

# **CORPORATE TRANSPARENCY AND TAX AVOIDANCE**

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## **Abstract**

Tax avoidance reduces the transfer to government from a shareholder is a traditional way to enhance the shareholders' value. The tax avoidance organization viewpoint proposes that entrepreneurial managers exploit the obfuscator charge aversion nature to cover the lease extraction. I utilize a self-built opacity index and tax avoidance measures to break down the corporate transparency connection with tax avoidance to feature this conflict. In this review, I have discovered transparency firms that conceivably are less extreme organization issues and keep away from more tax avoidance comparative with opaque counterparts. The evaluated results suggest that managers are engaging with tax avoidance to enhance the wealth of shareholders. Further, I have distinguished that financial investors place a superior value on tax avoidance yet decline corporate opacity. Consistency exists on corporate transparency, monitoring administrative activities, and lightens the external financial investors' regard to hidden organization costs with charge tax avoidance.

## **Introduction**

This paper is based on the relationship between tax transparency and corporate tax in Pakistan, which is unacceptable. We refer to two issues here by observing the definitional and conceptual difficulties associated with the former, limit and complexity of the latter (Rezaei, F., & Ghanaeenejad, 2021). To prove our evidence, we consider two recent developments which are done on the disclosure of requirements:

- Country to country reporting
- Tax strategy publication

By reflecting on the potential impact of these evaluated requirements, we identify the tax benefits transparency and costs which is well understood. It is concluded that potential dysfunctional consequences with greater transparency need care before it changes and requires more transparency (Chen et.al, 2020). Transparency demands more information in the centre, but it would be problematic because it is not automatically translated into behaviour-changing results. In this study, two research questions are examined;

**Q1:** transparency firms can avoid more or less tax as compared to opaque counterparts?

**Q2:** firm valuation and tax avoidance have a relationship, and if they have a relationship, does the strength depend on corporate transparency?

To the shareholders and firms, income tax represents a high cost, so under this regime, Pakistan needs to move more than the third pre-tax profit to administrative, local government, and state. The exercises of tax avoidance diminish the exchange from stakeholders to the government that improves shareholders' wealth. Through the arising stream of literature, tax avoidance is inspected in the agency arrangement, which recommends that opportunistic chiefs utilize a few advances to stay away from tax ahead advance management rather than interest and

investor (Razali, M. W. M., Ghazali, 2018). The agency's perspective in terms of tax indicates that tax avoidance is not always the desire of stakeholders because the combined cost that includes costs directly with tax avoidance activities and non-tax activities outweigh the potential tax saving that accrues the shareholder. The agency cost refers to the discount prices imposed by shareholders derived from the tax avoidance transaction if the shareholder believes that the tax transaction is accompanied by rent extraction (Yee, C. S., Sapiei, N. S., & Abdullah, 2018).

Another stream is that corporate transparency defines an availability of firm-specific information outside of shareholder impact the firm value. Transparencies in financial reporting increase the trust of people in public information regarding management investment and operations. External transparencies have a role in monitoring managerial behaviour, so corporate transparency reduces the risk of potential premium expropriation of shareholders through opportunistic managers (HAGHIGHAT et.al, 2021).

The positive connection between opacity and tax avoidance recommends that tax avoidance is more attracted by chiefs and upgrade investor wealth. A superior comprehension of relationships between corporate tax and transparency and firm worth is applicable for two reasons. The primary explanation is the connection between corporate transparency and tax avoidance, where the management forms in with many assessments exercise to lessen the firm burden tax. These activities claim favourable tax avoidance granted by extensive tax planning, legislation with greater risk and uncertainty (Li et.al, 2020).

Despite the handful of tax avoidance, the transaction is revealed by social media, and a large sample of evidence show the perspective of tax avoidance dominants. Lack of details are publicly available tax disclosure makes it difficult for the outside investors to judge the nature of tax avoidance and identify the tax avoidance that is accompanied by rents diversion. This problem is exacerbated by tax rule and managerial intentional omission details, so to avoid it by tax authorities, managers have incentives that reduce the tax level regarding tax transactions disclosure undertaken by shareholder wealth enhancement. Therefore, the link between corporate transparency and tax avoidance suggests that managers must engage with tax avoidance. Engagement in tax avoidance enhances the wealth of shareholder and abstract the payment in a large economy segment.

