*); consumable services (*cs*); industrials (*ind*); consumable goods (*cg*); telecommunication (*tel*) and technology (*tech*).

FIGURE 3: The number of fair value adjustments on average for each company in each of the industries (number of fair value adjustment observations divided by the number of companies in industry).

[*hc*] and telecommunications [*tel*]) industries. It was observed that some companies reported their effective tax rate as a percentage separately in their annual reports while disclosing their reconciling items in numeric format. Notably, the 30 companies that elected the numeric format did not separately disclose their effective tax rate as a percentage in their annual reports. Based on the descriptive statistics, the numeric format of disclosure was therefore not concentrated solely within a single industry but was represented across various industries.

In conclusion, the study documents specific trends in reconciling items based on disclosures. The data collected demonstrate a noticeable increase in the level of detail in disclosure in tax rate reconciliations, particularly from 2018 onwards. This finding aligns with expectations based on the introduction of King IV and amendments to the JSE Listings Requirements mandating the implementation of King IV (JSE 2018; PwC 2016). The increased detail of disclosure enhances the potential information value of such disclosures for future research focussing on periods from 2018 onward. Contrary to the conclusion of Schutte and Van der Zwan (2024) that tax return data lacked detail because of the 'other' category, which significantly limited their ability to describe book-tax differences in more detail, the present study was not hampered or significantly limited as disclosed tax rate reconciliations were found to be in sufficient detail with only a negligible number of reconciling items being disclosed as 'other' without further detail. This finding of the present study contributed to existing literature (Meyer et al. 2006; Penning 2014) in support of the consistent and detailed tax disclosures by listed companies. While the enhanced disclosures since 2018 did not affect the trends in the broad categories documented in this study, as illustrated in Figure 2, they were noted for some of the detailed categories included in Figure 1. The descriptive trends noted concerning fair value adjustments and disclosure formats are further extended in the 'Analysis of variance in effective tax rates' section.

Analysis of variance in effective tax rates

The research study utilised a mixed-model analysis of variance to investigate the effective tax rates of companies based on five grouping variables: tax rate type, year, industry, fair value adjustment and disclosure format. The analysis included the interaction between grouping variables to investigate whether the tax rates varied over time with respect to industry (*industry*year*); disclosure format (*format*year*) and fair value adjustments (*fair value*year*). It was further investigated whether tax rates varied based on tax rate type (*aetr* vs *cetr*). The results from the analysis of variance in effective tax rates are provided in Table 2.

Effective tax rates did not show significant variation over years (*year*), across industries (*industry*) or for industries over time (*industry*year*), suggesting that effective tax rates did not fluctuate significantly over the study period. Industry classification (*industry*) approximates significance at the 10%-level based on Table 2 and this finding suggests the importance of industry in explaining differences in tax rate types. The variation in effective tax rates was then expanded by employing a post hoc test with respect to fair value adjustments and disclosure format, as submitted in Figure 4 and Table 3, respectively, in pursuit of the research objectives of the study.

Fair value adjustments *(fair value)* were found to be a statistically significant explanation for the variation in effective tax rates at the 10% significance level in respect of cash effective tax rates (*cetr*). In line with expectations, fair

TABLE 2: Analysis of variance in effective tax rates.

Variable	Num *df*	Den *df*	*F*	*p*
Tax rate type	1	1974	3.87	0.05**
Year	7	1974	1.52	0.16
Industry	7	134	1.76	0.10
Industry*year	49	1974	0.97	0.53
Fair value	1	1974	3.02	0.08*
Fair value*year	7	1974	2.09	0.04**
Format	1	1974	8.48	< 0.01***
Format*year	7	1974	3.93	< 0.01***

Note: An analysis of variance in effective tax rates (*cetr*) for each of the grouping variables with the *F* statistic and the two sets of degrees of freedom, one for the numerator, one for the denominator and the significance level (*p*).

F, *F* statistic; *df*, degrees of freedom; Den, denominator; Num, numerator.

*, $p < 0.10$; **, $p < 0.05$; ***, $p < 0.001$.

