

Does Qualified Auditor Opinion Moderate the Relationship between Book-Tax Differences and Firm Value? Evidence from Egypt

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Abstract:

Purpose:This paper aims to examine the effect of qualified auditor opinion on the relationship between Book-Tax Differences (BTDs) and firm value in Egypt.

Design/methodology/approach:We investigate a sample of the Egyptian firms listed on the EGX100 index; during the period of 2014-2018. The final sample was 335 firm-year observations. The data was analysed using OLS regression.

Findings:The results show a significant negative relationship between BTDs and firm value. We also find a significant moderating role to the qualified auditor opinion on the said relationship, as we find that the negative relationship occurs only in firms with qualified audit opinion.

Originality/value:To the best of authors' knowledge, this is the first study that examines the moderating role of qualified auditor opinion on the relationship between BTDs and firm value in Egypt. The results confirm the growing concern of investors about the BTDs for the firms with qualified auditor opinion. Therefore, our results may be interesting to managers, researchers, investors, auditors, and regulators, who care of the potential implications of BTDs when coincide with qualified auditor report.

Keywords:

Qualified auditor opinion, Book-Tax Differences (BTDs), Agency costs, Firm value.

قياس أثر تقرير المراجع ذو الرأي المتحفظ على العلاقة بين الفروق الضريبية وقيمة

المنشأة: دليل عملي من البيئة المصرية

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ملخص البحث:

هدف البحث: يهدف هذا البحث إلى قياس أثر تقرير المراجع ذو الرأي المتحفظ على العلاقة بين الفروق الضريبية وقيمة المنشأة، وذلك بالتطبيق على البيئة المصرية.

منهج البحث: من أجل تحقيق هدف البحث، قمنا بفحص عينة من المنشآت المسجلة في البورصة المصرية والمدرجة على مؤشر EGX 100 خلال الفترة من 2014-2018م، وقد بلغ حجم العينة النهائية 335 مشاهدة، وقد إعتدنا على نموذج الإنحدار وفقاً لطريقة المربعات الصغرى لتحليل البيانات.

نتائج البحث: أظهرت النتائج وجود علاقة سلبية معنوية بين الفروق الضريبية وقيمة المنشأة. كما أظهرت النتائج أيضاً، وجود تأثير معنوي لتقرير المراجع ذو الرأي المتحفظ على تلك العلاقة، حيث لاحظنا أن العلاقة السلبية بين الفروق الضريبية وقيمة المنشأة تحدث فقط في المنشآت التي لديها تقرير مراجع ذو رأي متحفظ.

الإضافة العلمية: في حدود معرفتنا، تُعد هذه الدراسة هي الدراسة الأولى التي تختبر أثر تقرير المراجع ذو الرأي المتحفظ على العلاقة بين الفروق الضريبية وقيمة المنشأة في مصر، كما تشير النتائج إلى تزايد قلق المستثمرين من تزايد الفروق الضريبية لدى المنشآت التي لديها تقرير مراجع ذو رأي متحفظ. لذلك تُعد هذه النتائج مفيدة للمديرين، الباحثين، المستثمرين، المراجعين الخارجيين، والمنظمين المهتمين بالآثار المحتملة للفروق الضريبية عندما تتزامن مع تقرير المراجع ذو الرأي المتحفظ.

الكلمات المفتاحية: تقرير المراجع ذو الرأي المتحفظ، الفروق الضريبية، تكاليف الوكالة، قيمة المنشأة.

1-Introduction:

Book-Tax Differences(BTDs)can be defined as the differences between accounting income that is governed by accounting standards and taxable income that is governed by tax legislations,Financial accounting aims to provide useful information to stakeholders depending on IFRS, which provide discretion to managers when preparing financial statements (Dhaliwal et al. 2009; 2017).On the contrary, the purpose of tax legislation is the collection of revenues and the provision of financial resources to the tax authority, achieve tax compliance to generate revenue to finance various plans for economic development.Therefore, tax rules are more stringent compared to accounting standards (Phyllis 2003).

Consequently, BTDs stem from the divergence between the flexibility in accounting standards compared to tax rules, in addition to inconsistent treatment for many of revenues and expenses items under IFRS compared to tax rules, managers may exploit discretion in IFRS to engage in earnings management which has a direct effect on BTDs.For example, management's judgment when estimating the useful life of non-current assets, the rates to use for calculating depreciation and methods to adopt ultimately affect accounting income and BTDs (Comprix et al. 2011).Moreover, managers may affect the BTDs across investing in exempted areas controlling the size and amount of this investment,also they control the amount and timing of provisions that are not-deductible under tax law that recognised under accounting conservatism (Moore and Xu 2018).

Therefore, BTDs carry a lot of information for investors and other stakeholders.Their presence is not limited to the difference between tax legislation and accounting standards.However, it may stem from many administrative, financial and accounting decisions, such as earnings management and tax avoidance activities.Earnings management is considered as unethical behaviour that affects negatively the quality of accounting information (Johl et al. 2007; Omid 2015; Eliwa et al. 2016), tax avoidance that aims to achieve tax savings, may obscure the firm's transparency, increasing agency costs (Desai and Dharmapala 2006;Balakrishnan et al. 2019).This increases the concerns of earnings quality for the firms with higher BTDs levels (Lev and Nissim 2004;Hanlon 2005; Blaylock et al. 2012).

Previous literature indicate that BTDs is considered as one of the most important indicators that signal agency problems in the firms, stakeholders

depend heavily on BTDs when making their decisions, such as investors (Hanlon 2005; Dhaliwal et al. 2009; Comprix et al. 2011; Dhaliwal et al. 2017; Eissa 2021), analysts (Weber 2009), auditors (Hanlon et al. 2012; Martinez and Lessa 2014), and credit rating agencies (Ayers et al. 2010).

