




## Article

# Book-Tax Differences during the Crisis: Does Corporate Social Responsibility Matter?

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**Abstract:** This study investigates the intricate relationship between corporate financial strategies, encapsulated by book-tax differences (BTDs), and firms' engagement in corporate social responsibility (CSR) programs during economic crises. Using an unbalanced panel dataset drawn from financial, annual, and sustainability reports of over 97 Indonesian non-financial firms from 2017 to 2022, this study reveals that economic crises and CSR activities positively influence total BTD and permanent differences. Notably, firms strategically leverage CSR initiatives amidst crises to enhance their corporate image and manage internal challenges like aggressive tax planning. The robustness of these findings was validated through endogeneity analysis and by examining sub-samples from industries most impacted by the pandemic. In the industries least affected by the pandemic, the direct impact of CSR on BTD was found to be negative, indicating that in the general context, the CSR programs held by these industries are largely driven by normative motives. However, when specified in the crisis context, CSR serves as a strategic buffer for these industries, which reaffirms the prevalence of CSR strategic motives during Indonesia's pandemic challenges. The findings suggest policy implications for shareholders, regulators, and policymakers to ensure CSR transparency aligns with long-term corporate values and societal impact, incentivizing genuine CSR practices amidst economic uncertainty. Despite its contributions, the study recommends future research explore different domains of CSR and validate findings across diverse contexts to enrich the understanding of CSR's role in corporate resilience strategies.

**Keywords:** economic crisis; COVID-19 pandemic; CSR; BTD; permanent differences; temporary differences; corporate culture theory; risk management theory; sustainability accounting; Indonesia



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## 1. Introduction

The COVID-19 pandemic started in 2019, with the first confirmed case in Wuhan spreading quickly across the country due to the movement of people. The pandemic has significantly impacted public health and economies worldwide [1], and Indonesia is no exception [2]. Fortunately, various sectors of society, including private enterprises, have actively contributed to mitigating the COVID-19 pandemic through corporate social responsibility (CSR) endeavors. The growing level of involvement among Indonesian corporations in CSR activities is apparent. For instance, there was a notable rise in participants at the 2020 Top CSR Awards event, featuring 120 finalists from a pool of 200 companies, compared to 72 finalists from 150 companies in the preceding year of 2019. Top Business magazine initiated this event in collaboration with and supported by several CSR, business, and good

corporate governance associations, such as the National Governance Policy Committee and the Nawacita Study Institute, as well as other well-known national CSR and business consulting firms. The central theme of the 2020 Top CSR Awards revolves around the strategic significance of CSR in facilitating the recovery of the national economy amidst the onset of the new normal era.

In Indonesia, a diverse array of entities, encompassing both state-owned enterprises and privately owned firms, including those operating in online transportation, household goods manufacturing, real estate development, logistics services, pharmaceuticals, and multinational corporations, have undertaken CSR endeavors aimed at addressing the prevailing crisis. These endeavors involve furnishing vital provisions such as sustenance, pharmaceuticals, nutritional supplements, medical apparatus, facial coverings, hand coverings, disinfectants, respiratory aids, and safeguarding attire [3]. In addition, several state-owned and private companies have extended support to alleviate the pandemic's economic impact by offering digital business empowerment and training programs targeting communities and micro, small, and medium enterprises. These CSR steps are integral to the companies' sustainability performance, reflecting their commitment to both social responsibility and long-term business resilience.

Increased CSR activities during the outbreak could potentially affect various financial aspects of companies [4], including their tax position. As per Jackson [5], the tax position can be elucidated via book-tax differences (BTDs), delineating the variance between accounting or book income and projected taxable income. Companies typically list their CSR expenditures as regular business expenses in financial reports, allowing them to deduct them accordingly. However, when it comes to taxation, only a fraction of these costs are eligible for such deductions. This disparity is compounded by the considerable ambiguity found within tax legislation, frequently resulting in varying interpretations among tax officers of identical tax matters [6]. However, in the literature, BTD is not only used to inform the extent of such mechanical differences but also to capture aggressive earnings management and tax planning [7–10]. Both concepts reflect deviant behavior as they describe attempts at accounting and tax manipulation induced by managerial motivations [11,12]. Meanwhile, companies normally change their managerial behavior during the COVID-19 pandemic [13]. Drawing on these insights, we can further identify some scenarios that may explain how CSR activities can determine the size of BTD during an economic downturn.

For example, Smith [14] introduced two distinct motives for CSR initiatives: normative and strategic. Normative motives compel enterprises to fulfill their obligations for the betterment of society as participants in communal groupings in accordance with relevant norms and ethics. From a normative perspective, CSR is a broad approach that firms use to demonstrate virtuous behavior by actively contributing to the supply of public goods, particularly during times of crisis, with the aim of enhancing the well-being of society and the community. Therefore, in line with corporate culture theory, see [15], companies tend to consider that managerial manipulations, including earnings management and tax planning, are opportunistic behaviors that violate tacit agreements between the business world and society, thereby giving rise to significant social costs, hampering the government's ability to collect corporate taxes, and endangering the public's interests [16,17]. Put differently, reducing the size of BTD by not practicing profit management and tax planning is an integral part of the company's support for improving society and community welfare during the crisis, which is in line with the spirit of CSR.

On the other hand, based on strategic motives, companies try to achieve certain goals, including opportunistic activities to improve the company's reputation and company image. Based on this strategic view, companies use CSR as a strategic approach to cover negative corporate events such as aggressive tax planning and earnings management [18,19], which basically supports risk management theory [20]. This motive for CSR initiatives becomes more relevant during troubled periods, where uncertainty and high market volatility are likely to place companies in serious financial difficulties, for example, reduced capital flows, the risk of default, and bankruptcy. This situation encourages managers to look for

alternative sources of finance by minimizing the tax burden [21] or restoring investor and stakeholder trust, which is crucial for bolstering economic resurgence by reducing the level of reported losses [22]. Therefore, companies with high CSR activities during the crisis tend to have low financial report reliability, which in turn is assumed to have a large BTDD size as well. Furthermore, this assumption is in line with moral licensing theory, where companies tend to have unethical behavior after they feel they have received a 'license' from something good they have done, such as engaging in CSR activities [23,24].

The above theoretical disagreements imply that there is value in empirically exploring the relationship between CSR and BTDD during the crisis. This effort becomes increasingly important considering that at the country level, BTDD aggregation can contribute directly to the emergence of a 'tax gap' [25], which explains the difference between taxes theoretically owed and taxes actually collected [26]. A substantial tax gap is frequently linked to inequitable tax distribution because it indicates that there are companies that have high revenues but do not contribute proportionally to state revenues [27]. Additionally, global governments, tax advocacy groups, and societal stakeholders have expressed apprehension regarding the escalating phenomenon of the tax gap, which exerts adverse effects on the facilitation of public goods and services [28]. This is because the tax gap causes a large loss of public revenue in various countries, including Indonesia.

Referring to 2019 tax realization data, the tax gap in Indonesia reached 8.5%, and the ability to collect taxes was 9.76% of the gross domestic product (GDP) [29]. This percentage is quite large and exceeds the minimum tax gap threshold of 3.6%, as recommended by the Organization for Economic Cooperation and Development (OECD). Furthermore, the size of the tax gap amounts to IDR 68.7 trillion, with corporate taxpayers contributing approximately IDR 67.6 trillion and individual taxpayers providing IDR 1.1 trillion. The tax gap suffered by the government almost doubled during the pandemic, namely 16.9%, resulting in a loss of potential revenue of IDR 261 trillion. To minimize the potential for higher revenue loss due to the tax gap, the Indonesian government has made several efforts, including reforming tax regulations through the Tax Harmonization Law (UU HPP), which has been in effect since 2022. One of the objectives of this regulatory reform is to reduce the tax gap to a normal level (3.6%). Apart from that, the Directorate General of Taxation (DJP), as the tax authority in Indonesia, is also working to reduce the tax gap through the implementation of the Core Tax Administration System (CTAS). CTAS is information technology that will support the implementation of the DJP's duties in automating business processes, such as processing tax returns, tax documents, tax payments, and billing [30].

Therefore, the primary objective of this study is to examine how the participation of companies in CSR endeavors during times of crisis may affect the scale of companies' BTDD in Indonesia. This study uses Indonesia as a backdrop based on the level of income loss due to the country's tax gap, which has dramatically increased during the pandemic. This motivation is further driven by the proactive measures undertaken by authorities to narrow the gap. Consequently, the results of this study could provide useful insights for tax authorities to anticipate the potential for increasing tax gaps and revenue loss during challenging periods. This situation also makes Indonesia an ideal country for the current investigation, considering that the government is aggressively encouraging companies to be actively involved in economic recovery efforts through CSR activities. For example, the central and regional governments have assigned state-owned enterprises to carry out social initiatives outside their core business to overcome the adverse effects of the COVID-19 pandemic on both economic and health-related aspects of society [31]. This fact certainly allows for adequate observation of the spread of CSR involvement in the crisis years, which in turn allows us to examine how this phenomenon can influence the size of the BTDD of companies in Indonesia.

To address the aims mentioned above, we opted to utilize a sample comprising Indonesian publicly traded non-financial firms listed on the Indonesia Stock Exchange (IDX). Drawing from the financial reports of each company during the period from 2017 to 2022, we adopt three distinct proxies to delineate BTDD, encompassing total, perma-

nent, and temporary differences. Meanwhile, annual reports and sustainability reports from each company in the same period are used as data sources to measure company involvement in CSR activities. Specifically, we focus on items in the Global Reporting Initiative (GRI) G4 guideline contained in both reports and rely on content analysis to construct CSR measures.

We posit that our study represents a significant addition to the body of literature concerning tax accounting and economic crises. Existing research predominantly concentrates on financial performance, e.g., [32–36], earnings management [37–40], and tax planning [41,42] impacts of CSR activities during difficult times. Meanwhile, our research complements these studies by focusing on one concept capturing those financial aspects, especially tax planning and earnings management, namely BTD. The results of this study are expected to serve as a reference for tax authorities to anticipate potential changes in tax gaps and losses of revenue during difficult times, thereby enabling them to formulate targeted strategies to mitigate these impacts. In addition, it is expected that the findings of this research can inform corporate decision-making regarding CSR initiatives. Companies operating in Indonesia can use the insights gained to align their CSR activities with their tax management strategies, thereby increasing their social impact while optimizing their tax position.

The subsequent sections of this manuscript are intricately organized to offer a coherent narrative. Section 2 provides a succinct yet thorough overview of the existing research landscape on BTD. In Section 3, hypotheses are developed based on both theoretical frameworks and empirical foundations, underpinning the interplay among CSR, the economic crisis, and BTD. Both sections serve as the backdrop against which the empirical analysis is framed. Advancing further, Section 4 meticulously elucidates the sample selection procedure, delineates the utilized data and stylized facts, and unveils the econometric framework devised to yield empirical outcomes. In Section 5, the study conducts an in-depth analysis and discussion. Finally, Section 6 synthesizes the findings, presents compelling policy implications, and declares several limitations that future studies need to explore, thereby closing this comprehensive academic endeavor.

## 2. Literature Review: Concept and Research Landscape of BTD

While corporations historically constitute a substantial revenue source for governments, paradoxically, they are also central to most tax avoidance practices [43–45]. This phenomenon is not surprising, given the intricate web of accounting and taxation regulations confronting companies, particularly those entering the public domain [46,47]. Compounded by the obligation to compute dual income measures annually—one dictated by financial reporting standards for accounting or book income and the other by tax laws for taxable income [48]—dissonance often arises between the two, amplifying the perceived disparity in corporate income tax liabilities [49]. In the literature, this variation is usually referred to as BTD.

As elaborated earlier, BTD, at the aggregate level, potentially contributes to tax gaps and revenue losses. Consequently, there have been calls to mandate conformity between accounting and tax-based income, thereby enhancing the reliability of reported financial data and curbing the arbitrage between them [7]. However, Hanlon et al. [50] caution that such conformity might diminish the informational richness of financial reporting by restricting managerial signaling flexibility. Hence, Walker [51] advocates for a compromise solution through partial conformity, suggesting the utilization of accounting standards-based financial reports as the foundation for tax computations while establishing tailored rules or guidelines for tax accounting purposes. For instance, since 2004, ‘large’ corporations in the United States have been mandated to furnish reconciliations between taxable income and financial accounting income to the Internal Revenue Service (IRS) [52]. In Indonesia, a national standard setter, the Indonesian Chartered Accountants (IAI), has recently created a guidebook on the tax treatment of the implementation of accounting standards to assist stakeholders in ‘bridging’ the differences between the two regulations [53].

However, it should be noted that BTM does not simply arise from a passive interaction between accounting and tax-based income definitions. As emphasized by Graham et al. [10], BTM is also a function of managerial behavior, including tax planning and earnings management, which appear increasingly complex as business affairs and market globalization become progressively sophisticated [54–56]. As a result, efforts to reduce the size of BTM have become increasingly intricate, considering the need for in-depth identification of the underlying causes. In this regard, Tsang and Firth [9] and Graham et al. [10] suggest decomposing BTM into two components, namely temporary and permanent differences.