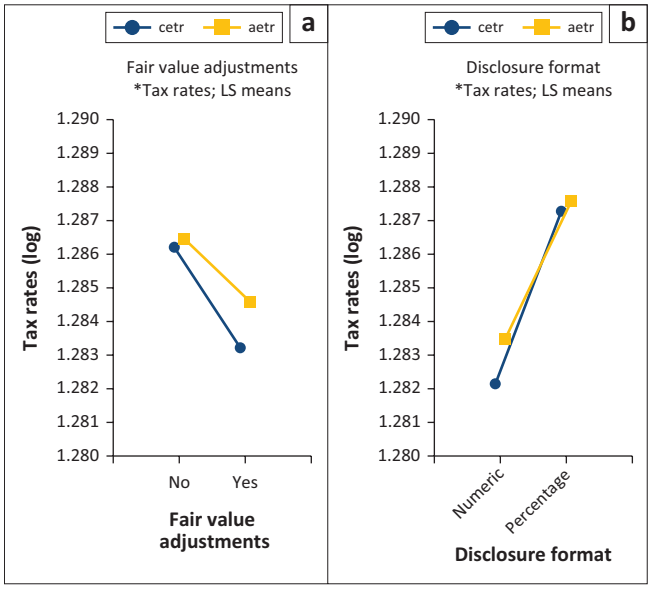
TABLE 3: Fisher's least significant difference post hoc tests.

Category	1st Mean	2nd Mean	MD	SD	*p*
Fair value adjustments	No*cetr	Yes*cetr	0.0030	0.0017	0.076***
	No*aetr	Yes*aetr	0.0019	0.0017	0.261
Disclosure format	Numeric*cetr	Percentage*cetr	-0.0051	0.0016	0.001**
	Numeric*aetr	Percentage*aetr	-0.0041	0.0015	0.008**

Note: An analysis of variance in effective tax rates (*cetr*) for each of the categories with the mean difference and standard deviation presented for each of the post hoc tests.

MD, mean difference; SD, standard deviation.

*, $p < 0.10$; **, $p < 0.05$; ***, $p < 0.001$.



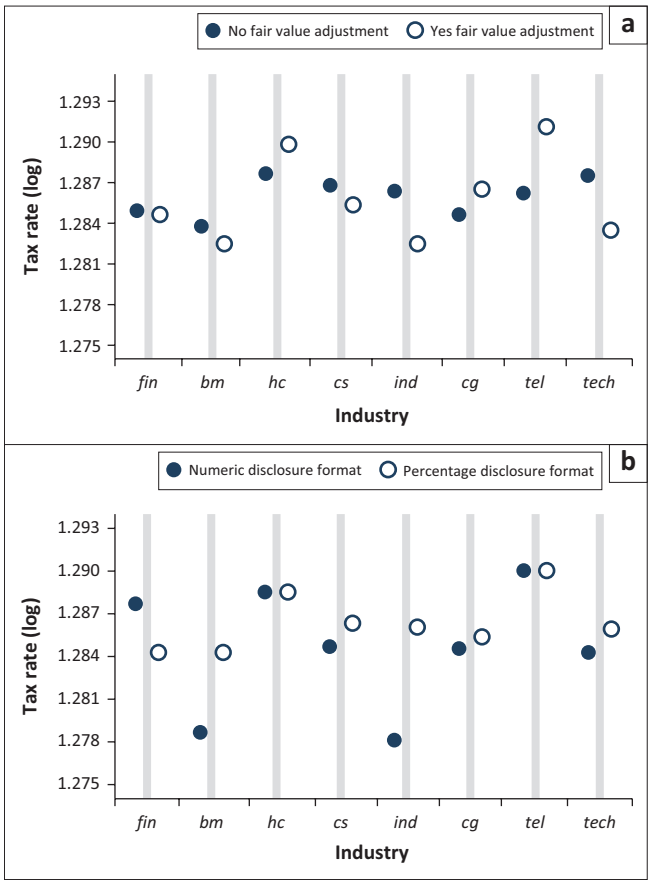
Note: With the least square means (*LS Means*) for each of the tax rates (*cetr* and *aetr*) compared for observations with and without fair value adjustments (a: first graph) and compared for observations with the numeric and percentage disclosure format (b: second graph).

FIGURE 4: Fair value adjustments and disclosure format categories variation in effective tax rates: (a) based on fair value adjustments and (b) based on disclosure format.

value adjustments and effective tax rates varied significantly over time (*fair value*year*), particularly when considering all industries following the introduction of IFRS 9 in 2018 and the subsequent confounding impact of the COVID-19 pandemic. Since 2018, when IFRS 9 became effective, a notable increase in the number of fair value adjustments was noted in total (Figure 1) as well across industries (Figure 3). Analysis of firm-year observations revealed that instances with a fair value adjustment ('Yes') were associated with lower effective tax rates compared to those without fair value adjustments ('No'), as evident from Figure 4, with the lower *cetr* being statistically significant (Table 3). These findings enunciate the importance of fair value adjustments in explaining fluctuations in effective tax rates.