There were some calls for the book-tax conformity between accounting income and taxable income (e.g., Whitaker 2005). Some literature confirms the importance of maintaining the flexibility of accounting standards, claiming that such convergence will not constrain tax avoidance practices, but the capital markets may lose many advantages that result from the flexibility of accounting standards, which ultimately reflected negatively on the disclosure quality in the financial statements (Hanlon and Shevlin 2003; Hanlon et al. 2008; Dhaliwal et al. 2017). However, the interpretation of tax differences in the context of the management's judgment and the flexibility available to the managers when preparing financial statements makes the issue more complicated and creates a case of uncertainty about the information quality disclosed in the financial statements, which negatively affects the informativeness of accounting information (Hanlon 2005; Comprix et al. 2011).

Under the agency theory, BTDs signal various aspects, especially the motives for BTDs, such as tax avoidance, suspicious accounting practices. Therefore, BTDs carry information about fraud risks (Ettredge et al. 2008; Huang and Wang 2013), tax risks (Dhaliwal et al. 2017), and bankruptcy risks (Noga and Schnader 2013). Literature has examined the effect of BTDs level on firm value (e.g., Hanlon 2005; Desai and Dharmapala 2009; Tang and Firth 2012). However, they do not examine the moderation effect of auditor opinion on investors' valuation for BTDs.

Consequently, our contribution will be as follow, we extending the recent literature that examined the implications of BTDs on firm value, considering the potential moderation role of qualified auditor opinion on this relationship in Egypt as one of the largest emerging markets in the Middle East and Africa, the higher percentage of the qualified auditor opinion in our sample help us examining this relationship, about 37.3% of the observations in the sample has got a qualified auditor report. In addition, the amendments that have been made to the Egyptian tax law since 2005 with the issuance of Law No. 91 and the following amendments have tightened the penalties on auditors in the case of tax evasion, which may affect the BTDs, tax avoidance activities, and tax risk in the firms. Within the limits of the researchers' knowledge, it is the first study that examines

the effect of qualified auditor opinion on the relationship between BTDs and firm value in Egypt.

The results show a significantly negative effect of BTDs on firm value. This negative relationship occurs only in the firms with qualified auditor opinion. Our results are useful to researchers, auditors, investors, regulators, tax authority, managers, and other stakeholders, who care of the potential implications of qualified auditor opinion BTDs on the relationship between BTDs and firm value.

The rest of this paper will be organised as follows; *Section 2*: Book-Tax Differences (BTDs) and agency costs. *Section 3*: Previous literature and developing the research hypotheses. *Section 4*: Research methodology. *Section 5*: Empirical results and discussion. Finally, *Section 6*: Conclusion and the future research.

2- Book-Tax Differences (BTDs) and agency costs

Jensen and Meckling (1976) define an agency relationship as a contract in which shareholders (principals) assign another person (agent) to manage the firm. Agency costs refer to the costs incurred by the shareholders in the agency relationship included in the costs of control and costs incurred when preparing financial statements and providing additional information to shareholders and the other losses (Owusu and Weir 2018). The separation between ownership and control leads to non-zero costs, and these costs increase in the countries with weak legal systems and low protection investor systems (Gugler et al., 2003). Managers as agents with private information about the firm's financial position may use complex tax avoidance activities to transfer wealth from the shareholders. This view is represented by Desai and Dharmapala (2006) who confirm that tax avoidance is accompanied by rent extractions activities ranges from earning management, theft firm's earnings and to exaggeration of executive compensation, which become easier according to ambiguity accompanied with tax avoidance activities to conceal these activities from the tax authorities.

BTDs is the difference between the value of the accounting income and the taxable income, accounting income is determined when applying IFRS, while the taxable income is determined when applying legislation and tax rules, and these BTDs may arise naturally as results of divergence between the applied rules to calculate of them (Moore 2012; Tang and Firth 2012) or arise according to agency problems that occurs according to tax

avoidance or earnings management practices which in both case increase the likelihood of managerial rent extractions (Desai and Dharmapala 2006).

BTDs are divided into Permanent Book-Tax Differences (PBTDs) and Temporary Book-Tax Differences (TBTDs). PBTDs arise when both accounting standards and tax legislation specify different treatments for some revenues or expenses, leading to permanent differences that will not be reversed over time, it remains permanent and continuous throughout the life of the firms, and its impact is reflected directly on the current period, without extending to the subsequent periods. For example, exempted revenues that are recognised in accounting and will not be recognized under tax law, and the approved accounting expenses that are not deductible under the tax law. PBTDs stem from differentiation in accounting versus tax treatment for revenues and expenses. However, it is affected by some administrative decisions, such as decisions that lead to investing in exempted areas and size of these investments, and timing and amount of provisions that are not deductible under tax rules but recognised under accounting conservatism (Moore and Xu 2018).

On the other hand, TBTDs stem from the difference in the timing of recognition of some of the income items and expenses for accounting versus tax purposes, and TBTDs are reflected in the next periods. In the future, it may increase or decrease the taxable income. It affects the income statement, and its effect extends to the balance sheet statement. Some of TBTDs are short-term, reflected in the next period immediately, however, some are long-term, that are reflected in more than one future period. A common example of TBTDs is the depreciation of the fixed assets, where the firms may use an accounting depreciation rate that differs from the tax rate. If the accounting rate is less than the tax rate, this will ultimately increase accounting income and reduce in taxable income until the asset is fully depreciated, then the effect will be reversed thereafter, where the accounting depreciation is recognised at the time when the tax depreciation of this asset is zero, and therefore the taxable income increases and the accounting income decreases as a result of this procedure, over time the final effect becomes zero. Therefore, TBTDs do not only reflect the differences between the accounting and tax handling of revenue and expense items. Rather, it reflects the management's judgment on estimating the useful life of fixed assets and the accounting depreciation rates and methods that are used in the firms (Hanlon and Heitzman 2010; Comprix et al. 2011).