Temporary differences denote transactions or events that are recognized differently in timing or amount under accounting standards compared to tax laws, and this dissonance is expected to be reconciled in subsequent periods [49]. For example, based on income tax law in Indonesia, tangible assets that have exceeded their useful life of four years are recognized as experiencing depreciation at a rate of 25%. However, under accounting standards, the useful life of an asset is determined based on the entity's expected use; see also [9]. Permanent differences arise from transactions or events whose treatment under accounting standards differs from their treatment under tax laws, and this disparity remains unchanged indefinitely [49]. For example, in Indonesia, fines and penalties paid to tax authorities may be non-deductible for tax purposes but are recognized as expenses in financial statements. Moreover, not all expenses related to CSR initiatives are eligible for deduction in income tax calculations. As per Government Regulation (PP) number 93 of 2010, only five specific types of CSR expenditures qualify for deduction, including donations for national disasters (such as the COVID-19 pandemic), research and development, educational facilities, sports coaching, and social infrastructure development. These expenses cannot exceed 5% of net income in total.

A large body of literature on tax accounting shows the usefulness of those two BTM components in detecting two business activities that are considered less ethical, namely tax planning and earnings management [57–63]. Companies employ diverse tax planning strategies, such as adjusting the timing of income and expenses, to effectively defer revenue recognition and hasten expense deductions for tax purposes [8]. This deliberate approach allows entities to minimize their current tax liabilities while optimizing future tax benefits. Consequently, tax planning can influence the magnitude and duration of temporary differences between accounting income and taxable income, impacting financial reporting and tax obligations [64]. Although it only produces temporary differences, if a company can generate net new temporary differences consistently over time through ongoing tax deductions, such as engaging in CSR-related activities [65,66], then the impact will be more permanent [49].

Conversely, earnings management tends to manifest through permanent differences, suggesting managerial aggressiveness in financial accounting practices [12]. Nonetheless, under the assumption of constant taxable income, Phillips et al. [58] discovered that gradual temporary differences prove valuable beyond total accruals and discretionary accruals in categorizing a company's fiscal year as either involving earnings management or not, particularly for firms facing declining profits or the threat of reporting a loss. Additionally, Hanlon [48] observed that profits and the proportion of accrued profits exhibit lower persistence for profits one year ahead among companies with substantial temporary differences, indicative of diminished quality in pre-tax profits when extreme temporary differences are present.

During the crisis years, like the pandemic, most companies experience economic distress, which encourages them to be more proactive in earnings management [22,67–72] and tax planning [21,73–76]. These empirical findings align with institutional theory, positing that corporate behaviors are shaped by the broader institutional context in which firms operate [77]. Accordingly, one may expect that the size of BTM tends to increase when companies are in difficult times, causing their financial reports to become unreliable. This proposition is strengthened by the rise of manipulative 'big bath' accounting practices in many countries affected by the pandemic [78], including Indonesia [79–81]. Nevertheless,



the empirical findings regarding the impact of the economic crisis on BTD remain uncertain and inconclusive, warranting further clarification.

Furthermore, although economic downturns often pose financial constraints for businesses, increased public scrutiny during these periods can encourage companies to increase CSR efforts to improve their reputation and brand image [82]. This fact is in line with legitimacy theory, which underlines the positive interaction between the values prevailing in society and company activities [83]. It is also highly relevant in the Indonesian context, where more companies were involved in CSR activities in the early years of the pandemic, as highlighted in the introduction section of this study. This phenomenon raises an unresolved question in the literature: how do fluctuations in CSR disclosure among listed companies influence the extent of BTD in their financial statements?

Thus, how CSR plays a crucial role in determining the size of BTD among public companies in Indonesia, especially in difficult times, is an intriguing question that needs to be explored through empirical endeavors. Unfortunately, research on this issue is still rarely found in the literature. This void is quite surprising considering that there is established evidence that BTD is a function of various managerial behaviors, including financial reporting abuses [59], conservatism in determining taxable profits [84], earnings management [85], tax management [9], tax avoidance [86], and aggressive tax planning [49,87]. Meanwhile, CSR is an integral part of such managerial behavior [88,89], which is driven by two primary motives: normative and strategic [14]. Moreover, although some authors propose BTD as an indicator of financial distress [90], little is known about studies linking economic crises and BTD. Empirical investigations from Richardson et al. [91], Ariff et al. [73], and Kobbi-Fakhfakh & Bougacha [21], who documented the effect of the COVID-19 pandemic and the global financial crisis on BTD, are three prominent examples. Considering the fairly extensive gaps in the literature, the current study is, therefore, expected to offer additional insights into the BTD literature.

### 3. Hypothesis Development

#### 3.1. Economic Crisis and BTD

Utilizing insights from institutional theory, a company's operational dynamics are contingent upon the institutional milieu within which it operates [77]. Consequently, firms might adapt their conduct amidst an economic downturn in reaction to external influences and diminished performance. In such scenarios, there may emerge two distinct trajectories concerning tax planning and earnings management practices during periods of economic contraction.

During an economic crisis such as a pandemic, companies may be incentivized to engage in earnings management and tax planning practices as a means of mitigating financial distress and maintaining competitiveness [63,92,93]. The uncertainty and financial strain induced by crises can prompt firms to resort to aggressive accounting maneuvers to present a more favorable financial position to stakeholders [94–97]. For instance, during the COVID-19 pandemic, companies facing revenue declines might opt to manipulate the timing of expenses or revenue recognition to smooth income fluctuations and bolster investor confidence. This situation gives rise to a deferred tax expense, temporarily inflating the magnitude of BTD [21,22]. Moreover, the heightened pressure to preserve cash flow and liquidity during crises may drive companies to explore tax planning strategies to reduce tax burdens and conserve resources. For instance, companies experiencing significant losses during the pandemic may implement strategies of providing internal funding by carrying forward tax credits or deductions to offset future taxable income, thereby reducing their overall tax burden [98,99]. Companies often pursue this goal, especially for tax deductions, by expanding their involvement in CSR-related activities [65,66]. Regrettably, CSR expenditures cannot be entirely deducted from gross income in tax contexts, and once such expenditures are included in financial reports, they may generate permanent differences. As a result, economic crises are expected to widen BTD.

Conversely, economic crises can also serve as a deterrent to companies' engagement in earnings management and tax planning practices due to heightened scrutiny and regulatory oversight [100,101]. The increased focus on transparency and accountability during crises may dissuade companies from adopting aggressive accounting tactics or exploiting tax loopholes to avoid potential legal and reputational risks [102–104]. Additionally, the complexity and volatility of economic conditions during crises may render traditional earnings management and tax planning strategies less effective or more difficult to implement, leading companies to prioritize stability and compliance over aggressive financial maneuvering [105–107]. Consequently, economic crises may discourage companies from engaging in earnings management and tax planning practices, contributing to a narrower BTD as financial reporting becomes more conservative and regulatory enforcement strengthens.

A compilation of empirical research provides substantiation for the scenarios mentioned above. For instance, Richardson et al. [91], in their study encompassing data from 203 Australian listed companies spanning 2006 to 2010, establish a significant positive relationship between financial hardships and a company's BTD. Moreover, they furnish empirical evidence indicating a bolstering of this relationship in the wake of the 2008 global financial crisis. Edwards et al. [108], utilizing data from Compustat on United States companies, demonstrate a propensity among firms to prioritize tax planning strategies yielding cash tax savings and reductions in total tax costs—termed permanent differences—especially in response to mounting financial constraints. In contrast, Kobbi-Fakhfakh & Bougacha [21], examining publicly traded companies in the United States within the Standard & Poor's 500 indexes from 2012 to 2019, discerned a negative impact of the coronavirus outbreak on BTD, signaling a downturn in tax avoidance practices. Further analysis underscores that this effect remains consistent across industries irrespective of their likelihood of failure but is chiefly driven by a decline in deferred tax burdens, constituting a temporary difference. Ariff et al. [73], in a cross-country investigation encompassing over 38 thousand firm-year observations from 32 nations for the periods of 2015 up to 2020, corroborate these findings. Specifically, their study concludes that financially distressed firms encounter diminished opportunities for tax evasion, leading to a contraction in BTD during the pandemic.

To the best of our knowledge, there exists a dearth of research on BTD amidst the crisis within the Indonesian context. Thus, drawing upon the theoretical underpinnings and varied empirical evidence highlighted earlier, the influence of the COVID-19 pandemic-induced economic downturn on corporate BTD appears plausible yet indeterminate beforehand. Consequently, we propose a hypothesis, in its alternative form, regarding the relationship between the economic crisis and BTD, acknowledging the uncertainty surrounding this dynamic as follows:

**H1a.** *There is a significant relationship between the economic crisis and BTD.*

**H1b.** *There is a significant relationship between economic crises and temporary differences.*

**H1c.** *There is a significant relationship between economic crises and permanent differences.*

### 3.2. CSR and BTD

The impact of CSR on BTD can be understood by considering the nature of CSR expenditures and their tax deductibility. Regardless of whether CSR expenses are deductible or non-deductible for taxation, they are recorded as expenses in financial statements, reducing accounting profit. However, only deductible expenses qualify for the tax deduction, leading to a permanent difference between financial reporting and taxable income. In Indonesia, for instance, Government Regulation PP number 93 of 2010 specifies that donations for national disasters, research and development, educational facilities, sports coaching, and social infrastructure development are deductible CSR expenditures. Other expenses, such as entertainment or support for small businesses, may not qualify for the deduction, creating a permanent difference once reported in financial statements. In addition, the effect

of CSR spending also applies to temporary differences. Deductible CSR expenses recognized in financial statements may be treated differently for tax purposes. For instance, if a company contributes to pandemic relief as part of its CSR initiative, the timing of when these expenses are deducted for tax purposes may differ from their recognition in financial statements. This timing disparity results in temporary differences until the discrepancy reverses in subsequent periods.

However, the impact of CSR on the magnitude of BTM extends beyond passive interactions between accounting and tax regulations. The underlying motivation driving a company's engagement in CSR activities serves as an alternative causal mechanism that elucidates its influence on the company's BTM. Based on the normative and strategic motives for CSR proposed by Smith [14], two rival theories relating to the relationship between CSR and BTM have emerged in the literature, namely corporate culture theory and risk management theory [109]. Some meta-analysis studies, such as Shi et al. [23] and Marques et al. [110], stated that both are relevant theories used by many studies to empirically explore the relationship between CSR, tax planning, and earnings management.

As per corporate culture theory, corporations are urged to uphold ethical standards in their operational decisions [15]. This theory posits that culture evolves to delineate appropriate corporate conduct, thereby serving shareholder interests through enhanced intra-organizational coordination, reduced transactional expenses, and acting as a substitute for costly explicit communication and bargaining [111]. Numerous empirical examinations have bolstered this theory, revealing corporate culture's pivotal role in shaping various corporate policies [112–114], including CSR initiatives [115,116].

Aligned with Kreps [15], we perceive CSR as a collective conviction within an organization regarding ethically sound actions that encompass not solely economic considerations but also social, environmental, and other external ramifications of the company's endeavors. Consequently, we posit that firms espousing greater CSR are inclined towards meticulousness in corporate conduct impacting diverse stakeholders, including tax planning and earnings management. The rationale behind this assertion lies in the notion that the adoption of opportunistic practices by a company can engender adverse societal repercussions, thereby conflicting with the objectives of CSR as envisaged within the purview of corporate culture theory.

For instance, in the realm of tax planning, companies may adopt strategies that transfer the tax burden onto individuals, thereby imposing enduring hardships on consumers [117,118]. This phenomenon arises as companies endeavor to safeguard their profit margins amidst escalated tax obligations, ultimately passing on the resultant expenses to consumers through augmented prices for goods and services. Furthermore, the practice of earnings management can undermine investor confidence in a company's financial disclosures, precipitating a downturn in stock prices as investors grow apprehensive of potential manipulations [119,120]. This diminution in shareholder value occurs when investors opt to divest their holdings or demand a higher risk premium for retaining shares in a company perceived to exhibit unreliable financial reporting practices. Additionally, earnings management can distort the genuine financial performance of a company, thereby impeding shareholders' ability to evaluate its long-term sustainability and formulate judicious investment choices [121,122]. Consequently, shareholders may incur losses if their investment decisions hinge on deceptive financial information.

Viewed through the lens of corporate culture theory, CSR is anticipated to exert a negative influence on a company's BTM, both temporarily and permanently, given that BTM encapsulates those two aberrant behaviors. This assertion finds credence, considering that, at an aggregate level, BTM serves as a determinant of the tax gap, which, in turn, correlates with a substantial diminution in fiscal revenue [25]. In such instances, governments may find themselves compelled to augment individual taxes or curtail social welfare initiatives, thereby disproportionately burdening low-income constituents [123]. It engenders considerable societal costs and jeopardizes public welfare [17]. Hence, curtailing the magnitude of BTM by refraining from, or at the very least minimizing, manipulative practices (i.e.,



aggressive tax planning and earnings management) is regarded as contributing positively to society, aligning with the objectives of CSR from the perspective of corporate culture theory. Put differently, companies exhibiting greater social responsibility are expected to exemplify transparency, integrity, and a sterling reputation [124], attributes reflected in the diminutive scale of BTD.