The 2nd reason is that some high scandals have the potential to destroy value greater than firms that use aggressive tax activities for manufacturing earning and mask the self-driving behaviour. Some samples show the investors response, which negatively affects certain extreme aggressive tax transactions but a little bit of evidence of how an investor avoids the general activities (Rasaeiyan, A., & Akbari, 2021). To beat this gap, this review gives an idea of how financial investor's value tax avoidance, and the valuation effect of avoidance of tax collection might differ from the corporate transparency.

Based on the evaluated measurements, corporate transparency relation with tax avoidance, I measure the tax avoidance by using cash effective rates of taxes. An opacity index is constructed to rank the relative opaqueness of firms with the following scopes: acquisition of private information, earning quality, uncertainty in information, and information dissemination. The sample of this study consists of S and P with 1500 firms from time 2014-2020. Through this study, it is founded that tax avoidance has a positive relation with transparency. The result holds control of a firm that affects the firm tax planning incentives and tax planning opportunities (Durnev, A., & Guriev 2021). The positive association of corporate transparency and avoidance of tax supports the dominance of value enhancement and suggests that tax avoidance is likely to engage managers and enhance shareholder wealth. To identify the value implications among transparency and opaque firms, this paper examines the interaction of corporate transparency and tax avoidance that influence the firm value. The evaluated results show that average depositors place a superior price on avoidance of tax, which decreases corporate opacity.

## Literature Review

While conducting a literature review, we firstly contribute the implications of corporate tax avoidance, whose results suggest that the economy of value-enhancing effect dominates tax avoidance. Secondly, we examine the cross-sectional variation in tax avoidance place significant impact on the behavior of tax avoidance firm. The positive relation of tax avoidance and transparency suggest the opaque information of firm operation to avoid tax. Lastly, the literature review contributes to corporate transparency, which examines the impact of corporate transparency on tax avoidance behaviour.

## Avoidance of Tax

In this study, an examination of two streams is performed, which are tax avoidance and corporate transparency. Neuman, S. S., Omer, T. C., & Shelley (2021) to the researcher, it is broadly identified that the definition of tax avoidance is the reduction in direct taxes regarding to pre-tax earnings of accounting. No universal acceptance of tax avoidance is identified, but it is represented that tax avoidance have a continuum process of tax planning that encompasses the activities, preferably legal (Neuman, Omer, & Shelley, 2021). Tax avoidance activities are the tax-

saving devices that transfer the resources from the shareholder state and increase the value of the tax firm. The merging literature emphasizes that cost implications of agency towards tax avoidance suggest that it does not always help enhance the outside shareholder wealth. From the past two decades, studies show that interesting insights of firms avoid the tax than others. These studies focus on the firm's characteristics as proxies with incentives, opportunities, and tax planning resources, which explain why firms avoid tax compared to others (Balakrishnan, K., Blouin, J. L., & Guay, 2013). Agency inconsistencies view the tax aggressiveness. Inger (2021) find that the negative association is the incentive compensation level and tax sheltering level. Firms of poorly governed primarily drive this negative association (Inger, 2021). The high poor incentives align the managerial interest to shareholders and encourage the manager to engage with the tax avoidance and increase the after-tax firm. It will discourage managerial rent extraction. The negative link between tax avoidance and high power incentives suggest that governed firms tend the aggressiveness of more tax with the fact that reduce the diversion associated with sheltering reduction (Chen, 2020).

Durnev, A., Errunza, V., & Molchanov (2021) investigates the ownership of structure that affects the aggressive tax behaviour among non-family firms and family firms. It is found in their study that less tax aggressiveness has counterparts. The consistent notion of protecting family owners with potential expropriation marks the tax aggressiveness as a minority shareholder with a discount family firm that peruses tax planning (Durnev, A., Errunza, V., & Molchanov, 2021).