Accordingly, BTDS stem legitimacy, as the inherent differences between accounting standards and tax legislation, or for questionable reasons, as a result of earnings management and tax avoidance, high levels of BTDS can signal an exacerbated agency problems and conflicts of interest between management and shareholders, which may be confirmed with the issuance of a qualified auditor report. Literature indicates that increasing BTDS levels is considered as a red flag of agency problems in the firms, and provide a signal for financial, accounting and tax risks in firms, which affect negatively firm value (Desai and Dharmapala 2006; Blaylock et al. 2012; Noga and Schnader 2013; Eissa 2021). However, the literature did not examine the qualified auditor opinion, as an additional confirmation of the agency problems that may moderate the investors' valuation of BTDS.

3- Previous literature and developing the research hypotheses

Literature has examined the effect of BTDS on earnings quality. For example, Jackson (2015) finds mixed results when he examined the relationship between TBTDs and PBTDs and future earnings changes depending on the sample of during the period 1973-2006. Donohoe and Knechel (2013) confirm that the absolute value of BTDS is a better reflection of earning quality when they examined a sample of US firms during the period 2002-2010. In Brazil Martinez et al. (2016) confirms a negative relationship between temporary large positive BTDS on the persistence of earning depending on the sample of Brazilian firms during the period 2003-2012. In China, Tang and Firth (2012) depend on a sample of listed firms during the period 1999-2004, the results confirm that firms with large positive and negative BTDS exhibit less earnings persistence. Consequently, Hanlon et al. (2012) confirm that the absolute value of large BTDS are associated with higher audit fees in the US; because auditors consider higher BTDS as a signal for fraud risk, depending on a sample from 2000-2006. This result is consistent with Martinez and Lessa (2014), who find a positive relationship between the absolute value of BTDS and audit fees depending sample of Brazilian firms during 2009-2011.

Extending literature, some research examines the relationship between BTDS and firm value, Dhaliwal et al. (2009) examine the relationship between absolute value BTDS and cost of capital, depending on Listed Americans firms from 1982 to 2006, they confirm a positive relationship between BTDS and the cost of capital. Moore and Xu (2018) confirm a

positive relationship between variability in total BTDs and private debt costs, depending on a sample of US firms during the period 1996-2012, they confirm a positive relationship between TBTDs and costs of private debt, whereas PBTDs are not. Eissa (2021) examines a sample of Egyptian firms during the period 2014-2018. The results confirm that total BTDs and PBTDs have a negative effect on earnings quality, and the market reacts negatively to increased total BTDs, TBTDs, and PBTDs. Consequently, our first hypothesis will be as follow:

H1: There is a significant effect of BTDs on firm value.

Under the agency theory, the literature confirmsthatqualified auditor opinion is a robust sign for agency costs, Johl et al. (2007); Omid (2015)confirm that earning management increases significantly in the firms with qualified auditor opinion.In the same direction, the literature confirms that higher information asymmetry and weak corporate governanceincreases the likelihood of issuing a qualified auditor opinion (Ballesta and Garcia-Meca 2005; Abad et al. 2017).Examining the market reaction to qualified auditor report still a matter of controversy, some literature confirms that qualified auditor opinion does not have any information value for investors, and has an insignificant effect on share prices and returns (Martínez et al. 2004; Al-Thuneibat et al. 2008; Saleem 2016).However, Fernando et al. (2008) confirm a significant positive relationship between the cost of capital and issuing a qualified auditor opinion. Extending the previous literature, we expect that there is no significant effect of qualified auditor opinion on the relationship between BTDs and firm value.Consequently our second hypothesis will be as follow:

H2: There is no significant effect of qualified auditor opinion on the relationship between BTDs and firm value.

4- Research methodology:

4.1 Sample and Data Sources:

Our initial sample size was all firms listed on the EGX100 index, during the period 2014-2018.The financial statements were obtained from Egypt for Information Dissemination (EGID). We exclude the banking and financial services sector. The exempted firms also excluded in light of the text of Article (49) of the Egyptian Income Tax Law No. (51) Issued in

2005, the sample will be limited to firms that obtained a qualified or unqualified (clean) auditor opinion, and firms with any other auditor opinion will be excluded. Then 33 firms are excluded. Table (1) shows the distribution of our sample based on their industry classification.

| No. | Sector | Firms | observations | % |
|-----|--|-----------|--------------|----------------|
| 1 | Food and beverage | 11 | 55 | 16.42% |
| 2 | Real estate | 11 | 55 | 16.42% |
| 3 | Industrial goods, services and automobiles | 6 | 30 | 8.96% |
| 4 | Construction and materials | 9 | 45 | 13.43% |
| 5 | Personal and household products | 6 | 30 | 8.96% |
| 6 | Basic resources | 6 | 30 | 8.96% |
| 7 | Chemicals | 7 | 35 | 10.45% |
| 8 | Travel and leisure | 5 | 25 | 7.46% |
| 9 | Telecommunications and Technology | 3 | 15 | 4.48% |
| 10 | Healthcare and pharmaceuticals | 2 | 10 | 2.99% |
| 11 | Retail | 1 | 5 | 1.49% |
| | Total | 67 | 335 | 100.00% |

4.2 Variables measurement

Book tax differences: We measured the total BTDs (BTD_{sit}) as the ratio of the difference between accounting income and taxable income to lagged total assets at the beginning of the year, where taxable income calculated as the firm's tax expenses divided by statutory tax rate in the year subtracting the change in carry-forward loss (Hanlon et al. 2005; 2012; Ayers et al. 2009; Lei et al. 2020). We divide the total BTDs into Temporary Book-Tax Differences ($TBTD_{sit}$), which will be calculated by dividing the deferred tax expense by the statutory tax rate during the year, and the Permanent Book-Tax Differences ($PBTD_{sit}$) calculated by subtracting $TBTD_{sit}$ from total BTDs (Ayers et al. 2009; Hanlon and Heitzman 2010; Moore and Xu 2018).