On the other hand, as elucidated by Hanlon & Slemrod [12] and Wilson [62], the adoption of aggressive tax planning maneuvers and excessive earnings management tactics may elicit severe punitive measures, including tarnished corporate/executive reputations, heightened political or media scrutiny, potential fines and penalties from tax authorities, and even consumer boycotts. From the vantage point of risk management theory, the engagement of businesses in CSR endeavors proves instrumental in bolstering the likelihood of favorable assessments from societal authorities, thereby attenuating adverse evaluations and sanctions [20]. In essence, CSR expenditures and adverse occurrences within a company (e.g., tax planning and earnings management) are posited to exhibit a systematic and positive relationship. This proposition is tempered by a burgeoning discourse within scholarly circles and the mainstream media that underscores the risk mitigation facets of CSR activities: “CSR is best seen as risk management, as the avoidance of damage to a company’s reputation” [109].

In accordance with the risk management perspective of CSR, Godfrey et al. [125] and Minor & Morgan [126] present empirical findings indicating that heightened CSR endeavors can enhance a company’s favorable reputation. Moreover, this enhanced reputation serves as a form of insurance against the risks of market, political, regulatory, and social penalties in the event of adverse company occurrences. Another theoretical framework, such as moral licensing, corroborates these observations, wherein companies engage in CSR initiatives and subsequently rationalize implementing various managerial strategies, even if they contravene business ethics, under the guise of being good corporate citizens and deserving leniency [127]. Regarding negative events pertaining to tax planning and earnings management, multiple studies have established a positive association with CSR [19,128–130]. Recent empirical investigations, exemplified by Özbay et al. [131], utilizing data from 94 companies listed on the Istanbul Stock Exchange, reveal that socially responsible firms engage more in tax avoidance activities through discretionary BTD. Furthermore, Ahmad et al. [132] employ panel data for 100 non-financial companies listed on the Bombay Stock Exchange spanning from 2015 to 2020, yielding compelling evidence of a positive relationship between CSR and earnings management.

Empirical studies investigating the effects of CSR on BTD are still very little known in the literature. However, considering that earnings management and tax planning can be represented by BTD, once again, we expect that CSR and BTD (both temporary and permanent) have a systematic relationship. Nonetheless, we estimate that the direction of the relationship remains ambiguous, considering the notions offered by the theoretical and empirical studies described above. Notably, when normative motives become the main driver for companies to engage more in CSR practices, then corporate culture theory is worth adopting, and thus, its influence on BTD is negative. On the other hand, if strategic motives are the main reason for companies to allocate more CSR expenditure, then risk management or moral licensing can be used as theoretical backgrounds, and therefore, the effect on BTD is positive. In summary, the hypothesis we offer is as follows:

**H2a.** *There is a significant relationship between CSR and BTD.*

**H2b.** *There is a significant relationship between CSR and temporary differences.*

**H2c.** *There is a significant relationship between CSR and permanent differences.*

### 3.3. CSR Moderates the Relationship between Economic Crisis and BTD

Considering the insights gleaned from the preceding discussions, the role of CSR may emerge as a pivotal factor in moderating the relationship between economic crises and BTD.

The argument is as follows: Economic crises such as pandemics can trigger a spectrum of responses from companies, ranging from intensified financial maneuvering to heightened regulatory compliance efforts. On the one hand, companies facing economic turmoil may resort to aggressive earnings management and tax planning practices as a survival strategy, aiming to mitigate financial distress and maintain competitive viability. On the other hand, economic downturns can serve as a deterrent to such practices, as companies face heightened scrutiny from stakeholders and regulatory bodies, disincentivizing risky financial maneuvers.

Concurrently, CSR is positioned to influence how companies respond to economic crises and how these responses manifest in their financial reporting practices. For example, corporate culture theory posits that companies with a strong commitment to CSR are inclined towards ethical conduct and transparency, which may deter them from engaging in aggressive financial reporting practices, even amidst economic downturns. It may indicate that CSR carried out by companies in difficult times is motivated by normative motives. Conversely, from the perspective of risk management theory or moral licensing theory, companies may perceive CSR expenditures as a form of insurance against negative repercussions during crises, potentially emboldening them to adopt more aggressive financial strategies to navigate through the turbulent economic landscape. It could indicate that CSR is a form of company strategy to maintain performance in the midst of an economic downturn.

Numerous empirical studies provide a foundational framework for our hypothesis. For instance, Ozdemir et al. [133] conducted a panel data analysis encompassing 113 companies spanning the hospitality, restaurant, and airline sectors over the period 2001 to 2018. Their findings reveal that during periods of economic upheaval, companies exhibit enhanced engagement in CSR, thereby mitigating the adverse impact of the crisis on company performance. It aligns with the strategic motives underlying CSR practices. Similarly, research by Khanchel & Lassoued [39] during the COVID-19 crisis supports this notion, indicating that socially responsible companies tend to engage in upward earnings management compared to their counterparts. However, these findings appear to be contradicted by Adrian et al. [134], who present consistent evidence that companies in the United States demonstrate reduced engagement in corporate tax avoidance when their home state experiences drought conditions. Notably, this reduction in tax avoidance is more pronounced among companies with higher CSR performance and those operating in countries witnessing a decline in GDP. Collectively, these research insights underscore the propensity of companies to exhibit prosocial and ethical behaviors in response to natural disaster events.

In light of these dynamics, we hypothesize that CSR acts as a moderator in the relationship between economic crisis and BTD (both temporary and permanent). By moderating the relationship between the economic crisis and BTD, CSR serves as a mechanism through which companies navigate the complexities of financial decision-making during times of economic uncertainty. This hypothesis underscores the nuanced role of CSR in shaping corporate behavior and financial outcomes, highlighting its significance in understanding the dynamics of financial reporting practices in the face of economic crises. Specifically, we propose:

**H3a.** *CSR moderates the relationship between economic crisis and BTD.*

**H3b.** *CSR moderates the relationship between economic crises and temporary differences.*

**H3c.** *CSR moderates the relationship between economic crises and permanent differences.*

## 4. Method

### 4.1. Sample Selection

We opt to examine non-financial firms listed on the IDX to validate our hypothesis, deliberately excluding financial firms to mitigate any potential bias stemming from vari-

ations in reporting regulations. Indonesia, ranked 20th among 229 countries affected by COVID-19, presents a pertinent context for our study (see <https://www.worldometers.info/coronavirus/countries-where-coronavirus-has-spread/>, accessed on 7 December 2023). In addition, focusing on a one-country study enables a more comprehensive understanding of the institutional frameworks influencing our findings, given the diverse regulatory landscape and economic dynamics within the country, e.g., [135].

The initial sample selection process involved non-financial firms listed on the IDX from 2017 to 2022, totaling 423 firms. The inclusion of the year 2017 was deliberated to mitigate any bias resulting from the transition of accounting practices in Indonesia related to the full convergence of Indonesian Financial Reporting Standards (SAK) to International Financial Reporting Standards (IFRS), ensuring consistency in financial reporting practices. The year 2022 was chosen to encompass the most recent available data. For contextual clarity, the period from 2017 to 2019 is designated as the pre-pandemic era, while 2020 to 2022 is considered the pandemic period. This segmentation aligns with the fact that the imposition of large-scale social restrictions started on 10 April 2020, approximately five weeks after Indonesia's first confirmed COVID-19 case [136]. Meanwhile, the conclusion of the COVID-19 pandemic status in Indonesia is on 21 June 2023, as indicated by Presidential Decree Number 17 of 2023, which marks the endpoint of the selected timeframe (see <https://setkab.go.id/inilah-keppres-penetapan-berakhirnya-status-pandemi-covid-19-di-indonesia/>, accessed on 7 December 2023). This timeline enables a focused examination of the economic crisis's impacts on firms' BTD, minimizing potential confounding factors.

The initial dataset consisted of 2538 firm-year observations derived from 423 firms over a span of six years (2017–2022). Subsequently, we refined the dataset by excluding observations lacking data for specified variables. Additionally, instances where financial statements reported losses were omitted, as BTD calculations require reported profits. We also exclude observations where companies apply final rates for income tax because it is technically impossible for BTD to apply under such circumstances. The argument posits that under the final tax rate, no adjustments or deductions are permitted once the tax liability is calculated. Since BTD necessitates the ability to adjust taxable income (such as through carryforwards of losses, deductions, or credits), final tax rates effectively preclude such adjustments. To mitigate currency conversion errors, observations presented in foreign currencies were removed. These adjustments yielded an unbalanced panel dataset comprising data from 97 firms, totaling 472 firm-year observations. Though it may limit generalizability due to the reduced sample size and potential loss of diverse data points, those data filtering processes resulted in a more accurate and manageable dataset. Detailed information on the sample selection procedure is provided in Table 1.

**Table 1.** Sample Selection Procedure.

Sample Criteria	Firm-Year Observations
Non-financial firms listed between 2017 and 2022.	2538
Data are absent for at least one dependent variable.	(1298)
Observations featuring negative taxable income.	(384)
Observations apply to the final tax rate.	(65)
Financial statements denominated in foreign currencies.	(319)
The ultimate tally of firm-year observations.	472

#### 4.2. BTD Measurements

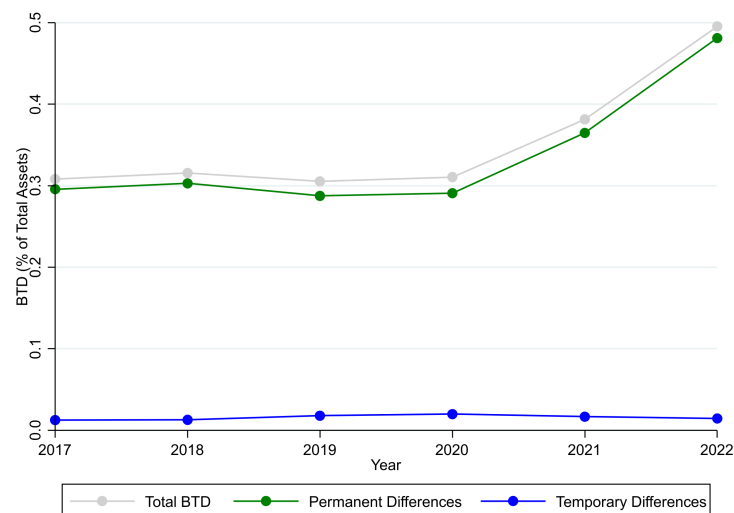
In gauging BTD, we followed previously published studies, e.g., [21,25,49,137,138], which were defined as the difference between pre-tax book income and taxable income. They measured BTD using the following formula:

$$BT D_{it} = PTBI_{it} - TI_{it} \quad (1)$$

where  $BTD_{it}$  denotes the total BTD for the firm  $i$  in year  $t$ ,  $PTBI_{it}$  represents pre-tax book income for the firm  $i$  in year  $t$ , and  $TI_{it}$  stands for taxable income for the firm  $i$  in year  $t$ . We break down the total BTD in Equation (1) into permanent differences ( $PERMBTD_{it}$ ) and temporary differences ( $TEMPBTD_{it}$ ) following previous literature (e.g., [8,48,139,140]. Specifically, in line with Kobbi-Fakhfakh & Bougacha [21], the temporary difference is defined as the deferred tax expense grossed out by the Indonesian statutory corporate tax rate, and the permanent difference is the net of total BTD and temporary differences. In our regression analysis, we scale each BTD measurement by the end-of-year total assets.

We employ the absolute values of the three scaled BTD measures since both positive (book income greater than taxable income) and negative (book income less than taxable income) BTD demonstrate the extent of the mechanical gap between accounting and taxation regulations in Indonesia. Furthermore, employing absolute values enables us to account for the possibility that positive and negative BTD reflect the uncertainty surrounding the information presented in financial reports during the economic crisis. All financial information required to estimate BTD is collected from the financial reports on the IDX website (see <https://www.idx.co.id/id>, accessed on 18 December 2023).

Figure 1 illustrates the empirical observations regarding the mean BTD among Indonesian firms, spanning both the pre-pandemic era (2017–2019) and the pandemic period (2020–2022). As can be seen, the average magnitude of total BTD exhibits a remarkable degree of persistence over the steady state era and begins to increase dramatically when the economy is hit by negative external shocks, namely the COVID-19 pandemic. More substantively, BTD expanded by 19 basis points during the outbreak, transitioning from 33% of total assets in 2020 to a substantial 52% by 2022.



**Figure 1.** Average BTD of Companies in Indonesia Before and During the Crisis Period.

Upon closer examination of its constituent elements, the upsurge in BTD during the pandemic predominantly stemmed from permanent differences. This phenomenon suggests a prevalent trend among Indonesian public companies to pursue avenues for tax deductions, thereby bolstering internal funding reservoirs amidst challenging economic climates. As elucidated by Kloppers [65] and Jiang et al. [66], one viable strategy entails the implementation of CSR initiatives. This proposition finds support in the observed surge in CSR engagement among companies during crises, as noted at the opening of this study. Conversely, temporary differences exhibit a propensity to remain relatively stable even in the aftermath of the pandemic's impact on Indonesia. This observation is rationalized by the proactive measures undertaken by the Indonesian government, including tax relief initiatives and temporary incentives designed to alleviate financial strains on businesses and galvanize economic revival. Notably, these measures encompass provisions outlined in Minister of Finance Regulation (PMK) number 9 of 2021, including the reduction of

installments by 50% as stipulated in Article 12 and tax exemptions on imports for eligible public companies under the Import Facility for Export Destinations (KITE) as specified in Article 10. Such temporary tax interventions serve to attenuate the escalation of temporary differences by synchronizing tax recognition timelines with financial reporting standards, thereby mitigating the imperative for subsequent adjustments [141].