Disclosure format (*format*) was found to be a statistically significant explanation contributing to the variation in effective tax rates and varied over time (*format*year*), based on Table 2. The variation in effective tax rates based on the disclosure format category, evident from Figure 4, further highlights lower effective tax rates for both tax types. Additionally, both tax types were statistically significantly lower for the numeric disclosure format, based on Table 3. This finding confirms the importance of disclosure format in explaining some variation in effective tax rates and is in line with the previous study by Chychyla et al. (2022) in the USA, which found that companies with lower effective tax rates are more likely to use the numeric format, as opposed to the percentage format.

A further analysis of the tax rates for observations from each of the eight industries with respect to fair value adjustments and disclosure format is illustrated in Figure 5.



Note: With the least square means (*LS Means*) for tax rates (*cetr*) compared for observations for each of the eight industries with and without fair value adjustments (a: first graph) and compared for observations with the numeric and percentage disclosure format (b: second graph).

fin, financials; bm, basic materials; hc, healthcare; ind, industrials; cs, consumable services; cg, consumable goods; tel, telecommunication; tech, technology.

FIGURE 5: Fair value adjustments and disclosure format categories variation in effective tax rates per industry.

In respect of fair value adjustments the majority of industries with fair value adjustments had lower tax rates – most notable being for industrials (*ind*) and technology (*tech*). Whereas the remaining industries with fair value adjustments had higher tax rates – most notably telecommunications (*tel*). With respect to disclosure format, no observations were noted for numeric disclosure format in two industries (healthcare (*hc*) and telecommunications (*tel*)). Only in one industry, financials (*fin*), numeric disclosure format was noted as being associated with higher tax rates. For all other industries for numeric disclosure format had lower tax rates – most notable being for basic materials (*bm*) and industrials (*ind*). The basic materials industry has already been highlighted as being distinguishable from other industries based on their capital intensity and operations (Stiglingh et al. 2022); however, the present study also highlights the industrials (*ind*) industry is also being distinguishable from other industries based on fair value adjustments and disclosure format as explanations for fluctuations in effective tax rates as well.

Conclusion

The descriptive findings of the study illustrate the potential information value of tax rate reconciliation disclosures and suggest further empirical research that can be conducted by applying data obtained from such tax disclosures.

The first objective of the study was to examine and describe the trend in tax rate reconciliation disclosures of JSE-listed companies for the period from 2015 to 2022. The study highlights permanent differences as the main explanation for fluctuations in the effective tax rates of the selected listed companies. These permanent differences may indicate aggressive tax planning (Gaertner et al. 2016). The importance of both positive and negative permanent differences in explaining the fluctuation of effective tax rates of listed companies is highlighted by the present study over the period 2015 to 2022, contrary to the prior findings of Schutte and Van der Zwan (2024) and Gaertner et al. (2016). Additional empirical research is recommended within a South African context to expand on the descriptive findings of the study assessing the impact of notable reconciling items on effective tax rates through multivariate and cross-sectional analyses (Drake et al. 2020); exploring the effect of corporate tax planning on tax disclosure (Mgammal 2020) and examining the influence of the top management team on tax strategies (Wahab 2020). Further empirical research will contribute to the debate on possible

explanations for fluctuations in effective tax rates within a South African context.

The study's second objective was to analyse variances in effective tax rates based on two fair value adjustment categories – comparing observations with fair value adjustments to observations without fair value adjustments. Fair value adjustments as a reconciling item were found to have increased since 2019, conceivably because of the introduction of IFRS 9, and were found to be a statistically significant explanation for the variation of effective tax rates when considering all industries. These findings highlight the importance of fair value adjustments as well as industry classification in explaining fluctuations in effective tax rates. Further research relating to periods since 2019, during which effective tax rates are considered, should give due consideration to fair value adjustments as an explanation for fluctuations in effective tax rates.

The third objective of the study was to analyse variances in effective tax rates based on two disclosure format categories, comparing observations presented in a numeric format to those in a percentage format. Based on the findings, the study concluded that in a South African context, the disclosure format was statistically significant in explaining fluctuations in effective tax rates. Companies electing the numeric format for disclosure were found to have lower effective tax rates, consistent with the findings of Chychyla et al. (2022) in the USA. The recommendation stemming from this finding is that future research considering effective tax rates within a South African context should include disclosure format as a control variable in analyses.