Firm value: We depend on Tobin's Q methods where firm value (F_value_{it}) is calculated as the ratio of the market value of equity plus book value of liabilities to book value of total assets, the market value of equity calculated by multiply outstanding share numbers in the end of the year and average stock price across 12 months started after 3 months of beginning of the year (Desai and Dharmapala 2009; Santa and Rezende 2016; Latif et al. 2017; Eissa 2021).

Auditor opinion: We measure auditor opinion ($A_Opinion_{it}$) as a dummy variable equal one if the firm has qualified auditor opinion, zero if the auditor opinion is unqualified (clean) (Ballesta and Garcia-Meca 2005; Johl et al. 2007; Omid 2015; Vichitsarawong, and Pornupatham 2015).

Control variables:We add some control variables that may affect firm value such as, $ABNACC_{it}$, is abnormal accrual which calculated as the change in total accruals for the firm i in year t (Bauwhede et al. 2003). F_Size_{it} , is the firm size calculated as natural logarithm of total assets of the firm the firm i in year t . $Profitability_{it}$, is the firm's profitability calculated by divide earnings before tax and extraordinary items on the total assets of the firm i in year t . $Growth_{it}$, is the percentage change in the firm's revenue for the firm i in year t . LEV_{it} , is firm's leverage calculated by divided total liabilities on the total assets. A_Size_{it} , is auditor size calculated as dummy variable equals 1 if the firm is audited by big4 auditors, 0 otherwise. Finally, to mitigate the issue of reverse causality concerns we control for lag firm value, as higher market value firms may exhibit higher BTDS (Dezsö and Ross 2012; Chang and Zhang 2015; Belz et al. 2019). Also, we control for industries and years in our models.

4.3 Empirical models

We will depend on the following model to test the effect of total BTDS on firm value, this model is used widely in previous literature that examined the effect of BTDS on firm value considering some control variables that used by previous literature (Desai and Dharmapala 2009; Abdul Wahab and Holland 2012; Chen et al. 2014; Santa and Rezende 2016; Moore and Xu 2018; Eissa 2021):

$$F_Value_{it} = \alpha + B_1(Ln_BTDS_{it}) + B_2(ABNACC_{it}) + B_3(F_Size_{it}) + B_4(Profitability_{it}) + B_5(Growth_{it}) + B_6(LEV_{it}) + B_7(A_Size_{it}) + B_8(F_Value_{it-1}) + B_9(Ind_Dummies) + B_{10}(Y_Dummies) + \varepsilon_{it} \text{Model(1)}$$

Where; F_Value_{it} is the firm value, Ln_BTDS_{it} is the natural logarithm of total book- tax differences, $ABNACC_{it}$ is abnormal accruals, F_Size_{it} is the firm size, $profitability_{it}$ is firm's profitability, $Growth_{it}$ is the firm growth, Lev_{it} is the firm leverage, A_Size_{it} is auditor size, F_value_{it-1} is lagged firm value.

To test the second hypothesis we will extend the previous model through adding auditor opinion ($A_Opinion_{it}$) and its interaction with $BTDS_{it}$:

$$F_Value_{it} = \alpha + B_1(Ln_BTDS_{it}) + B_2(ABNACC_{it}) + B_3(F_Size_{it}) + B_4(Profitability_{it}) + B_5(Growth_{it}) + B_6(LEV_{it}) + B_7(A_Size_{it}) + B_8(A_Opinion_{it}) + B_9(F_Value_{it-1}) + B_{10}(A_Opinion_{it} \times Ln_BTDS_{it}) + B_{11}(Ind_Dummies) + B_{12}(Y_Dummies) + \varepsilon_{it} \text{Model(2)}$$

Some previous studies emphasise the importance of examining the BTDS types when exploring the implications of BTDS, they confirm that results may varied according to BTDS types (Hanlon and Heitzman 2010; Graham et al. 2012). Accordingly, we will examine the effect of TBTDs and PBTDS on firm valuedepending on the following model:

$$F_Value_{it} = \alpha + B_1(Ln_TBTDs_{it}) + B_2(Ln_PBTDS_{it}) + B_3(ABNACC_{it}) + B_4(F_SIZE_{it}) + B_5(Profitability_{it}) + B_6(Growth_{it}) + B_7(LEV_{it}) + B_8(A_Size_{it}) + B_9(F_Value_{it-1}) + B_{10}(Ind_Dummies) + B_{11}(Y_Dummies) + \varepsilon_{it} \text{Model(3)}$$

To test the second hypothesis depending on BTDS types (TBTDs and PBTDS) we will extend the previous model through adding auditor opinion ($A_Opinion_{it}$) and its interaction with BTDS types (H2):

$$F_Value_{it} = \alpha + B_1(Ln_TBTDs_{it}) + B_2(Ln_PBTDS_{it}) + B_3(ABNACC_{it}) + B_4(F_SIZE_{it}) + B_5(Profitability_{it}) + B_6(Growth_{it}) + B_7(LEV_{it}) + B_8(A_Size_{it}) + B_9(A_Opinion_{it}) + B_{10}(F_Value_{it-1}) + B_{11}(A_Opinion \times Ln_TBTDs_{it}) + B_{12}(A_Opinion \times Ln_PBTDS_{it}) + B_{13}(Ind_Dummies) + B_{14}(Y_Dummies) + \varepsilon_{it} \text{Model(4)}$$