#### 4.3. CSR Measurements

In our investigation, CSR functions both as a key predictor of BTM and as a moderating variable capable of either amplifying or mitigating the impacts of economic crises on BTM. To quantify CSR, we devised a content analysis index that scrutinizes the disclosure of CSR activities in annual and sustainability reports, aligning with the items outlined in the GRI G4 guideline. The guideline was chosen as the framework for our CSR index due to its widespread acceptance, prominence, and extensive adoption by corporations [142,143]. Moreover, it stands as the prevailing international standard for CSR disclosures [144].

The GRI G4 guideline encompasses three primary dimensions or categories: economic, environmental, and social. These dimensions are further elaborated into six indicators, each comprising multiple disclosure items. Specifically, these indicators encompass the economy (with 9 disclosure items), environment (with 34 disclosure items), employment practices and decent work (with 16 disclosure items), human rights (with 12 disclosure items), society (with 11 disclosure items), and product responsibility (with 9 disclosure items). Thus, a total of 91 disclosure items are utilized to evaluate the CSR performance of each firm.

The CSR disclosure index is structured as follows: a value of 1 indicates the presence of disclosed CSR activities, while a value of 0 signifies their absence:

$$CSR_{it} = \frac{\sum jit}{n} \quad (2)$$

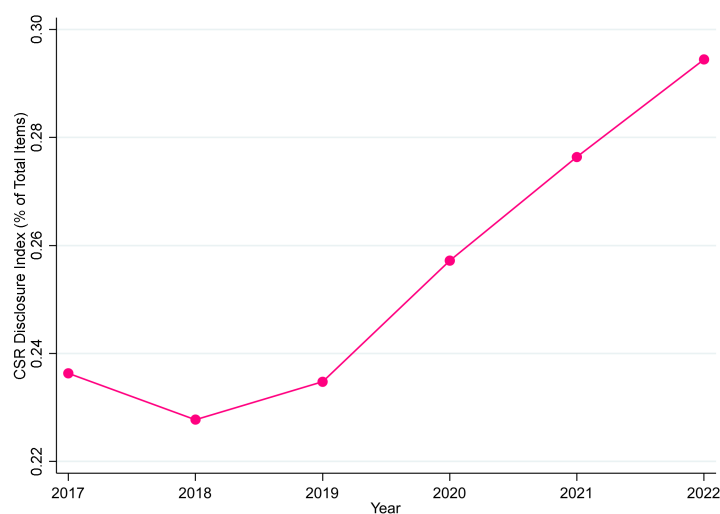
where  $CSR_{it}$  represents the CSR disclosure index for the firm  $i$  in the year  $t$ ,  $jit$  is the number of CSR items disclosed by the firm  $i$  in the year  $t$ , and  $n$  denotes the maximum value of CSR disclosure (91 disclosure items).

Figure 2 presents a graph plotting average CSR activity in non-crisis and crisis periods for 472 firm-year observations. We observe that, on average, in years where economic fluctuations are insignificant, the involvement of Indonesian public companies in CSR practices tends to have a negative trend. It is in sharp contrast to the times of the pandemic, showing that there has been a significant gradual rise in the CSR agenda among listed companies in Indonesia. These findings thus provide support for our argument regarding the expansion of BTM underpinned by permanent differences, as shown in Figure 1. Moreover, these results are in line with legitimacy theory, which argues that businesses must adhere to social beliefs and perceptions because social legitimacy is seen as an agreement that binds companies and society [83]. As a result, a company's agendas, including proactive and reactive plans, such as CSR, depend on how these activities are viewed by society. However, the motivation behind implementing CSR itself is a crucial question that is interesting to solve, considering its implications for several managerial behaviors that are considered detrimental in the eyes of society, namely tax planning and earnings management, which are reflected in the BTM measure. This kind of effort can be carried out by relying on an econometric approach, the specifications of which will be explained further in the next subsection.

Table 2 presents the distribution of the three BTM measures and the CSR disclosure index by industry. The 97 companies involved in the analysis currently operate in 10 different industries (see [https://www.idx.co.id/media/1n1lf4j4/08\\_listed-companies-by-entry-point-2020-en-20201022.pdf](https://www.idx.co.id/media/1n1lf4j4/08_listed-companies-by-entry-point-2020-en-20201022.pdf), accessed on 25 December 2023) with trade, service, and investment having the largest number of firm-year observations (20.13%), followed by consumer goods (16.53%), mining (14.83%), and basic industry and chemicals (14.41%). Some of them were highly affected, and others were least affected by a nega-



tive shock originating from the COVID-19 pandemic (see <https://databoks.katadata.co.id/datapublish/2020/09/15/6-sektor-usaha-paling-terdampak-saat-pandemi-corona>, accessed on 25 December 2023). Consequently, there is considerable variation in the levels of BTD and CSR activities across industries. The industry with the highest BTD level is healthcare, where the BTD to total assets ratio reached 65.3 percent. This industry was an anomaly during the pandemic period, as it was the only sector that experienced a substantial surge in demand [145]. In contrast, the most affected industries, such as property, real estate, and building construction, and the least affected, such as telecommunications, respectively, showed the lowest total BTD levels at just 9.01% and 11.4%. The highest CSR activities were found in the mining sector (32.31%) and the lowest in the telecommunications sector (15.38%). Both are categorized as the least affected industries.



**Figure 2.** Average CSR Activities of Companies in Indonesia Before and During the Crisis Period.

**Table 2.** BTD and CSR Distribution by Industry.

Industry	Firm-Year Observations	% of Total	COVID-19 Impact	$BTD_{it}$	$TEMPBTD_{it}$	$PERMBTD_{it}$	$CSR_{it}$
Agriculture	32	6.78%	Least	0.252	0.236	0.016	0.309
Basic Industry and Chemicals	68	14.41%	Most	0.270	0.252	0.017	0.196
Consumer Goods Industry	78	16.53%	Most	0.567	0.546	0.021	0.281
Healthcare	6	1.27%	Least	0.654	0.644	0.010	0.273
Infrastructure, Utilities, and Transport	56	11.86%	Most	0.242	0.223	0.019	0.251
Mining	70	14.83%	Least	0.435	0.420	0.014	0.323
Miscellaneous Industry	35	7.42%	Least	0.393	0.386	0.008	0.224
Property, Real Estate, and Building Construction	26	5.51%	Most	0.090	0.085	0.005	0.292
Telecommunication	6	1.27%	Least	0.114	0.101	0.013	0.154
Trade, Service, and Investment	95	20.13%	Most	0.336	0.321	0.015	0.215
Total	472						

Considering this phenomenon, our empirical analysis incorporates industry fixed-effects to account for variations in BTD and CSR across different sectors. Exploring the industry dimension in our empirical analysis will undoubtedly provide valuable insights into the interplay of the COVID-19 pandemic and CSR practices on BTD within each industry. These findings will be further elaborated upon in the robustness analysis.

#### 4.4. Econometric Specification

To investigate the association between the economic crisis and CSR on BTD, we propose the following econometric model:

$$BTD_{it} = \alpha_1 CRISIS_{it} + \alpha_2 CSR_{it} + \alpha_3 CRISIS * CSR_{it} + \alpha_j CONTROL_{it} + \theta_i + \pi_t + \varepsilon_{it} \quad (3)$$

Both  $BTD_{it}$  and  $CSR_{it}$  refer to the same definition as discussed previously.  $CRISIS_{it}$  is a dichotomous variable with a value of 1 for 2020–2022 firm-year observations and a value of 0 otherwise (2017–2019 firm-year observations).  $CRISIS * CSR_{it}$  shows the interaction of the COVID-19 crisis with the company's CSR activities in a specific year. Apart from the key explanatory ( $CRISIS_{it}$  and  $CSR_{it}$ ), we also include a battery of control variables ( $CONTROL_{it}$ ) to isolate the impact of firm-level characteristics, including profitability ( $ROA_{it}$ ), firm size ( $SIZE_{it}$ ), leverage ( $LEV_{it}$ ), tangible assets ( $PPE_{it}$ ), intangible assets ( $INTAN_{it}$ ), and inventory ( $INVENT_{it}$ ). These control variables are derived from several studies concerning the BTD level of the company [21,25,138,146–148]. The compilation of data for all control variables is conducted using financial reports provided by IDX. The complete definitions and descriptive statistics of all variables in our regression model are presented in Tables 3 and 4, respectively. The coefficients  $\alpha_1$ ,  $\alpha_2$ , and  $\alpha_3$  depict the influence of the COVID-19 pandemic on BTD, the effect of CSR on BTD, and the moderating effect of CSR on the relationship between the COVID-19 pandemic and BTD, respectively. We predict that  $\alpha_1$ ,  $\alpha_2$ , and  $\alpha_3$  must differ from zero (significant).  $\theta_i$  stands for industry fixed-effect to control the special features of each industry in which the company operates that can influence or bias the main hypothesis testing of this study.  $\pi_t$  is a year-fixed-effect that captures general disruptions (beyond the COVID-19 pandemic) that could affect a company's BTD in a given year. The idiosyncratic error term is represented by  $\varepsilon_{it}$ .

**Table 3.** Definition of Variables.

Variables	Operationalization
Dependent Variables	
$BTD_{it}$	Equation (1) divided by ending-of-year total assets
$TEMPBTD_{it}$	The ratio of current deferred tax expense to statutory tax rates divided by ending-of-year total assets
$PERMBTD_{it}$	$BTD_{it}$ minus $TEMPBTD_{it}$
Key Explanatories	
$CRISIS_{it}$	Dummy variable equal to 1 (0 otherwise) for 2020–2022 firm-year observations
$CSR_{it}$	Equation (2)
Control Variables	
$SIZE_{it}$	Natural logarithm of ending-of-year total assets
$LEV_{it}$	Total debt divided by ending-of-year total assets
$ROA_{it}$	Net income divided by ending-of-year total assets
$INTAN_{it}$	Intangible assets divided by ending-of-year total assets
$PPE_{it}$	Net property plant and equipment divided by ending-of-year total assets
$INVENT_{it}$	Inventory divided by ending-of-year total assets

We use the fixed-effect (FE) model to estimate Equation (3). The Hausman test must be performed to ensure that the FE model in Equation (3) is correctly specified (there is a specific effect on the panel). This test's null hypothesis implies no correlation between the unobservable effects and all explanatory variables. In that way, instead of FE, the random-effects (REs) model can estimate Equation (3) consistently. In addition, we adopt Driscoll and Kraay's [149] covariance matrix estimator for the FE model. This approach ensures the generation of unbiased parameters and consistent standard errors (SEs), effectively addressing concerns related to autocorrelation, heteroskedasticity, and dependencies across both cross-sectional and temporal dimensions [150]. As a robustness check, we employ system-generalized method of moments techniques to tackle potential endogeneity issues.

Furthermore, we explore how the impact of economic crises and CSR on BTD can vary across industries, distinguishing between those most severely affected and those least impacted by COVID-19. This approach fortifies the robustness of our empirical findings.

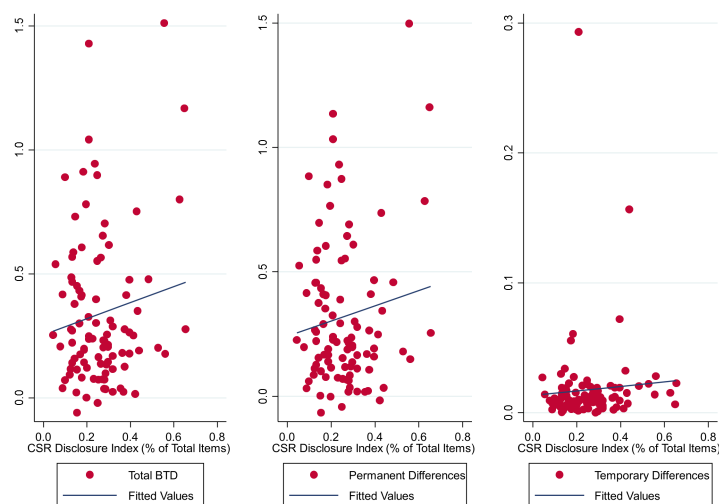
**Table 4.** Descriptive Statistics of Variables.