The findings of this study have a policy implication in respect of tax incentives. It was noted that the incentive for learnership allowances (section 12H of the Act) was increasingly utilised by listed companies over the second half of the target period from 2019 to 2022 (Figure 1). A further extension of section 12H of the Act, to apply after the recently indicated sunset clause of 31 March 2027 (National Treasury 2024), is therefore recommended to continue incentivising job creation and skills development. Furthermore, the tax incentive for research and development (section 11D of the Act) was noted to have a low uptake among selected companies and could warrant further refinement to promote sustainable development in South Africa utilising science and technology (Javangwe 2021; Strauss 2011).

In conclusion, the descriptive findings of the study provide insights into potential fluctuations in effective tax rates and suggest areas for further research within a South African context. The study highlights a trend towards more detailed levels of disclosure in tax rate reconciliations, particularly since 2018, aligning with the regulatory expectations (JSE 2018; PwC 2016). This finding of the present study contributed to existing literature (Meyer et al. 2006; Penning 2014) in support of the consistent and detailed tax disclosures by listed companies. The increase in detailed disclosures noted in this study further supports the value and relevance of such tax disclosures in future research.

Acknowledgements

The authors would like to acknowledge and thank Prof. Martin Kidd (Centre for Statistical Consultation, Stellenbosch University) for assistance with the data preparation (winsorising and transformation) performed with respect to this study.

Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

R.N. conceived of the presented idea and was primarily responsible for the literature review and data analysis. A.v.N. was primarily responsible for data collection and also contributed to the interpretation of findings. R.N. and A.v.N. contributed to the final version of the article.

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability

The data that support the findings of this study are available upon request from the corresponding authors, R.N.

Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. It does not necessarily reflect the official policy or position of any affiliated institution, funder, agency or that of the publisher. The authors are responsible for this article's results, findings and content.

References

Abuka, K., 2023, 'How IFRS 9 has impacted deferred tax assets and bank regulatory capital in South Africa', Master's dissertation, University of Cape Town, viewed 14 November 2023, from http://hdl.handle.net/11427/39158.

Ajam, T. & Davis, D., 2020, 'Unprecedented tax collapse endangers post-COVID-19 recovery', *Daily Maverick*, viewed 19 April 2024, from https://www.dailymaverick.co.za.

Auditor-General South Africa (AGSA), 2022, *Overview*, viewed 08 October 2024, from https://mfma-2022.agsareports.co.za/pages/audit-101.

Ben Ltaief, K. & Moalla, H., 2023, 'The impact of financial assets' classification according to IFRS 9 on firm value: The case of MENA region's banks', *Journal of Financial Reporting and Accounting*. https://doi.org/10.1108/JFRA-01-2023-0035

Bloomberg, L.P., 2023, *Data fields description/definitions*, Bloomberg Terminal, New York, NY.

Chychyla, R., Falsetta, D. & Ramnath, S., 2022, 'Strategic choice of presentation format: The case of effective tax rates reconciliations', *The Accounting Review* 97(1), 177–211. https://doi.org/10.2308/TAR-2019-0333

Chyz, J., Henry, E., Omer, T. & Wu, B., 2023, 'The effect of significant IPO firms on industry incumbents: Evidence from tax planning', *Management Science* 69(10), 6369–6392. https://doi.org/10.1287/mnsc.2022.4573

Drake, K.D., Hamilton, R. & Lusch, S.J., 2020, 'Are declining effective tax rates indicative of tax avoidance? Insight from effective tax rate reconciliations', *Journal of Accounting and Economics* 70(1), 1–25. https://doi.org/10.1016/j.jacceco.2020.101317

Du Raan, K., 2023, *Changes to section 11D of the Income Tax Act are good news for researchers and innovators*, viewed 08 October 2024, from https://www.kisch-ip.com/2024/09/changes-to-section-11d-of-the-income-tax-act-are-good-news-for-researchers-and-innovators/.

Dyreng, S.D., Hanlon, M., Maydew, E.L. & Thornock, J.R., 2017, 'Changes in corporate effective tax rates over the past 25 years', *Journal of Financial Economics* 124(3), 441–463. https://doi.org/10.1016/j.jfineco.2017.04.001

Ebrahim, A., Gcabo, R., Khumalo, L. & Pirttilä, J., 2019, *Tax research in South Africa (No. 2019/9)*, WIDER Working Paper, United Nations University, Shibuya.