5- Empirical results and discussion

5.1 Descriptive analysis

Table(2)Panel A, provides the descriptive statistics to the study variables. Table (2) shows that the firm value (F_value_{it}) ranges from 0.11 to 3.05 with a mean value of 1.383 and standard deviation is 0.851. The natural logarithm of total BTDS ranges from -7.75 to 0.40 with a mean value of -3.793 and standard deviation is 1.702. The natural logarithm of TBTDs ranges from -11.89 to 0.00 with a mean value of -4.853 and standard deviation is 3.178. The natural logarithm of PBTDS ranges from -8.12 to 0.39 with a mean value of -3.818 and standard deviation is 1.756. In addition, Table(2)Panel A, shows that 132 of observations (39.4%) are audited by big4 auditors, and 125 observations (37.3%) has got a qualified auditor opinion. Table (2)Panel B confirms means of the variables across qualified auditor opinion firms and unqualified (clean) auditor opinion firms, it is clear that qualified auditor opinion firms are higher market value, but this result is insignificant. Qualified auditor opinion firms are more likely to have higher total BTDS, TBTDs, lower PBTDS, but these results are significant at 5% level for TBTDs.

| Table (2): Descriptive statistics | | | | | | | |
|---|--------|----------------------------|-----------|----------------------|---------|----------|------|
| Panel A: Descriptive statistics for the full sample (n:335) | | | | | | | |
| Variable | Mean | Median | Std. Dev. | Minimum | Maximum | | |
| F_Value _{it} | 1.383 | 1.062 | 0.851 | 0.11 | 3.05 | | |
| Ln_BTDS _{it} | -3.793 | -3.623 | 1.702 | -7.75 | 0.40 | | |
| Ln_TBTDs _{it} | -4.853 | -4.989 | 3.178 | -11.89 | 0.00 | | |
| Ln_PBTDS _{it} | -3.818 | -3.578 | 1.756 | -8.12 | 0.39 | | |
| ABNACC _{it} | 0.102 | 0.063 | 0.099 | 0.000 | 0.33 | | |
| F_Size _{it} | 20.977 | 20.832 | 1.854 | 17.04 | 25.47 | | |
| Profitability _{it} | 0.058 | 0.041 | 0.112 | -0.17 | 0.29 | | |
| Growth _{it} | 0.119 | 0.083 | 0.446 | -0.75 | 1.02 | | |
| LEV _{it} | 0.415 | 0.384 | 0.258 | 0.000 | 1.00 | | |
| F_Value _{it-1} | 1.219 | 1.031 | 0.671 | 0.11 | 2.49 | | |
| Dummy variables frequencies | | | | | | | |
| A_Opinion _{it} | | | | A_Size _{it} | | | |
| Qualified Report | | Unqualified (clean) Report | | Big4 | | Non Big4 | |
| No. | % | No. | % | No. | % | No. | % |
| 125 | 37.3 | 208 | 62.1 | 132 | 39.4 | 203 | 60.6 |

| Table (2): Descriptive statistics | | | |
|--|-------------------|-----------------------------|------------|
| Panel B: Means of the variables across qualified opinion firms and unqualified opinion firms | | | |
| Variable | Qualified opinion | Unqualified (clean) opinion | Difference |
| | Mean | Mean | |
| F_Value _{it} | 1.458 | 1.332 | 0.125 |
| Ln_BTDS _{it} | -3.784 | -3.810 | 0.026 |
| Ln_TBTDs _{it} | -4.352 | -5.149 | 0.796** |
| Ln_PBTDS _{it} | -3.870 | -3.798 | -0.072 |
| ABNACC _{it} | 0.102 | 0.102 | 0.000 |
| F_Size _{it} | 20.896 | 21.036 | -0.140 |
| Profitability _{it} | 0.041 | 0.068 | -0.027** |
| Growth _{it} | 0.118 | 0.121 | -0.003 |
| LEV _{it} | 0.482 | 0.376 | 0.105*** |
| A_Size _{it} | 0.104 | 0.572 | -0.468*** |
| F_Value _{it-1} | 1.261 | 1.188 | 0.727 |

Notes: F_Value_{it} is the firm value, Ln_BTDS_{it} is the natural logarithm of total book-tax differences, Ln_TBTDs_{it} is the natural logarithm of temporary BTDS, Ln_PBTDS_{it} is the natural logarithm of permanent BTDS, ABNACC_{it} is abnormal accruals, F_Size_{it} is the firm size, profitability_{it} is firm's profitability, Growth_{it} is the firm growth, Lev_{it} is the firm leverage, A_Size_{it} is auditor size, F_value_{it-1} is lagged firm value, A_Opinion_{it} is auditor opinion.

Table (3) shows the correlation matrix for the study variables. Total BTDS is correlated positively with firm value at 1% level. TBTDs is not correlated with firm value. PBTDS is correlated positively with firm value at 5% level. Auditor opinion is not correlated with firm value. It is obvious that none of the correlation coefficients among the independent variables exceeds 0.80, so that there is no possibility of Multicollinearity in our data (Gujarati, 2003, p. 359).