Variables	Observations	Mean	Standard Deviation	Minimum	Maximum
$BTD_{it}$	472	0.354	0.393	−0.115	2.802
$TEMPBTD_{it}$	472	0.016	0.034	0.00002	0.456
$PERMBTD_{it}$	472	0.339	0.386	−0.158	2.801
$CRISIS_{it}$	472	0.498	0.501	0	1
$CSR_{it}$	472	0.255	0.142	0.044	0.935
$SIZE_{it}$	472	27.673	4.661	12.730	33.655
$LEV_{it}$	472	0.456	0.219	0.017	1.887
$ROA_{it}$	472	0.081	0.910	−0.029	0.616
$INTAN_{it}$	472	0.052	0.116	0.00005	0.803
$PPE_{it}$	472	0.336	0.209	0.004	0.895
$INVENT_{it}$	472	0.127	0.116	0.0005	0.545

## 5. Results and Discussion

### 5.1. Graphical and Correlation Analysis

Before delving into a comprehensive discussion of our empirical findings within the framework of regression analysis, it is prudent to initially explore the basic relationship between CSR and BTD through a simple scatter plot, as depicted in Figure 3. The analysis reveals a positive relationship between the company's engagement in CSR initiatives and BTD. Notably, this association is particularly pronounced in total BTD and permanent differences, albeit less conspicuous in the case of temporary differences. Such observations lend credence to the notion that a considerable proportion of companies in Indonesia perceive CSR as a strategic mechanism to secure tax deductions, a sentiment echoed in extant literature [65,66]. Consequently, it fortifies the contention that the surge in overall BTD during the pandemic was primarily propelled by permanent differences rather than temporary differences (see Figure 1).



**Figure 3.** Scatter Plot of CSR Activities and BTD.

Furthermore, a nuanced analysis of Figure 3 suggests a prevalence of strategic incentives over normative considerations among firms engaging in CSR initiatives, thereby aligning with theoretical frameworks such as risk management and moral licensing theories. Hence, it is plausible to posit that companies grappling with financial constraints resort to accounting and financial manipulations, thereby fostering an inclination towards proactive

CSR involvement to obfuscate such deviant behavior. This strategic maneuver, whether as a means of risk mitigation over sanctions and penalties or as a compensatory measure for perceived transgressions through benevolent actions, underscores the complex interplay between CSR endeavors and BTM dynamics in corporate landscapes, specifically in the Indonesian context.

A preliminary overview of our study's outcomes is also supplied by the Pearson correlation matrix, which provides a rigorous formulation of the degree of linear relationship between two variables, as outlined in Table 5. Consistent with the patterns depicted in Figure 1, the economic turmoil stemming from the pandemic demonstrates a statistically significant positive correlation with both total BTM and permanent differences, albeit not with temporary differences. Moreover, a notable positive correlation between CSR and adverse economic conditions is evident, as previously captured in Figure 2. However, it is crucial to emphasize that this correlation does not signify the presence of multicollinearity between the two variables ( $CRISIS_{it}$  and  $CSR_{it}$ ), as the correlation coefficient falls well below the commonly accepted threshold of 0.7 (i.e., 0.154), as recommended by Gujarati [151] and adopted by numerous subsequent studies. Therefore, the joint inclusion of these variables in regression analysis does not introduce bias to the estimation model. Lastly, echoing the insights gleaned from Figure 3, our analysis unveils a significant positive correlation between corporate engagement in CSR initiatives and two dimensions of BTM, namely total and permanent differences. Nevertheless, the correlation with temporary differences is negligible. Taken together, the correlation analysis in this subsection reaffirms the dominance of strategic motives over normative considerations in propelling corporations to engage with CSR agendas, particularly in times of crisis.

**Table 5.** Pearson Correlation Matrix.

	1	2	3	4	5
1 $BTD_{it}$	1.000				
2 $TEMPBTD_{it}$	0.267 ***	1.000			
3 $PERMBTD_{it}$	0.996 ***	0.185 ***	1.000		
4 $CRISIS_{it}$	0.114 **	0.037	0.113 **	1.000	
5 $CSR_{it}$	0.112 **	0.037	0.111 **	0.154 ***	1.000
6 $SIZE_{it}$	−0.033	−0.127 ***	−0.022	0.025	−0.180 ***
7 $LEV_{it}$	−0.121 ***	0.241 ***	−0.144 ***	−0.026	0.009
8 $ROA_{it}$	0.987 ***	0.327 ***	0.978 ***	0.068	0.110 **
9 $INTAN_{it}$	−0.073	0.054	−0.079 *	0.007	0.108 **
10 $PPE_{it}$	−0.094 **	0.079 *	−0.102 **	−0.051	−0.171 ***
11 $INVENT_{it}$	0.048	−0.135 ***	0.061	−0.052	−0.176 ***

Note: \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5 also offers insights into the correlation coefficients concerning the control variables. For instance, there exists a negative correlation between firm size and BTM, suggesting that entities with larger asset accumulations prioritize precision and transparency in financial reporting to mitigate potential penalties and uphold their reputation. An extensively embraced notion posits that larger enterprises are inherently more visible [152], consequently rendering them susceptible to closer scrutiny from regulatory bodies, investors, and various stakeholders, including the press, independent non-governmental organizations, and social movement entities [153]. The pronounced negative correlation, particularly evident with temporary differences, underscores the validity of this proposition. As previously discussed, temporary differences undergo reconciliation in subsequent periods, a process that reveals any inconsistencies during audits or reviews conducted by authorities. Given the current emphasis on tax compliance and the regularity of audits, temporary differences emerge as prominently discernible to authorities, rendering them more readily exposable compared to permanent differences.

On the other hand, profitability presents contrasting findings compared to company size, exhibiting a positive and statistically significant correlation with the three measures

of BTD. Enhanced profitability means greater tax liabilities, which may motivate firms to pursue more proactive tax minimization strategies within legal frameworks to maximize after-tax profits [154]. Practically, this involves leveraging tax loopholes, deductions, credits, and other tax savings tactics, consequently widening the rift between reported financial income and taxable income. Lastly, the remaining control variables, including leverage, tangible assets, intangible assets, and inventory, exhibit mixed coefficient signs, where their correlation with temporary differences consistently presents anomalies.

Though the scatter plot diagram and correlation coefficient matrix provided above offer valuable insights into the nature of relationships between variables, these analyses do not account for the influence of other variables or control for confounding factors, potentially leading to incomplete or misleading findings [155]. Regression analysis, on the other hand, allows researchers to explore the relationship between a dependent variable and one or more independent variables while controlling for other pertinent factors. By simultaneously integrating multiple predictors, regression analysis facilitates a more nuanced understanding of the factors influencing the dependent variable, enabling the identification of significant predictors and the quantification of their effects. Thus, regression analysis offers a more comprehensive and rigorous approach to examining relationships between variables in a quantitative study. Detailed interpretation and discussions on the results of the regression analysis will ensue in the following subsections.

## 5.2. Baseline Results

Table 6 presents the baseline results concerning the influence of the economic crisis and CSR on BTD. In the current analysis, three individual measures of BTD, namely total, temporary differences, and permanent, were examined separately, resulting in three distinct specifications. In specifications 1 and 3, the Hausman test consistently rejects the null hypothesis of no FE as the  $p$ -values are below the 1% threshold. Consequently, over the RE model, the FE model is chosen as a suitable approach for estimating Equation (3). In contrast, the Hausman test results for specification 2 indicate that the coefficient estimates from the RE model are consistent, leading to the decision to employ the RE model for this specification.

**Table 6.** Baseline Results: Economic Crisis and CSR on BTD.

Dependent Variables	$BTD_{it}$	$TEMPBTD_{it}$	$PERMBTD_{it}$
Specifications	(1)	(2)	(3)
$CRISIS_{it}$	0.054 *** (0.003)	0.001 (0.002)	0.052 *** (0.004)
$CSR_{it}$	0.190 *** (0.009)	0.018 * (0.008)	0.170 *** (0.023)
$CRISIS_{it} \times CSR_{it}$	−0.042 (0.022)	−0.016 ** (0.005)	−0.025 (0.020)
$SIZE_{it}$	−0.0002 (0.003)	−0.001 (0.001)	0.004 (0.006)
$LEV_{it}$	0.058 (0.078)	0.068 ** (0.019)	−0.029 (0.094)
$ROA_{it}$	4.280 *** (0.097)	0.139 * (0.061)	4.148 *** (0.145)
$INTAN_{it}$	0.072 ** (0.025)	0.010 (0.016)	0.064 ** (0.022)
$PPE_{it}$	0.081 (0.044)	0.006 (0.007)	0.082 (0.048)
$INVENT_{it}$	−0.075 ** (0.023)	−0.030 *** (0.005)	−0.082 ** (0.026)



Table 6. Cont.

Dependent Variables	<i>BTD<sub>it</sub></i>	<i>TEMPBTD<sub>it</sub></i>	<i>PERMBTD<sub>it</sub></i>
Specifications	(1)	(2)	(3)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	472	472	472
Firms	97	97	97
R-squared	0.978	0.218	0.964
Hausman ( $\gamma$ )	60.42 [0.000]	1.50 [0.335]	37.39 [0.001]

Note: Driscoll and Kraay's [149] SEs are in parentheses under coefficient estimates.  $p$ -values are in square brackets. Hausman ( $\gamma$ ) shows robust Hausman test results. Specification 2 is estimated using the RE model since the Hausman test fails to reject the null hypothesis for no FE. \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Our findings indicate that the economic crisis exerts a positive and significant influence on BTD in aggregate ( $\alpha_1 = 0.054$ ,  $p$ -values < 1%) and permanent differences ( $\alpha_1 = 0.052$ ,  $p$ -values < 1%) but not on temporary differences ( $\alpha_1 = 0.001$ ,  $p$ -values > 10%). Therefore, these results partially support the established hypotheses, namely H1a and H1c. CSR has a significant positive effect on total BTD ( $\alpha_2 = 0.190$ ,  $p$ -values < 1%), indicating that higher CSR disclosure in annual or sustainability reports increases a company's overall BTD level. This impact primarily stems from an increase in permanent differences in financial reporting. As illustrated in Table 6, the coefficient for the CSR-permanent differences relationship ( $\alpha_2 = 0.170$ ,  $p$ -values < 1%) is more pronounced compared to the coefficient for CSR-temporary differences ( $\alpha_2 = 0.018$ ,  $p$ -values < 10%). More substantively, an increase in the ratio of permanent differences and temporary differences relative to total assets by 0.17% and 0.02%, respectively, is concurrent with a 1% increase in the CSR disclosure index within a given fiscal year. After all, these findings provide support for any hypotheses related to the influence of CSR on outcomes of interest, namely H2a, H2b, and H2c.

Surprisingly, when the interaction between these two primary independent variables is examined to assess the moderating impact of CSR (i.e.,  $CRISIS_{it} \times CSR_{it}$ ), the estimated coefficient shows an unexpected negative direction and fails to achieve statistical significance even at the 10% level, especially in specifications 1 and 3. It suggests that CSR does not moderate the relationship between the economic crisis and BTD—whether in total or permanent differences. H3a and H3c are thus rejected. These findings underscore that the economic crisis and CSR stand individually in their influence on total BTD and permanent differences. However, the moderating effect of CSR on the relationship between the economic crisis and temporary differences in such a way that the effect is negative is proven to be significant at the 5% level and thus supports H3b. This result may be unexpected, but it can be explained by several reasons. For instance, companies may strategically adjust their CSR spending or operational strategies to maintain financial stability during an economic crisis, thereby potentially aligning financial reporting practices with taxable income due to tighter financial oversight. Additionally, CSR initiatives that increase transparency and compliance with regulatory requirements during a crisis can reduce the variability of temporary differences that can arise in stressful economic conditions. Therefore, although CSR generally increases temporary differences, its moderating effect during economic crises can paradoxically reduce the magnitude of these differences by encouraging more conservative financial reporting practices.

The baseline findings of this study indicate that the economic crisis and CSR may lead to elevated levels of BTD among listed companies in Indonesia. Such positive effects appear predominantly driven by the augmentation of permanent differences rather than temporary ones. With respect to the economic crisis, the result supports the notion that in challenging periods like pandemics, businesses are motivated to employ tax planning and earnings

management as tactics to alleviate economic strain. By effectively managing taxes and earnings, businesses can allocate resources more efficiently, invest in innovation, or adjust pricing strategies to remain competitive in their respective markets [156–158]. Practically, it could involve deferring the recognition of revenue or accelerating the recognition of expenses in financial statements to smooth out taxable income during volatile economic periods [159,160]. Such actions can create temporary differences between the timing of financial accounting income and taxable income [161,162]. Alternatively, this objective can be accomplished through leveraging tax incentives or credits, which effectively lower the effective tax rate applied to taxable income [163]. This reduction is a permanent difference because it affects the actual amount of tax paid, rather than timing differences that reverse over time [164].

Given that the economic crisis significantly affects permanent differences rather than temporary ones, public companies in Indonesia have probably predominantly utilized tax credits rather than the timing of revenue and expenses to navigate financial challenges during the pandemic period. This argument is underscored by the Indonesian government's introduction of tax credits as part of its strategy to stimulate economic activity amidst the crisis. According to Article 12, paragraph 1 of PMK number 9 of 2021, the government implemented a policy offering a 50% reduction in income tax installments due for the period from January 2021 to June 2021, which was then extended to December 2021. This incentive applies to 1018 business classifications, companies designated as KITE, and those holding permits, such as bonded zone operators or bonded zone entrepreneurs. Companies benefiting from this tax installment reduction are required to submit monthly realization reports using designated forms no later than the 20th of the month following the tax period. During the crisis, over 58,000 taxpayers, including individuals and entities, utilized these tax incentives, resulting in a total absorption of IDR 25.23 trillion. According to Ayers et al. [137], such incentive policies typically impact permanent differences more significantly than temporary ones. In essence, our findings concerning the link between the economic crisis and BTB are well-grounded from practical and scientific standpoints.