Many other studies are conducted which affect the corporate tax. That is why Durnev, and Errunza identify after-tax usage in accounting earning in business unit manager and CEO plans that lead to more efficient and effective tax planning. Ramadhiani, S., & Dewi (2020) found a link between the tax director plan of compensation and firm tax attributes (Ramadhiani, S., & Dewi, 2020). Abedi, N., & Safari Gerayli (2021) examines the tax aggressiveness with executive compensation and found that they are being rewarded for being the tax aggressiveness. From the study of tax avoidance, it is identified that tax avoidance has two crucial terms. First, it is identified that corporate transparency is the most important part for the basis of avoidance of corporate tax. The second thing is a point that provides a large sample of evidence on the corporate tax avoidance valuation. It is shown that with the corporate transparency the effect of valuation varies, which is relatively less exposed but the most important thing is it is affecting corporate activities (Abedi, N., & Safari Gerayli, 2021).

### **Corporate transparency**

If we define the corporate transparency then it is the availability of information on corporate firms to publicly traded firms outside, so it plays an essential role in the inefficient allocation of resources. By performing research, capital market consequences towards corporate transparency are identified, which show the particular component of transparency in terms that it affects the cost and liquidity of capital. The economic impact of transparency affects the cost of capital and liquidity (Durnev, 2021). The economic impact is limited with corporate transparency in more general capital market consequences like corporate transparency directly affects financial performance by disciplining the corporate insiders in better terms of investment solution with more efficient asset management and reducing the minority expropriation wealth. This argument suggests that there is an effect of corporate transparency on actual corporate activities (Kerr, 2019).

Mills, L., & Sager (2021) show how corporate transparency enhances the firm through monitoring and rules (Mills, L., & Sager, 2021). Pratama (2018) examines that monitoring through recognition makes it profitable and less likely to engage with the divestiture. Many studies show that high financial firms report quality, which is found to diverge less from the level that is predicted or estimated towards investment and exhibit less cash flow investment to flow sensitively (Pratama, 2018). Ilmiani, A., & Sutrisno (2020) documented that opportunistic managers provide segment disclosure, and another researcher found a positive association between diversification excess value and voluntary disclosure quality. These values remain consistent and commit with managers to provide a shareholder with minor mean of management behaviour and mitigate the cross-subsidizing management underperformance (Ilmiani, A., & Sutrisno, 2020).

Previous research identifies that financial analysis serves the corporate manager as an external monitor. Balakrishnan, K., Blouin (2019) say that increasing the analyst coverage is associated with very high value and relates with substantial firms to do the internal governance problems potentially. They help to manage the relatively low operations in investor protection. A direct approach is taken to monitor the financial analysis and examine the relations of a firm financial analyst and their earning behaviour of management. A negative press is found to cover it towards CEO compensation that has an association with the compensation executive (Balakrishnan, K., Blouin, 2019).

Suppose we conclude the corporate transparency literature that it enhance shareholder wealth. This review extends the research by examining the corporate transparency effect with management of corporate tax. A unique setting is identified where severe information asymmetry is found among directors and depositors, and optimistic directors who exploit the tax avoidance to extract the rent. The Previous studies reveal the specific mechanism of information. Therefore, it is concluded that overall firm informational environment comprises many interrelated mechanisms of information and monitor the behavior of management and impact the shareholder wealth.

## Descriptive Statistics

### Selection of Sample

In the sample, there are 1500 S&P index firms collected from 2016-2020. An empirical analysis is performed on firms. We start taking samples from 2016 because these days, avoidance of tax activities arises from the corporate shelters believed to have increased over the period. The sample collection process ended in 2020. From various sources, we have collected data. Financial data is collected from the database of Comp state, trading data and stock price from CRSP and executive information is collected from the ExecuComp and institutional ownership of the institute. Several analysts provide earnings per share obtained from IBES.

### Tax Avoidance Measurement

Three measures are calculated from the literature:

The first measure is tax avoidance, which is the tax rate annual cash, practical as the ratio of income tax paid over pretax income. Significant limitations are overcome using the effective cash taxes, which are associated with the effective tax rate. Traditional tax rate excludes the savings of tax which results in an avoidance of tax activities create a temporary book-tax difference.