| Table (3): Pearson correlation between the variables | | | | | | | | | | | | |
|--|----------|----------|-----------|----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1-F_Value _{it} | 1 | 0.164*** | 0.062 | 0.127** | 0.113** | -0.007 | 0.037 | -0.108** | 0.187*** | -0.039 | 0.072 | 0.752*** |
| 2-Ln_BTDS _{it} | 0.164*** | 1 | 0.239*** | 0.919*** | 0.257*** | -0.060 | 0.099* | 0.025 | 0.041 | 0.044 | 0.007 | 0.314*** |
| 3-Ln_TBTDs _{it} | 0.062 | 0.239*** | 1 | 0.241*** | 0.145*** | -0.256*** | -0.150*** | 0.062 | 0.161*** | -0.102* | 0.121** | 0.164*** |
| 4-Ln_PBTDS _{it} | 0.127** | 0.919*** | 0.241*** | 1 | 0.278*** | -0.080 | 0.106* | 0.035 | 0.046 | 0.008 | -0.020 | 0.287*** |
| 5-ABNACC _{it} | 0.113** | 0.257*** | 0.145*** | 0.278*** | 1 | -0.194*** | 0.116** | 0.037 | 0.103* | -0.004 | 0.000 | 0.151*** |
| 6-F_Size _{it} | -0.007 | -0.060 | -0.256*** | -0.080 | -0.194*** | 1 | 0.187*** | 0.074 | -0.050 | 0.263*** | -0.037 | -0.023 |
| 7-Profitability _{it} | 0.037 | 0.099* | -0.150*** | 0.106* | 0.116** | 0.187*** | 1 | 0.110** | -0.259*** | 0.045 | -0.116** | -0.028 |
| 8-Growth _{it} | -0.108** | 0.025 | 0.062 | 0.035 | 0.037 | 0.074 | 0.110** | 1 | 0.111** | 0.071 | -0.003 | -0.006 |
| 9-LEV _{it} | 0.187*** | 0.041 | 0.161*** | 0.046 | 0.103* | -0.050 | -0.259*** | 0.111** | 1 | -0.046 | 0.198*** | 0.156*** |
| 10-A_Size _{it} | -0.039 | 0.044 | -0.102* | 0.008 | -0.004 | 0.263*** | 0.045 | 0.071 | -0.046 | 1 | -0.463*** | -0.048 |
| 11-A_Opinion _{it} | 0.072 | 0.007 | 0.121** | -0.020 | 0.000 | -0.037 | -0.116** | -0.003 | 0.198*** | -0.463*** | 1 | 0.053 |
| 12-F_Value _{it-1} | 0.752*** | 0.314*** | 0.164*** | 0.287*** | 0.151*** | -0.023 | -0.028 | -0.006 | 0.156*** | -0.048 | 0.053 | 1 |

Notes: F_Value_{it} is the firm value, Ln_BTDS_{it} is the natural logarithm of total book-tax differences, Ln_TBTDs_{it} is the natural logarithm of temporary BTDS, Ln_PBTDS_{it} is the natural logarithm of permanent BTDS, ABNACC_{it} is abnormal accruals, F_Size_{it} is the firm size, profitability_{it} is firm's profitability, Growth_{it}, is the firm growth, Lev_{it} is the firm leverage, A_Size_{it} is auditor size, F_value_{it-1} is lagged firm value, A_Opinion_{it} is auditor opinion *, ***, ** refer to two-tailed significance at the 0.10, 0.05 and 0.01 levels, respectively

5.2 Regression analysis

We run 4-four ordinary least square (OLS) models to test our hypotheses. According to Table (4), Fisher's F values are significant in our models. Adjusted R² are 0.640, 0.645, 0.643, and 0.650 respectively. This confirms independent variables in our models explain about 64% to 65% of change in the dependent variable.

Model(1) confirms a significant negative effect of total BTDs on firm value ($\beta = -0.05$, $P < 0.01$), which mean that increase BTDs lead to decrease in firm value which is consistent with the first hypothesis. This result is consistent with results of previous literature which confirm the association between BTDs and agency costs, which in turn affect negatively on firm value (Hanlon 2005; Dhaliwal et al. 2009; Desai and Dharmapala 2009; Comprix et al. 2011; Chen et al. 2014; Santa and Rezende 2016; Luo 2019).

Model (2) confirms that auditor opinion moderates the effect of total BTDs on firm value, the negative effect of total BTDs on firm value become insignificantly ($\beta = -0.013$, $P > 0.1$), however, the interaction effect of auditor opinion and total BTDs has a significantly negative effect on firm value ($\beta = -0.089$, $P < 0.01$). This result means that increase BTDs lead to decrease in firm value only in firm's with qualified auditor opinion. This is inconsistent with the second hypothesis. This result is consistence with Fernando et al. (2008) who find a negative reaction increasing cost of capital concurrently with issuing qualified auditor report, however it is inconsistent with the literature that do not find have any information value of qualified auditor opinion for investors (Martínez et al. 2004; Al-Thuneibat et al. 2008; Saleem 2016).

Model (3) confirms a significant negative effect of TBTDs and PBTDs on firm value ($\beta = -0.019$, -0.045 ; $P < 0.1$ and 0.05) respectively, this result mean that increase TBTDs and PBTDs lead to decrease in firm value which is consistent with the first hypothesis.

Model(4) confirms that auditor opinion moderates the effect of TBTDs and PBTDs on firm value, the negative effect of TBTDs and PBTDs on firm value become insignificantly ($\beta = -0.019$, -0.002 , $P > 0.1$) respectively, however, the interaction effect of auditor opinion and PBTDs has a

significantly negative effect on firm value($\beta = -0.098$, $P < 0.01$). This result mean that increase PBTDs lead to decrease in firm value only in firm's that has got a qualified auditor opinion. This is inconsistent with the second hypothesis.

Regarding the control variables, we find firm size (F_Size_{it}) has insignificant negative effect on firm value in all models. Firm profitability ($Profitability_{it}$) has a significantly positive effect on firm value ($\beta = 0.702, 0.664, 0.670, 0.617$, $P < 0.05$) respectively. Firm growth ($Growth_{it}$) has a significantly negative effect on firm value ($\beta = -0.240, -0.219, -0.228, -0.206$, $P < 0.01$) respectively. Leverage (Lev_{it}) has a significantly positive effect on firm value ($\beta = 0.485, 0.486, 0.507, 0.503$, $P < 0.01$) respectively. Auditor size (A_Size_{it}) has insignificant effect on firm value in all models. Lag firm value (F_value_{it-1}) has a significantly positive effect on firm value ($\beta = 0.940, 0.949, 0.944, 0.955$, $P < 0.01$) respectively. Auditor opinion ($A_Opinion_{it}$) has insignificant positive effect on firm value in models (2), (4).