Our research findings, which highlight the positive impact of CSR on permanent differences, reinforce the notion of CSR being utilized tactically for minimizing tax liabilities [65,66]. Considering that not all CSR expenditures qualify as deductible donations according to tax regulations, when the non-deductible ones are erroneously reported in tax returns, it will be considered an overstatement on tax deductions, thereby exacerbating permanent differences. Errors in reporting non-deductible CSR expenditures for tax purposes can stem from mechanical mistakes or taxpayers' lack of understanding regarding tax regulations [165]. Furthermore, in jurisdictions with intricate tax systems, such as Indonesia, variations in interpretation between tax authorities and taxpayers regarding tax rules may contribute to such discrepancies [6].

Moreover, consistent with our findings on the link between the economic crisis and temporary differences, which is less prominent, firms may be less interested in implementing further managerial strategies by manipulating the timing of recognition of deductible CSR spending for both tax and market purposes. There are some plausible reasons behind these results. Firstly, during periods of economic uncertainty, companies may experience a downturn in profitability, diminishing the benefit of deferring expenses since there may be insufficient future taxable income to offset the deductions [166]. Secondly, heightened oversight from tax authorities and stakeholders typically intensifies during a crisis [100,101]. Consequently, attempts to smooth income are more likely to be detected as these practices undergo scrutiny and reconciliation in subsequent periods, potentially undermining public confidence in the quality and informativeness of companies' financial reporting. Thirdly, corporate engagement in earnings management practices, particularly through income smoothing, generally diminishes following the full convergence of IFRS in various countries [167], including Indonesia [168]. Fourthly, despite companies engaging in income smoothing through adjustments in the timing of deductible CSR expenditures, the resulting

impact on temporary differences may exist but is typically less substantial. It is due to regulatory constraints that CSR expenditures are capped at 5% of net income.

Overall, our empirical findings provide strong evidence that strategic motives are the primary catalysts prompting companies to engage more actively in CSR programs. This phenomenon is particularly pronounced during periods of crisis, as evidenced by a significant surge in the CSR disclosure index compared to stable economic periods (see Figure 2). In this context, companies utilize CSR initiatives to enhance their corporate image in response to adverse events within their internal environment during the pandemic, such as aggressive tax planning and earnings management. This strategic approach not only aims to mitigate scrutiny from regulatory authorities but also to minimize the risk of sanctions and penalties, thereby aligning with the notion of risk management theory. An empirical study by Rudyanto & Pirzada [169] seems to provide support for this inference. Using panel data for companies listed on IDX between 2014 and 2016, they conclude that environmentally insensitive companies require sustainability reporting to reduce the reputational costs of tax avoidance. Also, the cross-country study supplied by Mutuc et al. [170] using panel data for companies in eleven Asian countries (including Indonesia) revealed the opportunistic and concealed role of CSR on earnings management. Additionally, companies may sometimes consider pausing their strict adherence to accounting and tax regulations under the guise of having done something noble by engaging in CSR activities during a crisis, which is in line with insights drawn from moral licensing theory. List & Momeni [171], with their experimental study involving 1500 workers from Amazon's Mechanical Turk (Mturk), posit that the altruistic nature of CSR encourages workers to commit various frauds, which, if related in the context of our study, could include fraud in the field of accounting and taxation, which in fact is decided by the manager as a worker in a company. Eventually, our findings regarding the positive effects of CSR on total BTD can be both empirically and practically justified.

Surprisingly, when the economic crisis and CSR are combined into an interaction variable, their influence on all BTD measures becomes statistically insignificant, indicating that CSR does not moderate the relationship between the economic crisis and BTD. There is no clear justification for this perplexing result, especially considering that both factors individually play substantial roles in widening BTD. Nevertheless, implicit lessons can be drawn from these findings. For instance, it can be interpreted that firms strategically utilize CSR as a tactic to manage perceptions and mitigate the impact of economic turmoil on financial reporting practices. It is acknowledged that the pandemic has prompted firms to aggressively intensify tax planning and earnings management strategies, thereby increasing BTD. Within this context, CSR initiatives serve as a tool for firms to mitigate reputational risks associated with such deviant managerial behaviors during periods of turbulence. By implementing CSR programs that benefit communities, firms aim to portray a positive corporate image and signal adherence to ethical standards, allowing them to manage stakeholder perceptions regarding the credibility of financial disclosures.

This argument aligns with the concept of the 'halo effect' [172] and Mercer's [173] model of financial disclosure credibility, where investors' perceptions of management's trustworthiness—shaped by companies demonstrating positive CSR performance [174]—influence evaluations of the biased or unbiased nature of earnings reports. Wang & Tuttle [175] empirically confirm this 'halo effect' through experiments involving business graduate students in the United States as proxies for non-professional investors. Their study indicates that CSR significantly influences how investors assess the credibility of financial disclosures. Given that BTD is a relevant indicator of credible disclosure [9], CSR expenditures during the pandemic have the potential to mitigate negative perceptions associated with high BTD, thereby diminishing the explanatory power of the economic crisis on BTD, especially on temporary differences.

Turning to the control variables, profitability ( $ROA_{it}$ ) consistently exhibits a positive and significant coefficient across all three BTD measures, as evidenced in the correlation analysis (see Table 5). Thus, our conclusion remains intact: companies with higher prof-

itability are more inclined to employ managerial strategies that optimize after-tax profits. Intangible assets ( $INTAN_{it}$ ) show a similar pattern in their effect on BTD as economic crises do—positively influencing total BTD and permanent differences, albeit orthogonal to temporary differences. These findings suggest that the accounting treatment of intangible assets may afford managers substantial discretion [176] and receive comparatively less scrutiny from auditors [177]. As noted by Gao et al. [178], the productivity of a company's intellectual property, such as patents, relates positively to its tax avoidance strategies. Additionally, Kimouche [179] highlights that managers in France strategically use intangibles and goodwill to manipulate earnings. Inventory ( $INVENT_{it}$ ) yields contrasting results compared to return on assets, exhibiting a negative and significant influence on all BTD constructs. This finding aligns with Taylor & Richardson's [180] assertion that companies with high inventory levels should exercise caution to avoid excessive tax burdens. Apart from that, leverage ( $LEV_{it}$ ) demonstrates a positive and significant effect on temporary differences. Lastly, company size ( $SIZE_{it}$ ) and tangible assets ( $PPE_{it}$ ) are not significantly associated with the three BTD measures.

### 5.3. Robustness Check: Dealing with Endogeneity Bias

A standard practice in empirical studies involves conducting 'robustness' checks, where researchers explore how baseline regression coefficients react when the regression specification is altered. If the signs and magnitudes of the coefficients remain stable and plausible, it is typically considered evidence that these coefficients are 'robust' and can be interpreted reliably as the true causal effects of the associated regressors [181]. Accordingly, Leamer [182] strongly advocated for such investigations, contending that the 'fragility' of the coefficients may signal specification errors and that sensitivity analyses (i.e., robustness checks) should be routinely performed to help diagnose misspecification.

Bernard [183] and Van Lent [184] argue that misspecification can arise due to endogeneity within the estimation models. Endogeneity poses a critical methodological challenge in numerous realms of accounting research that utilize regression analysis to infer causality [185]. Many studies in these fields struggle to effectively address endogeneity issues [186]. Hamilton & Nickerson [187] and Antonakis et al. [188] highlighted a striking finding: approximately 90% of papers published in prestigious journals fail to adequately mitigate endogeneity bias. Moreover, Huang et al. [189] conducted a meta-analysis, revealing that out of 437 empirical studies examining the link between corporate social and financial performance, only 54 applied specialized methods to tackle endogeneity issues. Encouragingly, 72% of these endogeneity-considered studies supported the prevailing consensus in their findings.

Drawing on insights from the literature above, we conduct a robustness check on our baseline results (see Table 6) using instrumental variable (IV) methods designed to mitigate potential endogeneity bias in Equation (3). While such methods are commonly employed by accounting researchers in their primary analyses, their utilization for robustness testing purposes is approximately equivalent [190]. Various IV methods exist to cope with endogeneity bias, including two-stage least squares (2SLS) and the system-generalized method of moments (system-GMM). Researchers must identify the root cause of the issue before selecting the most appropriate methods to effectively mitigate the adverse effects of endogeneity [191,192].

Generally, endogeneity occurs when one or more explanatory variables violate the exogeneity assumption by becoming correlated with the error term in a regression model [193]. Two main sources create such a situation: omitted variable bias and simultaneity bias [194]. Omitted variable bias occurs when relevant variables are not included in the regression model to estimate the variance of a particular dependent variable. Such omitted variables will be captured by the error term in the model and potentially related to any independent variables being the focal point of an analysis, thereby giving rise to endogeneity issues [195]. Simultaneity bias arises when the independent and dependent variables mutually affect each other, operating reciprocally [194]. Since the error term encapsulates all unobserved

factors affecting the dependent variable, if there is simultaneity—where the dependent variable affects the independent variables—the error term can also correlate with the independent variables, exacerbating endogeneity concerns.

In the current study, we focus on two primary regressors:  $CRISIS_{it}$  and  $CSR_{it}$ , both potentially treated as endogenous. However,  $CRISIS_{it}$  measured as a period of the COVID-19 pandemic—a sudden global economic downturn—is totally considered an exogenous shock and thus unlikely to suffer from endogeneity issues stemming from both sources. Several studies exploring the relationship between the COVID-19 pandemic and managerial decisions share similar perspectives on this matter. e.g., [75,196].

Therefore, the endogeneity problem likely only applies to  $CSR_{it}$ , which directly pertains to corporate behavior. As presented in Table 6, we incorporated pertinent financial indicators for BTD as a battery of control variables (i.e.,  $SIZE_{it}$ ,  $LEV_{it}$ ,  $ROA_{it}$ ,  $INTAN_{it}$ ,  $PPE_{it}$ , and  $INVENT_{it}$ ), called by Antonakis et al. [188], as a best practice to avoid omitted variable bias. Nonetheless, we are overshadowed by a key point in Clarke [197], p. 349: “It is impossible to include all the relevant variables in a regression equation.” Thus, certain omitted variables may affect the variance in  $CSR_{it}$ . For instance, firm value, a factor recognized in determining the extent of BTD [198,199], has not been incorporated into our analysis. At the same time, this variable has the potential to significantly influence corporate CSR activities. Higher firm value not only provides greater financial resources to firms but also heightens stakeholder expectations, thereby prompting firms to exhibit more pronounced commitments to CSR initiatives [200]. Concerning the simultaneity bias, we stick to existing empirical results. On the one hand, CSR influences the magnitude of BTD through diverse causal mechanisms elucidated comprehensively in the previous sub-sections. On the other hand, companies exhibiting high BTD engage more in CSR to legitimize their actions and mitigate potential repercussions from their tax practices. Ling & Wahab [28] provide support for the positive impact of BTD on CSR adoption.

Based on the identification outlined above, the endogeneity issue in this study appears to stem from both of those primary sources rather than just one. In such scenarios, employing 2SLS, which is recognized as the most used IV estimator, is highly recommended [191]. Also, the statistical theory underpinning this estimator has been extensively developed [201]. However, researchers often encounter significant challenges associated with the application of this estimator since it relies heavily on external source exogenous instruments, which in practice are not easy to find [202,203], sometimes even impossible [188,204].

As Angrist et al. [205] and Bollen [206] note, the instruments should meet at least two conditions: they must be highly correlated with the endogenous regressors (‘strong’), and they cannot be correlated with the error term (‘valid’). Maddala [207], p. 154, provocatively discusses the ‘miracle’ of finding these instruments, cynically asking, “Where do you get such a variable?” Similarly, Larcker & Rusticus [190] argue that in accounting research, strong and valid instruments are akin to a ‘holy grail’—highly desirable yet illusive. Proxies often prove imperfect, being correlated with one or more explanatory variables in the regression equation, while obtaining additional data suitable for panel data techniques remains challenging in management accounting settings [184]. At the same time, if the chosen instruments fail to meet these stringent criteria, as cautioned by Bound et al. [208] and Samadeni et al. [209], the ‘cure’ may exacerbate the ‘disease,’ introducing bias into both estimates and standard errors. Consequently, researchers must grasp the implications of employing the 2SLS estimator, which does not precisely adhere to the essential assumptions regarding instrumental variables.

Given the circumstances, it is prudent to acknowledge the existence of alternative models that are logically plausible [192]. In this case, Arellano and Bover [210] and Blundell and Bond [211] have introduced the system-GMM, which addresses various sources of endogeneity and is particularly suitable for panel data analysis [202]. Unlike 2SLS, system-GMM does not rely on external exogenous instruments but instead employs two sets of equations, each with its own set of instruments. The first set of equations operates in



levels with lagged differences between the dependent and independent variables serving as instruments. The second set involves equations in the first differences, using lagged levels of the dependent and independent variables as instruments. These instruments, derived from existing econometric models, are commonly referred to as ‘internal instruments’ [212] and have demonstrated greater efficiency in mitigating endogeneity issues [213]. Additionally, other advantages make a compelling case for adopting the system-GMM estimator over 2SLS. Firstly, system-GMM offers a straightforward framework for achieving asymptotically efficient estimators even in the presence of heteroscedasticity [214]. Secondly, system-GMM tends to be more robust against weak instruments compared to 2SLS [215], where the latter’s consistency and precision are contingent on strong instrument conditions [216]. In short, the system-GMM estimator stands out as more efficient and consistent than 2SLS across a broad range of empirical conditions.