Financial Accounting Standards Board (FASB), 2023, *Income taxes (Topic 740): Improvements to income tax disclosures*, viewed 19 April 2024, from https://www.fasb.org/.

Flagmeier, V. & Müller, J., 2022, *Tax loss carryforward disclosure and uncertainty*, Discussion Paper No. 208, Quantitative Research in Taxation (arqus), Berlin.

Gaertner, F.B., Laplante, S.K. & Lynch, D.P., 2016, 'Trends in the sources of permanent and temporary book-tax differences during the Schedule M-3 era', *National Tax Journal* 69(4), 785–807. https://doi.org/10.17310/ntj.2016.4.03

Gallego, I., 2004, 'The accounting and taxation relationship in Spanish listed firms', *Managerial Auditing Journal* 19(6), 796–819. https://doi.org/10.1108/02686900410543903

Gomaa, M., Kanagaretnam, K., Mestelman, S. & Shehata, M., 2019, 'Testing the efficacy of replacing the incurred credit loss model with the expected credit loss model', *European Accounting Review* 28(2), 309–334. https://doi.org/10.1080/09638180.2018.1449660

Görlitz, A. & Dobler, M., 2023, 'Financial accounting for deferred taxes: A systematic review of empirical evidence', *Management Review Quarterly* 73(1), 113–165. https://doi.org/10.1007/s11301-021-00233-w

Graham, J.R., Raedy, J.S. & Shackelford, D.A., 2012, 'Research in accounting for income taxes', *Journal of Accounting and Economics* 53(1–2), 412–434. https://doi.org/10.1016/j.jacceco.2011.11.006

Greeff, C., 2019, 'Corporate effective tax rates: An exploratory study of South African listed companies', *South African Journal of Accounting Research* 33(2), 99–113. https://doi.org/10.1080/10291954.2019.1638589

Guenther, D.A., Peterson, K., Searcy, J. & Williams, B.M., 2023, 'How useful are tax disclosures in predicting effective tax rates? A machine learning approach', *The Accounting Review* 98(5), 297–322. https://doi.org/10.2308/TAR-2021-0398

Haas, M., 2013, *On effective tax rate (effective tax rates) guidance and the value-relevance of tax-related forecasts*, SSRN 2367242, SSRN Working Papers, SSRN as part of Elsevier, Rochester, NY.

Hoopes, J.L., Robinson, L. & Slemrod, J., 2023, *Corporate tax disclosure* (No. w31467), National Bureau of Economic Research, Cambridge, MA.

International Accounting Standards Board (IASB), 2017a, *International Accounting Standard 12: Income Taxes*, IASB, London.

International Accounting Standards Board (IASB), 2017b, *IFRIC 23: Uncertainty over Income Tax Treatments,* International Financial Reporting Interpretations Committee (IFRIC) Interpretation, IASB, London.

IODSA (Institute of Directors Southern Africa), 2016, *King code of governance for South Africa 2016*, Johannesburg.

Javangwe, W.M.I., 2021, 'A tax based approach to the promotion of the local acquisition, retention and exploitation of intellectual property', Master's dissertation, University of Johannesburg, viewed 16 October 2024, from https://hdl.handle.net/10210/500166.

JSE (Johannesburg Stock Exchange), 2018, *JSE listings requirements*, LexisNexis Butterworths, Johannesburg.

JSE (Johannesburg Stock Exchange), n.d., *JSE technical library*, viewed 02 October 2024, from https://clientportal.jse.co.za/technical-library/industry-classification-benchmark-(icb).

McKerchar, M., 2008, 'Philosophical paradigms, inquiry strategies and knowledge claims: Applying the principles of research design and conduct to taxation', *Ejournal of Tax Research* 6(1), 5–22.

Mei, L., 2021, 'Research on the difference and coordination between new accounting standards and tax law based on computer aided technology', *Journal of Physics: Conference Series* 1744(3), 1–4. https://doi.org/10.1088/1742-6596/1744/3/032174

Meyer, C., Stiglingh, M. & Venter, E.R., 2006, *The extent of compliance with income tax presentation and disclosure requirement in the financial statements of companies in South Africa*, viewed 15 April 2024, from https://repository.up.ac.za/handle/2263/14476.