| Table (4): Regression results, the effect of BTDS on the market value of the firm and the effect of audit opinion on this relationship | | | | | | | | |
|---|--|---------|--|---------|--|---------|--|---------|
| | Model (1) | | Model (2) | | Model (3) | | Model (4) | |
| | Dependent variable= F_Value _{it} | | Dependent variable= F_Value _{it} | | Dependent variable= F_Value _{it} | | Dependent variable= F_Value _{it} | |
| | Coefficient | t-value | Coefficient | t-value | Coefficient | t-value | Coefficient | t-value |
| Constant | 0.027 | 0.073 | 0.130 | 0.350 | -0.086 | -0.230 | 0.007 | 0.019 |
| Ln_BTDS _{it} | -0.050*** | -2.631 | -0.013 | -0.534 | | | | |
| Ln_TBTD _{it} | | | | | -0.019* | -1.885 | -0.019 | -1.434 |
| Ln_PBTDS _{it} | | | | | -0.045** | -2.479 | -0.002 | -0.079 |
| ABNACC _{it} | -0.104 | -0.339 | -0.140 | -0.458 | -0.046 | -0.150 | -0.095 | -0.310 |
| F_Size _{it} | -0.008 | -0.472 | -0.007 | -0.437 | -0.015 | -0.882 | -0.014 | -0.769 |
| Profitability _{it} | 0.702** | 2.469 | 0.664** | 2.341 | 0.670** | 2.355 | 0.617** | 2.148 |
| Growth _{it} | -0.240*** | -3.735 | -0.219*** | -3.405 | -0.228*** | -3.569 | -0.206*** | -3.226 |
| LEV _{it} | 0.485*** | 3.828 | 0.486*** | 3.773 | 0.507*** | 4.006 | 0.503*** | 3.922 |
| A_Size _{it} | 0.015 | 0.217 | 0.020 | 0.262 | -0.007 | -0.099 | 0.003 | 0.039 |
| F_Value _{it-1} | 0.940*** | 19.446 | 0.949*** | 19.698 | 0.944*** | 19.751 | 0.955*** | 19.976 |
| A_Opinion _{it} | | | 0.019 | 0.266 | | | 0.022 | 0.306 |
| A_Opinion _{it} × Ln_BTDS _{it} | | | -0.089*** | -2.595 | | | | |
| A_Opinion _{it} × Ln_TBTD _{it} | | | | | | | -0.002 | -0.108 |
| A_Opinion _{it} × Ln_PBTDS _{it} | | | | | | | -0.098*** | -2.920 |
| Ind_Dummies | Yes | | Yes | | Yes | | Yes | |
| Y_Dummies | Yes | | Yes | | Yes | | Yes | |
| Observations | 335 | | 335 | | 335 | | 335 | |
| F. Test | 27.959*** | | 26.307*** | | 27.209*** | | 24.902*** | |
| R ² | 0.663 | | 0.671 | | 0.668 | | 0.678 | |
| Adjusted R ² | 0.640 | | 0.645 | | 0.643 | | 0.650 | |
| VIF | < 4 | | < 4 | | < 4 | | < 4 | |
| Notes: F_Value _{it} is firm value, Ln_BTDS _{it} is the natural logarithm of total book-tax differences, Ln_TBTD _{it} is the natural logarithm of temporary BTDS, Ln_PBTDS _{it} is the natural logarithm of permanent BTDS, ABNACC _{it} is abnormal accruals, F_Size _{it} is the firm size, profitability _{it} is firm's profitability, Growth _{it} is the firm growth, Lev _{it} is the firm leverage, A_Size _{it} is auditor size, F_value _{it-1} is lagged firm value, A_Opinion _{it} is auditor opinion, Ind_Dummies is industries dummies, Y_Dummies is Years dummies. *, ***, refer to two-tailed significance at the 0.10, 0.05 and 0.01 levels, respectively | | | | | | | | |

5.2 Robustness Check

We re-run 4-four ordinary least square (OLS) models depending on short window when calculating Tobin's Q. the market value of equity is calculated by multiply outstanding share numbers in the end of the year and average stock price across 3 months after the accounting year (Horton 2008; Abdul Wahab and Holland 2012), the results are very similar to the results that appeared in the previous section.

According to, Table (5), *Model (1)* confirms a significant negative effect of total BTDs on firm value ($\beta = -0.041$, $P < 0.05$), this result mean that increase BTDs lead to decrease in firm value which is consistent with the first hypothesis.

Model (2) confirms that auditor opinion moderates the effect of total BTDs on firm value, the effect of total BTDs on firm value become insignificantly positive ($\beta = 0.001$, $P > 0.1$), however, the interaction effect of auditor opinion and total BTDs has a significantly negative effect on firm value ($\beta = -0.101$, $P < 0.01$). This result mean that increase BTDs lead to decrease in firm value only in firm's that has got a qualified auditor opinion. This is inconsistent with the second hypothesis.

Model (3) confirms a significant negative effect of TBTDs and PBTDs on firm value ($\beta = -0.018$, -0.038 ; $P < 0.1$) respectively, this result mean that increase TBTDs and PBTDs lead to decrease in firm value which is consistent with the first hypothesis.

Model (4) confirms that auditor opinion moderates the effect of TBTDs and PBTDs on firm value, the negative effect of TBTDs and PBTDs on firm value become insignificantly negative for TBTDs, positive for PBTDs ($\beta = -0.023$, 0.008 , $P > 0.1$) respectively, however, the interaction effect of auditor opinion and PBTDs has a significantly negative effect on firm value ($\beta = -0.106$, $P < 0.01$). This result mean that increase PBTDs lead to decrease in firm value only in firm's that has got a qualified auditor opinion. This is inconsistent with the second hypothesis.