The characteristics of this study also align well with several assumptions that underpin the use of system-GMM. As noted by Roodman [212], this estimation technique is tailored for dynamic panel data, implying that causal relationships among underlying phenomena evolve over time. For instance, it may not be the current year’s CSR influencing BTD but rather the previous year’s BTD that plays a significant role. This assumption proves pertinent, given that tax planning and earnings management strategies often exhibit cumulative effects. Successful managerial practices in one period can set a precedent for achieving similar outcomes in subsequent periods. To capture this dynamic, lagged values of the BTD measures are therefore used as explanatory variables. Moreover, the first set of system-GMM equations remains susceptible to omitted variable bias [185], as does Equation (3). However, these omitted variables are assumed to be time-invariant, a plausible assumption if short panel data characterized by a short period ( $T$ ) and a large number of companies ( $N$ ) are used in the analysis. Fortunately, our dataset aligns with this profile, featuring  $T = 6$  and  $N = 97$ .

Table 7 presents the estimation results related to the effects of the economic crisis and CSR on BTD using the system-GMM econometric model. It is worth noting that only the two-step estimator is reported due to several limitations associated with the one-step estimator. For instance, when a recent value of a variable is missing, employing a first-difference transformation (i.e., a variable’s recent value is adjusted by subtracting its previous value) may lead to significant data loss [212]. To mitigate this issue, the two-step estimator adopts ‘forward orthogonal deviation.’ This method substitutes the subtraction of the previous value from the recent value of a variable with the subtraction of the mean of all available future values of a certain variable [212]. Consequently, the two-step model offers more efficient and consistent coefficient estimates [210].

**Table 7.** Two-Step System-GMM: Economic Crisis and CSR on BTD.

Dependent Variables	$BTD_{it}$			$TEMPBTD_{it}$			$PERMBTD_{it}$		
Specifications	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$BTD_{t-1}$	0.017 (0.017)	0.021 (0.019)	0.021 (0.039)						
$TEMPBTD_{t-1}$				0.818 *** (0.819)	0.707 *** (0.144)	0.707 (0.599)			
$PERMBTD_{t-1}$							0.073 ** (0.029)	0.053 * (0.031)	0.053 (0.066)
$CRISIS_{it}$	0.035 *** (0.009)	0.034 *** (0.009)	0.034 * (0.021)	0.005 (0.005)	0.003 (0.005)	0.003 (0.009)	0.009 (0.011)	0.030 ** (0.012)	0.030 * (0.018)
$CSR_{it}$	0.164 *** (0.042)	0.187 *** (0.048)	0.187 ** (0.080)	0.028 (0.025)	0.017 (0.025)	0.017 (0.072)	0.180 *** (0.049)	0.170 *** (0.050)	0.170 ** (0.082)
$CRISIS_{it} \times CSR_{it}$	0.018 (0.031)	0.017 (0.031)	0.017 (0.082)	−0.023 (0.017)	−0.014 (0.017)	−0.013 (0.031)	0.025 (0.042)	0.039 (0.044)	0.039 (0.076)
$SIZE_{it}$	−0.0004 (0.003)	−0.005 (0.008)	−0.005 (0.020)	−0.002 (0.003)	−0.004 (0.003)	−0.004 (0.010)	−0.001 (0.004)	0.002 (0.010)	0.002 (0.026)

Table 7. Cont.

Dependent Variables Specifications	BTD <sub>it</sub>			TEMPBTD <sub>it</sub>			PERMBTD <sub>it</sub>		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
LEV <sub>it</sub>	−0.003 (0.044)	−0.012 (0.045)	−0.012 (0.078)	0.064 *** (0.021)	0.026 (0.026)	0.026 (0.071)	−0.060 (0.064)	−0.068 (0.063)	−0.068 (0.113)
ROA <sub>it</sub>	3.968 *** (0.060)	4.080 *** (0.103)	4.080 *** (0.272)	0.152 *** (0.038)	0.086 * (0.047)	0.086 (0.169)	3.767 *** (0.114)	3.888 *** (0.166)	3.888 *** (0.440)
INTAN <sub>it</sub>	0.040 (0.065)	0.058 (0.057)	0.058 (0.067)	0.040 ** (0.018)	0.039 ** (0.017)	0.039 (0.029)	0.036 (0.098)	0.040 (0.085)	0.040 (0.128)
PPE <sub>it</sub>	−0.011 (0.027)	−0.014 (0.029)	−0.014 (0.033)	0.045 *** (0.017)	0.049 *** (0.019)	0.049 (0.048)	−0.022 (0.045)	−0.020 (0.047)	−0.020 (0.062)
INVENT <sub>it</sub>	0.035 (0.079)	0.012 (0.082)	0.012 (0.117)	0.031 (0.045)	−0.012 (0.047)	−0.012 (0.110)	0.054 (0.104)	0.028 (0.108)	0.028 (0.133)
Industry FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	355	355	355	355	355	355	355	355	355
Firms	90	90	90	90	90	90	90	90	90
Wald Chi <sup>2</sup>	15,271.40 [0.000]	8866.82 [0.000]	2373.49 [0.000]	351.30 [0.000]	158.11 [0.000]	20.80 [0.107]	7708.72 [0.000]	3338.28 [0.000]	714.11 [0.000]
Sargan test	17.402 [0.182]	14.847 [0.250]		21.817 [0.058]	14.280 [0.283]		18.861 [0.128]	17.247 [0.141]	
Arellano-Bond test ( <i>m</i> <sub>2</sub> )	0.220 [0.825]	−0.006 [0.996]	−0.005 [0.996]	0.893 [0.372]	0.770 [0.441]	0.459 [0.647]	0.158 [0.875]	−0.150 [0.881]	−0.133 [0.894]
Instruments	27	27	27	27	27	27	27	27	27

Note: SEs are in parentheses under coefficient estimates. Specifications 3, 6, and 9 report robust SEs corrected for finite samples using Windmeijer's [217] correction. The included industry FE considers variations in BTD between sectors, distinguishing those known as hard-to-tax from those that are not. *p*-values are in square brackets. \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7 comprises nine specifications. In specifications 1, 4, and 7, industry FE is omitted from the regression model. For some reasons that we are unable to identify, the software we are using for statistical analysis (STATA 17.0) consistently rejects our attempt to include the predefined industry FE in the estimation model by giving an 'invalid syntax' message. As an alternative effort, we redefine industry FE as an indicator to mitigate differences in variables of interest across the 'hard-to-tax' and 'easy-to-tax' industries. Specifically, the industrial categorization from Table 2 is narrowed down into such two divisions by drawing on empirical insights. For instance, Rajaraman [218] identifies agriculture as the most challenging sector for taxation. According to Daniel et al. [219], a substantial share of extractive industry revenues comes from multinational corporations, posing difficulties in taxing them effectively to ensure adequate revenue without impeding investment. Conceptually, Bird [220] posits that service activities generally present difficulties for tax collection. However, Cevik et al. [221] demonstrate that enhancing trade and telecommunications services improves tax collection efficiency, while healthcare—classified as non-market services—hinders tax efficiency. Bahl [222] and Frijters et al. [223] conclude that manufacturing is widely acknowledged as the easiest sector to tax compared to the other ones. Accordingly, firms operating in the agriculture, mining, and healthcare sectors are categorized as hard-to-tax, while the rest are deemed easy-to-tax. Thanks to this industrial division, STATA 17.0 unexpectedly enables us to incorporate industry FE into the estimation model, as evidenced in specifications 2, 5, and 8. Lastly, given our dataset's nature, which involves multiple entities, we acknowledge the potential presence of heteroscedasticity. Therefore, we address this issue by employing the Windmeijer [217] adjustment to correct for such a small sample bias, providing us with robust SEs for the two-step estimator. The corresponding regression results are presented in specifications 3, 6, and 9.

To ensure the appropriateness of the econometric model, two tests are reported: the Sargan test for the exogeneity of the instruments and the Arellano–Bond test for second-order autocorrelation ( $m_2$ ) in residuals. The first-order autocorrelation ( $m_1$ ) is less concerning as the equations are in first differences [185,192]. In all specifications reporting the results of the Sargan test, except specification 4, the  $p$ -values of the test exceed the 10% significance level, indicating non-rejection of the null hypothesis. It suggests that the instruments employed in the system-GMM model are exogenously determined and then correctly specified. It is important to note that the Sargan test cannot be calculated when robust SEs are used in the model. Therefore, the results of the test are not reported in specifications 3, 6, and 9. Furthermore,  $m_2$  is found to be statistically insignificant in all specifications, implying no second-order correlation in the error terms between different periods. It supports the strong exogeneity assumption, indicating that lagged variables are uncorrelated with the error term.

Turning to the main results of the robustness testing, qualitatively, we find that our conclusions remain intact with the employment of the system-GMM as an estimation model. The economic crisis and CSR exert a positive influence on total BTD and permanent differences, though the impact on temporary differences is not statistically significant. This consistency is especially visible in specifications 2 and 8, where most of the estimated coefficients are significant at the 1% level. Although the magnitude of the estimated coefficients in specifications 3 and 9 is the same as in specifications 2 and 8, the use of Windmeijer's [217] correction inflates the SEs and thus reduces statistical significance to the 10% (for the economic crisis) and 5% (for CSR) levels. It indicates the presence of heteroscedasticity in the estimation model, which the use of robust SEs tolerates.

These findings, compared with the baseline findings, show a substantial reduction in statistical significance, considering the impact of the key explanatory variables on BTD, and the permanent differences in Table 6 are significant even at the 1% level. However, the changes in the magnitude of coefficients are negligible, particularly for the crisis variable. The differences in coefficient size compared to the baseline results are 0.020 (from 0.054 to 0.034) and 0.022 (from 0.052 to 0.030) for the effects on total BTD and permanent differences, respectively. The magnitude of the coefficient representing the influence of CSR on total BTD fell very slightly, around 0.003 (from 0.190 to 0.187), but for the CSR-permanent differences relationship, the coefficient sizes are totally similar. Lastly, the moderating effect of CSR on the relationship between the crisis and the three BTD measures was consistently found to be insignificant across all specifications of the current robustness analysis. Despite some changes, which do not undermine the substance of our empirical inferences, we confidently assert that our robustness test has been successfully validated.

#### 5.4. Robustness Check: Exploiting Industry Heterogeneity

Empirical analyses in finance often encounter the challenge of dealing with potentially heterogeneous data whose structure is not fully understood. Despite this complexity, estimators for key parameters remain pertinent and valuable even in the presence of such heterogeneity. However, accurately estimating their sampling variability becomes notably more difficult. To address these challenges, we can employ robust large-sample inference strategies. One approach, outlined by Ibragimov & Müller [224], involves partitioning the dataset into several distinct groups. For each group, the model of interest is estimated. This method allows for robust inference even in datasets with heterogeneous structures. In cases where panel data is relatively short, such as in the current study with  $T = 6$  and  $N = 97$ , we may find it advantageous to assume some level of independence across the cross-section. For instance, in finance applications, it is common to assume minimal correlation between firms belonging to different industries, e.g., [225]. We can leverage this assumption by grouping firms within the same industry together. This grouping strategy results in multiple distinct groups corresponding to different industries.

Building on the insights above, the sample for this study was divided into two distinct groups based on industry characteristics. The first group comprises companies operating

within sectors most severely affected by the economic crisis, i.e., the COVID-19 pandemic, while the second group consists of companies operating in the least affected sectors, as indicated in Table 2. Extensive empirical research has demonstrated the significant impact of the COVID-19 pandemic on firm performance, yet this impact varies considerably across different business sectors, e.g., [226,227]. Variations in market share and access to capital among industries play pivotal roles in shaping these findings [228]. Larger industries tend to exhibit greater resilience during crises due to their multiple sources of funding that support operational continuity, both internally and externally. Consequently, exploring industry dimensions is crucial for understanding the heterogeneity of the impacts of economic crisis and CSR on BTD levels within corporate financial reports across industries.

To conduct this analysis, we re-ran our regression models separately for each industry group. The results are presented in Table 8, which is divided into two panels (Panels A and B) comprising a total of 12 specifications. Panel A displays the regression outcomes for the industry group least impacted by the pandemic, while Panel B shows the results for the industry group most affected by it. Each panel includes six specifications. Three of these specifications utilize traditional panel data regression models (FE or RE models), while the remaining three employ system-GMM regression models. We opted for the system-GMM model to maintain consistency in addressing endogeneity bias throughout our analysis. Broadly speaking, estimation results involving data from the most affected industries tend to be comparable to our baseline findings. This conclusion is especially relevant for the direct influence of CSR and the moderating effect of CSR on BTD measures. The subsequent paragraphs provide a more detailed interpretation of these results.