The 2nd measure is the conventional robust tax rates, including tax possibilities related to dubious tax positions. These positions are taken in kind and downplay the tax aggressiveness. Holding tax has no effect on money effective tax rate and tax aggressiveness. Money effectiveness contains a few errors in estimations, so for example, it doesn't control the nondiscretionary things that cause book-tax contrasts and exaggerate the aggressiveness of tax from specific organizations (Mangoting, Y., Prastya, D. M., Shanty, 2019). To keep away from these errors, we utilize long-run cash with successful tax rate LCETR, the proportion of the number of instalments of assessment more than five years, which are then isolated by pretax pay total to gauge tax avoidance.

Third, we employ tax differences to calculate the aggressiveness in tax, which results in tax book differences having a positive association with IRS and firms engaging with tax shelters exhibiting the tax differences during tax shelters in recent years. It is evaluated that book-tax differences signal tax aggressiveness. To decrease the error, the estimation contains book contrasts attribute to earning management, so I pick a book of tax contrasts as an intermediary for the tax aggressiveness (Suryani, T. M., Lastiningsih, N., & Wibawaningsih, 2021).

### Corporate transparency Measurement

In each firm, relative transparency is positioned by its record, so I rank four intermediaries for opacity: exchanging volume, nature of acquiring, press inclusion, and examiner following. Independently sorted out is summarised and scaled through complete focuses to drive the record from 0.1 to 1.0. Low qualities show a more straightforward firm, with high grades giving more opaque firms.

Earn opacity is used to calculate the financial reporting of transparency (Fadhila, Z. R., & Handayani, 2019). Earn opacity has an absolute value with discretionary accruals based on the adapted model of Jones. It results in managers with intentional manipulations of earning estimate some error, so I utilize that cross-sectional version to estimate the average total accruals value and characterize unusual accruals with the distinction among expected whole accumulation level and genuine firm level. In appendix B, we give the details. In this review, we use the corporate level as an intermediary for private data as the corporate transparency part. Inclusion is determined with examination number giving acquiring per share, which gauges I/B and E/S with adequately 3/4 to financial each year. Press inclusion News is utilized as an intermediary for spread data part for corporate straightforwardness. News is recognized as an opposing source, so we find out about the essential papers of Pakistan. The last info is exchanging volume named Turnover, which intermediary deviation data between financial backers. First, it captures the transact willingness in structure offered and second, the detailed financial transparency, consolidating procuring and non-acquiring straightforwardness.

## Descriptive Statistics

Panel A: Table 1 reports the sample of the selection procedure, which starts with 14355 years of firm observation for 1500 S&P firms over the period 2016-2020. Observations of 4896 firm years are lost because sufficient data is not calculated over the avoidance of tax measures. Further, 934 observations are deleted because sufficient information is not constructed for the control variable, and about 2255 observations which do not have sufficient data for the index of opacity. The concluding sample has 6270 observations with 1344 exclusive firms.

Panel B: Table 1 represent distributive industry with a firm-year observation, so define an association using the Pakistan classification scheme. About 6270 firm years show 42 industries with petroleum, natural gas, transportation and insurance.

Panel B: Table 1 how the distribution of industry interest variables. The precious metals, petroleum and gas, banking industry and soda and candy contain the lowest Lecter. Construction material, machinery, construction defence, consumer goods, machinery and wholesale claim high Lecter.

Table 2 shows tax avoidance in descriptive statistics, avoidance of opacity where panel A illustrate interest variables; the median and mean of cater are 0.297 and 0.308. The mean and median of Lecter are 0.318 and 0.316 and these mean and median are comparable. The PBTD mean and median are 0.007 and 0.014, similar to reports. The opacity measurement with the index value is 0.55 with 25 per cent firm of opacity index 0.425 comparable to the firm 75 % have an opacity index of 0.675. Various inputs of opacity index have a fair amount of variation, and discretionary level has mean value 6.8% of total assets with a range of 6.3% lagged assets.

An analysis is performed with coverage 1.73 as the mean absolute value; suggest that the average firm have six analysts. The total value of coverage is 25% firm, and 75% are 2.40 and 1.10, corresponding to 3 and 11 analysts. A firm with 75% do not get any count of article and firm of 25% cover approximately 12 articles per year with 25% to have an average turnover ratio of 0.67%, and 0.22% is regular turnover ratio.