| Table (5):Regression results, robustness check | | | | | | | | |
|--|---|---------|---|---------|---|---------|---|---------|
| | Model(1) | | Model(2) | | Model(3) | | Model(4) | |
| | Dependent variable = F_Value _{it} | | Dependent variable = F_Value _{it} | | Dependent variable = F_Value _{it} | | Dependent variable = F_Value _{it} | |
| | Coefficient | t-value | Coefficient | t-value | Coefficient | t-value | Coefficient | t-value |
| Constant | 0.020 | 0.051 | 0.135 | 0.344 | 0.502 | 1.259 | 0.544 | 1.352 |
| Ln_BTDS _{it} | -0.041** | -2.045 | 0.001 | 0.037 | | | | |
| Ln_TBTDs _{it} | | | | | -0.018* | -1.652 | -0.023 | -1.607 |
| Ln_PBTDS _{it} | | | | | -0.038* | -1.946 | 0.008 | 0.339 |
| ABNACC _{it} | 0.100 | 0.305 | 0.067 | 0.206 | 0.155 | 0.473 | 0.105 | 0.320 |
| F_Size _{it} | -0.008 | -0.415 | -0.006 | -0.352 | -0.014 | -0.773 | -0.010 | -0.557 |
| Profitability _{it} | 0.602** | 1.992 | 0.544* | 1.808 | 0.570* | 1.883 | 0.533* | 1.740 |
| Growth _{it} | -0.243*** | -3.563 | -0.219*** | -3.209 | -0.233*** | -3.416 | -0.212*** | -3.105 |
| LEV _{it} | 0.578*** | 4.289 | 0.591*** | 4.325 | 0.599*** | 4.443 | 0.607*** | 4.444 |
| A_Size _{it} | 0.010 | 0.137 | 0.002 | 0.021 | -0.010 | -0.131 | -0.016 | -0.196 |
| F_Value _{it-1} | 0.866*** | 18.893 | 0.878*** | 19.191 | 0.870*** | 19.147 | 0.879*** | 19.307 |
| A_Opinion _{it} | | | -0.012 | -0.158 | | | -0.011 | -0.145 |
| A_Opinion _{it} × Ln_BTDS _{it} | | | -0.101*** | -2.764 | | | | |
| A_Opinion _{it} × Ln_TBTDs _{it} | | | | | | | 0.010 | 0.469 |
| A_Opinion _{it} × Ln_PBTDS _{it} | | | | | | | -0.106*** | -2.955 |
| Ind_Dummies | Yes | | Yes | | Yes | | Yes | |
| Y_Dummies | Yes | | Yes | | Yes | | Yes | |
| Observations | 335 | | 335 | | 335 | | 335 | |
| F. Test | 27.733*** | | 26.202*** | | 26.881*** | | 24.561*** | |
| R ² | 0.662 | | 0.670 | | 0.665 | | 0.675 | |
| Adjusted R ² | 0.638 | | 0.644 | | 0.641 | | 0.647 | |
| VIF | <4 | | <4 | | <4 | | <4 | |

Notes:F_Value_{it} is the firm value, Ln_BTDS_{it} is the natural logarithm of total book-tax differences, Ln_TBTDs_{it} is the natural logarithm of temporary BTDS, Ln_PBTDS_{it} is the natural logarithm of permanent BTDS, ABNACC_{it} is abnormal accruals, F_Size_{it} is the firm size, profitability_{it} is firm's profitability, Growth_{it}, is the firm growth, Lev_{it} is the firm leverage, A_Size_{it} is auditor size, F_value_{it-1} is lagged firm value, A_Opinion_{it}is auditor opinion, Ind_Dummies is industries dummies, Y_Dummies is Years dummies. *, *** refer to two-tailed significance at the 0.10, 0.05 and 0.01 levels, respectively

6- Conclusion and the future research

Book-Tax Differences (BTDs) is the difference between the accounting income and the taxable income. It is divided into Permanent Book-Tax Differences (PBTDs) and Temporary Book-Tax Differences (TBTDs). BTDs may arise naturally as a result of divergence between the IFRS and tax legislations, or arise according to agency problems that occurs according to managerial rent extractions concurrently with tax avoidance (Desai and Dharmapala 2006), which affect negatively on earnings quality (e.g., Donohoe and Knechel 2013; Tang and Firth 2012), and firm value (e.g., Dhaliwal et al. 2009; Moore and Xu 2018). Therefore, we hypothesis BTDs and BTDs types (Permanents and Temporary) affect negatively firm value in Egypt. We analysed sample of 67 firms (335 firm-years observations) during the period 2014-2018. Our hypothesis is formulated based on the agency theory, which assumes that BTDs give strong indicators about the accounting and tax risks in the firms, and investors consider those BTDs when making their investment decisions. The result was consistent with our first hypothesis (H1).

We extend the literature to examine the effect of qualified auditor opinion on the relationship between BTDs and firm value. The literature confirms that qualified auditor opinion is a robust sign for agency costs (e.g., Johl et al. 2007; Omid 2015). However, the market reaction to qualified auditor reports is still a matter of controversy (e.g., Martínez et al. 2004; Fernando et al. 2008). We find robust evidence that qualified auditor opinion moderate the relationship and the negative of BTDs on firm value occurs only in firms with qualified auditor opinion, which was inconsistent with our second hypothesis (H2). This indicates that investors in Egypt considering increase BTDs as red flag for agency problems especially when higher BTDs concurrently with qualified auditor reports.

In light of the foregoing, we recommend that BTDs need more attention in Egypt. Firms should provide a higher quality financial statements to avoid the qualified auditor opinion, do their best to reduce BTDs differences and in the case of inevitable higher BTDs, firms should provide additional disclosure explain the reasons for the increase in BTDs level to avoid the negative effect on firm value. Investors should consider the potential negative effect of the qualified auditor opinion which appears indirectly when BTDs increased. Finally, the regulator should consider auditor independence providing higher audit quality as their opinions has information value in the capital markets.

Finally, we suggest that future studies, as an extension of this study, can examine the effect of auditor specialisation, audit fees on the relationship between BTDs and firm value, and the effect of corporate governance on the relationship between BTDs and firm value.

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