Mgammal, M.H., 2020, 'Corporate tax planning and corporate tax disclosure', *Meditari Accountancy Research* 28(2), 327–364. https://doi.org/10.1108/MEDAR-11-2018-0390

Muthu, K. & Wesson, N., 2023, 'The impact of COVID-19 on company performance per industry sector: Evidence from South Africa', *Journal of Economic and Financial Sciences* 16(1), 1–12. https://doi.org/10.4102/jef.v16i1.801

National Treasury, 2021, *Budget speech 2021,* viewed 14 August 2023, from https://www.treasury.gov.za/documents/2021/speech/speech.pdf.

National Treasury, 2024, *Budget speech 2024,* viewed 08 October 2024, from https://www.treasury.gov.za/documents/national%20budget/2024/review/FullBR.pdf.

Nissim, D., 2023, *Normal tax rate,* SSRN Working Papers, SSRN as part of Elsevier, Rochester, NY.

Penning, I., 2014, 'An evaluation of tax presentation and disclosure of listed companies in South Africa', Master's dissertation, University of Pretoria, viewed 16 October 2024, from http://hdl.handle.net/2263/52997.

PwC, 2016, *A summary of the King IV report on corporate governance for South Africa*, viewed 16 May 2024, from https://www.pwc.co.za/en/assets/pdf/king-iv-steering-point.pdf.

PwC, 2017, *IFRS 9 financial instruments understanding the basics,* viewed 14 August 2023, from https://www.pwc.co.uk/who-we-are/regions/london/PwC-IFRS9-understanding-the-basics.pdf.

Republic of South Africa, 2002, *Taxation Laws Amendment Act No 30 of 2002*, Government Printer, Pretoria.

Republic of South Africa, 2005, *Revenue Laws Second Amendment Act No 31 of 2005*, Government Printer, Pretoria.

Republic of South Africa, 2016a, *Taxation Laws Amendment Act 15 of 2016*, Government Printer, Pretoria.

Republic of South Africa, 2016b, *Rates and Monetary Amounts and Amendment of Revenue Laws Bill 19 of 2016*, Government Printer, Pretoria.

Republic of South Africa, 2023, *Income Tax Act No 58 of 1962*, Government Printer, Pretoria.

Rudnicki, M., 2013, 'Accountants will govern the taxation of financial instruments from 2014: Section 24JB unpacked', *Business Tax and Company Law Quarterly* 4(2), 12–19, viewed 14 November 2023, from https://hdl.handle.net/10520/EJC174133.

Rudnicki, M., 2016, 'The benefits of a Section 12H allowance: Long may it last', *Business Tax and Company Law Quarterly* 7(3), 23–28.

Saunders, M., Lewis, P. & Thornhill, A., 2019, *Research methods for business students*, 8th edn., Pearson, London.

Schutte, D.P. & Van der Zwan, P., 2024, 'An evaluation of book-tax differences of South African firms', *Journal of Infrastructure, Policy and Development* 8(8), 1–14. https://doi.org/10.24294/jipd.v8i8.5201

Singh, K., 2007, *Quantitative social research methods*, Sage, London.

Stiglingh, M., Smit, A.R. & Smit, A., 2022, 'The relationship between tax transparency and tax avoidance', *South African Journal of Accounting Research* 36(1), 1–21. https://doi.org/10.1080/10291954.2020.1738072

Strauss, C., 2011, 'An analysis of sections 11D (1)(a) and 11D (5)(b) of the Income Tax Act No. 58 of 1962 as amended', Master's dissertation, Stellenbosch University.

Van der Spuy, P.V.A., 2022, 'Investigating the relationship between corporate tax avoidance and corporate culture in large South African companies', Doctoral dissertation, University of Cape Town.

Van der Spuy, P.V.A. & De Jager, P., 2023, 'Corporate tax avoidance: Is South African society negatively affected by chartered accountant CEOs?', *South African Journal of Science* 119(11–12), 1–8. https://doi.org/10.17159/sajs.2023/15549

Wahab, N.S.A., 2020, 'Components of tax planning and characteristics of top management team', *Jurnal Pengurusan* 58, 1–14. https://doi.org/10.17576/pengurusan-2020-58-03

Wahab, N.S.A. & Holland, K., 2012, 'Tax planning, corporate governance and equity value', *The British Accounting Review* 44(2), 111–124. https://doi.org/10.1016/j.bar.2012.03.005

Wahab, N.S.A. & Holland, K., 2015, 'The persistence of book-tax differences', The British Accounting Review 47(4), 339–350. https://doi.org/10.1016/j.bar.2014.06.002