**Table 8.** Industry Heterogeneity: Economic Crisis and CSR on BTD.

Dependent Variables	$BTD_{it}$		$TEMPBTD_{it}$		$PERMBTD_{it}$	
	FE	Two-Step System-GMM	FE	Two-Step System-GMM	FE	Two-Step System-GMM
<b>Panel A: Sub-sample Used in the Regressions is the Least Impacted Industry</b>						
<b>Models</b>	<b>FE</b>	<b>Two-Step System-GMM</b>	<b>FE</b>	<b>Two-Step System-GMM</b>	<b>FE</b>	<b>Two-Step System-GMM</b>
<b>Specifications</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
$CRISIS_{it}$ ( $a_{10}$ )	0.033 ** (0.012)	0.012 *** (0.004)	−0.001 (0.004)	0.001 (0.003)	0.034 ** (0.010)	0.013 ** (0.006)
$CSR_{it}$ ( $a_{20}$ )	−0.041 (0.050)	−0.084 ** (0.041)	−0.002 (0.015)	0.030 (0.022)	−0.039 (0.051)	−0.086 ** (0.034)
$CRISIS_{it} \times CSR_{it}$ ( $a_{30}$ )	−0.028 (0.039)	0.081 *** (0.021)	0.013 (0.015)	0.020 *** (0.006)	−0.041 (0.031)	0.053 *** (0.015)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	149	117	149	117	149	117
Firms	28	27	28	27	28	27
R-squared	0.983		0.209		0.981	
Hausman ( $\gamma$ )	11.45 [0.009]		8.90 [0.016]		9.16 [0.015]	
Wald Chi <sup>2</sup>		$6.69 \times 10^6$ [0.000]		62,655.58 [0.000]		$2.97 \times 10^6$ [0.000]
Sargan Test		14.349 [0.279]		10.641 [0.560]		16.381 [0.174]
Arellano – Bond Test ( $m_2$ )		−0.776 [0.438]		−0.804 [0.421]		−0.543 [0.587]
Instruments		27		27		27

Table 8. Cont.

Dependent Variables	$BTD_{it}$		$TEMPBTD_{it}$		$PERMBTD_{it}$	
<b>Panel B: Sub-sample Used in the Regressions is the Most Impacted Industry</b>						
Models	FE	Two-Step System-GMM	RE	Two-Step System-GMM	RE	Two-Step System-GMM
Specifications	(7)	(8)	(9)	(10)	(11)	(12)
$CRISIS_{it}$ ( $a_{11}$ )	0.048 *** (0.004)	0.035 ** (0.014)	0.001 (0.004)	0.011 (0.009)	0.047 *** (0.008)	0.022 (0.032)
$CSR_{it}$ ( $a_{21}$ )	0.266 *** (0.026)	0.227 *** (0.058)	0.002 (0.010)	0.033 (0.035)	0.265 *** (0.034)	0.213 *** (0.061)
$CRISIS_{it} \times CSR_{it}$ ( $a_{31}$ )	−0.087 ** (0.023)	−0.052 (0.057)	0.009 (0.015)	−0.043 (0.033)	−0.098 ** (0.037)	−0.014 (0.065)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	323	238	323	238	323	238
Firms	69	63	69	63	69	63
R-squared	0.978		0.413		0.960	
Hausman ( $\gamma$ )	39.67 [0.001]		1.92 [0.246]		2.24 [0.199]	
Wald Chi <sup>2</sup>		8517.60 [0.000]		290.24 [0.000]		4278.1 [0.000]
Sargan test		14.910 [0.313]		17.367 [0.183]		15.785 [0.261]
Arellano–Bond test ( $m_2$ )		0.995 [0.320]		1.604 [0.109]		1.119 [0.263]
Instruments		27		27		27

Note: Specifications 1, 3, and 5 report Driscoll and Kraay's [149] SEs in parentheses under coefficient estimates. Hausman ( $\gamma$ ) shows robust Hausman test results. Specifications 9 and 11 are estimated using the RE model since the Hausman test fails to reject the null hypothesis for no FE. In specifications 2, 4, 6, 8, 10, and 12, the included industry FE considers variations in BTD between sectors, distinguishing those known as hard-to-tax from those that are not. Control variables are included, but the estimation results are omitted for simplicity. The coefficient differences between Panels A and B are reported in absolute terms. \*\*, and \*\*\* represent statistical significance at the 5% and 1% levels, respectively.

The findings from Table 8 indicate that the economic crisis led to an increase in both the size of aggregate BTD and permanent differences among companies in industries least impacted (Panel A) and most impacted (Panel B). These results align with our overall research conclusions regarding the relationship between the crisis and BTD. However, it is crucial to note the disparity in the coefficients' magnitude, where the positive effects of the economic crisis on these BTD measures appear more pronounced in severely affected industries. These findings contrast with Kobbi-Fakhfakh & Bougacha [21], who reported that the COVID-19 pandemic affected corporate tax avoidance uniformly across industries, regardless of potential industrial failure for BTD. Nevertheless, our results are consistent with those of Shen et al. [229], who, using financial data from listed Chinese companies, found that the negative impact of COVID-19 on company performance was more pronounced in industries severely affected by the pandemic. Our findings thus underscore the importance of considering industry-specific conditions when analyzing the relationship between crises and corporate financial behaviors. Studies that could delve deeper into the underlying mechanisms driving these disparities are certainly needed to provide more nuanced guidance for policymakers and corporate strategists navigating uncertain economic environments.

As shown in Table 8, our findings related to the positive impact of CSR on two BTD indicators, namely total BTD and permanent differences, remain intact when using a subsample of listed companies from the most affected industries. In contrast, when our



investigation was carried out by employing data from the least affected industries, the opposite results were observed: CSR was found to have a negative effect on both total BTD and permanent differences. These negative effects were predominantly observed in the two-step system-GMM regression models, reaching a significance level of 5%. The contrasting results observed regarding the impact of CSR on BTD indicators in the least affected industries can be partly explained by differences in corporate culture and strategic responses to economic crises. Notably, in industries experiencing a less severe impact from the economic crisis, companies may perceive fewer immediate pressures to engage in CSR activities for crisis management purposes. Consequently, their CSR efforts might not be as strategically integrated with tax planning and earnings management strategies. These findings are understandable, given that the least affected industries typically have greater market share and access to capital [228]. Furthermore, these industries naturally exhibit a negative correlation with temporary differences, as demonstrated in Table 5.

Lastly, when the analysis focuses on the most affected industries, we observe that the moderating effect of CSR on the relationship between the crisis and BTD measures continues to show a negative sign, consistent with the baseline findings. However, these effects are significant only in estimation models that do not address endogeneity bias—namely, FE and RE—and are not significant in the two-step system-GMM estimation model, which corrects this bias. Thus, we choose to believe that CSR does not moderate the relationship between the economic crisis and BTD among the most affected industries, which is in line with the baseline results.

Conversely, the moderating effect of CSR turns positive when analyzing data from the least affected industries. These estimation results are significant at the 1% level for all BTD measures after addressing endogeneity bias using the two-step system-GMM model. This finding is unexpected given our earlier observation of the direct negative impact of CSR on BTD, highlighting the reluctance of industries least affected by the pandemic to engage in aggressive tax planning and earnings management strategies associated with CSR activities. At this point, normative motives and corporate culture theory justify these results. On the other hand, the significant positive moderating effect of CSR suggests that in the least affected industries, where financial stability might mitigate immediate crisis pressures, CSR initiatives could act as a strategic buffer. Companies may strategically leverage CSR to enhance public perception, build resilience, or differentiate themselves amid economic uncertainty, thus potentially influencing BTD positively in crisis contexts. These results are in line with strategic motives and risk management theory. Considering the duality, we suggest that among industries less affected by the pandemic, firms' engagement in CSR generally reduces the size of BTD. However, when linked to the crisis context, CSR stimulates an increase in BTD among less affected industries, which indirectly provides support to our general conclusion on the dominant role of strategic motives in driving CSR practices by Indonesian public companies during times of crisis.

## 6. Conclusions

This study explored the complex dynamics of corporate financial strategies—encapsulated by the concept of BTD and its association with the companies' involvement in CSR programs during times of crisis. Unfortunately, there is a notable scarcity of research on this issue in the literature. This gap is unexpected, given ample evidence that BTD is associated with various managerial behaviors such as financial reporting mismanagement, conservative approaches to profit determination for tax purposes, and engagement in tax avoidance strategies. At the same time, CSR, which forms an essential aspect of managerial behavior driven by normative and strategic motives, has not received attention from BTD studies. In addition, while some scholars suggest BTD as an indicator of financial distress, little research has explored its connection with economic crises. Therefore, we contend that this study offers significant additional insights into the intersection of tax accounting and economic crisis literature.

Based on an unbalanced panel dataset comprising more than 97 Indonesian non-financial firms listed on the IDX between 2017 and 2022, our study reveals that both the

economic crisis and CSR activities positively influence total BTD and permanent differences. These findings highlight the significant role of strategic motives in prompting companies to increase their involvement in CSR initiatives during crises. Specifically, firms strategically utilize CSR programs amidst the pandemic to enhance their corporate image in response to internal challenges such as aggressive tax planning and earnings management. Given that the significant influence of key explanatories is observed mainly on one component of BTD—specifically, permanent differences rather than temporary differences—it suggests that public companies in Indonesia likely relied more on utilizing tax credits rather than adjusting the timing of revenue and expenses to navigate financial challenges during the pandemic period. Such financial strategic options are supported by the introduction of tax installment incentives aimed at bolstering business activity amid the crisis. At the same time, companies utilize CSR as a tactic to reduce regulatory scrutiny and mitigate risks associated with any unethical behaviors related to those financial strategies, aligning with principles from risk management theory. Additionally, our study implies that CSR does not act as a moderator of the relationship between the economic crisis and CSR. All these findings remain consistent after endogeneity bias is corrected from the estimation model using the two-step system-GMM model. Furthermore, this study examines how these impacts vary between the least and most affected industries and indicates that our conclusion remains robust when analyzing a subsample from the most affected industries.

When focusing on the least affected industries as a subsample, the influence of the crisis on BTD is consistently positive. However, the impact of CSR on BTD turns negative, suggesting that normative considerations are the primary driver for companies with significant market shares to engage more in CSR activities. In a broader context, corporate culture emerges as the most relevant theory for explaining the relationship between CSR and BTD. Yet, in the context of a crisis, CSR appears to lead to an increase in BTD among less affected industries, on account of the fact that the moderating effect of CSR on the relationship between economic crisis and BTD is positive and statistically significant. These findings suggest that in industries less affected by the pandemic, where financial stability might alleviate immediate pressures, CSR initiatives could serve as a strategic buffer. Companies may strategically employ CSR to enhance public perception, bolster resilience, or differentiate themselves amid economic uncertainty, potentially exerting a positive influence on BTD. Thus, these results ultimately reaffirm our main conclusion on the predominant role of strategic motives driving CSR practices among public companies in Indonesia during crises.

The findings of this research produce several policy implications that can guide shareholder decisions, regulatory oversight, and corporate behavior in assessing companies' CSR involvement amid economic crises, where strategic motives can potentially mask managerial manipulation. Firstly, investors should adopt a cautious approach by scrutinizing the alignment and transparency of CSR activities with genuine corporate values and long-term sustainability goals. Policymakers could advocate for enhanced disclosure requirements that compel firms to provide detailed accounts of CSR strategies and their integration into broader business practices, ensuring that CSR is not merely a superficial response to mitigate regulatory scrutiny or enhance short-term corporate image. Secondly, by recognizing CSR as a strategic response during crises, policymakers can incentivize and promote ethical CSR practices. It can be achieved through tax incentives or regulatory guidelines that reward companies for genuine CSR initiatives aimed at societal welfare rather than merely reputation management. Considering the potential risks associated with aggressive tax planning and earnings management during crises, enhanced regulatory scrutiny should accompany these incentives. It could involve periodic audits focusing on BTD components and the alignment of CSR activities with genuine societal impact. Policymakers should also tailor support measures to industry-specific needs, particularly in less affected sectors where promoting CSR as a strategic buffer could be beneficial. It could include sector-specific CSR guidelines or industry resilience funds aimed at fostering sustainable and socially responsible practices amidst economic uncertainty. Lastly, this study

encourages companies to adopt long-term strategic planning frameworks that integrate CSR as a core component that can foster resilience against economic shocks. It involves promoting corporate governance practices that prioritize sustainable business models and ethical considerations alongside financial performance.

While this study offers valuable insights into the relationship between economic crises, CSR, and BTD, it is important to acknowledge several limitations that provide avenues for further exploration. One significant limitation is the lack of distinction among different domains of CSR activities. The study does not differentiate between extrinsic CSR activities, such as environmental protection and community relations, and intrinsic CSR activities, such as corporate governance and business ethics, which are focused internally within the company. This distinction is crucial as it could elucidate variations in how different CSR domains influence managerial behaviors, including tax planning and aggressive earnings management, which in turn affect BTD. Understanding the specific impacts of these CSR domains could provide more nuanced insights into how companies strategically deploy CSR initiatives during crises. While this single-country study approach effectively enhances our understanding of the institutional framework influencing our findings, it limits the generalizability of the findings to other geographic regions or periods. It indicates the need for cross-country comparisons and longitudinal studies to validate the robustness of these findings across different contexts. Furthermore, while the study employs advanced econometric techniques to address endogeneity and ensure robustness, ongoing developments in methodologies could offer further refinements in exploring the complex dynamics between economic crises, CSR, and BTD. These considerations highlight promising avenues for future research to deepen our understanding of CSR's role in corporate financial strategies amidst varying economic conditions.

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