Panel B: A Descriptive analysis shows the features of a firm using some control variables where samples of average firm have total \$1.3 billion assets, pre-tax return of equity 0.301, leverage 0.223, 55.4% institutional ownership, and market book ratio is 3.551. The top executive of portion with yearly compensation arises from stock option that is predicted to be mean 0.327%. Additionally, there are 17% of observations have net operating loss carryover in fiscal year start.

A correlation is represented among the key variable where the correlation of tax avoidance calculates the 0.001 level. Long-run cash rate and annual effective cash rate have a positive correlation with one another, but correlation magnitude suggests the annual cash effective rate that contains an error in measurement to mismatch the denominator and nominator (Gagalyuk,2020). The second thing observed is that the cash tax rate negatively correlates with the PBTD and magnitude that confirm that it measures tax avoidance in different aspects. It is essential to use much calculation for this analysis, so similar results are measures with other elements that support inferences.

Table 3 opacity uncovers a substantial positive relationship with tax rate measure and negative correlation with tax contrasts proposes opaque firms have less duty tax aggressiveness than their transparency counterparts. The worth of a firm with transparency correlation shows tax aggressiveness to give off an impression of being more valued comparative with the firm, opaque firm with lower market varieties than the transparent firm.

## Tax avoidance and corporate opacity relationship

### Development of hypothesis

Suppose tax avoidance agency cost dominates and suggests tax avoidance makes a shield for management behaviour opportunities. In that case, priority research suggests that firm opacity facilitate opportunism management, so tax avoidance dominant agency cost predicts the following hypothesis:

#### H1 (a): Relative to transparent counterpart's opaque firm has higher tax avoidance

Income tax shows a high cost for businesses and reduces the cash flow available for firms. Manager interests are adequately arranged with owners and engage in the management of effective tax to increase the value of after-tax firm as we have discussed that corporate transparency gives the outside investor an ability to monitor the behaviour of managerial opportunistic better (Khuong, N. V., Liem, N. T., Thu,2020). The domination of enhancing value tax avoidance predicts the reverse sign of relation among corporate transparency and aggressiveness.

#### H1 (b): Relative to transparent counterpart's opaque firms contain low level of tax avoidance

So there would be a third chance of no connection between corporate transparency and tax avoidance. In tax avoidance, administrators extricate rent and another financial investor in tax planning to advance investor wealth. Then, at that point, the cost of agency and the benefit of upgrading tax avoidance exist together and counteract others. A connection is observational between corporate opacity and tax aversion. Following aggressive model is evaluated from the estimation of yearly observation:

$$\text{TaxAgg}_{i,t} = \beta_0 + \beta_1 \text{Opacity}_{i,t} + \sum \beta_k \text{Control Variables}_{i,t} + \text{Year Dummies} + \text{Industry Dummies} + \epsilon_{i,t}$$

“T” is index

“T” is year

“TaxAgg” is dependent variable in CETR, LCETR, PBTD and opacity.

Control variable are “ROE<sub>i,t</sub>” equity return

LEV<sub>i,t</sub> leverage measure

NOL<sub>i,t-1</sub> indicator of variable

ΔNOL<sub>i,t</sub> change in carryforward loss scaled by total assets

Fli<sub>t</sub> is foreign income pre tax

PPE<sub>i,t</sub> is the property plan and equipment

INTANG<sub>i,t</sub> are the intangible assets

UNCON<sub>i,t</sub> are the earning equity income

ASSETS<sub>i,t-1</sub> are total assets natural logarithm from beginning

MB<sub>i,t-1</sub> is market to book ratio

ICOPTION<sub>i,t-1</sub> is the black Scholes value ration of stock options for five top managers with value compensation

IHPERCENT<sub>i,t-1</sub> is the percentage of share which is owned by institutional investor

The primary variable in this study is Opacity, whose agency costs have an apposite link among corporate Opacity and tax avoidance. According to my expectation, a positive coefficient exists in Opacity, and enhancing value of tax avoidance predict the opposite of it. If values enhance to view dominant, then there will be a negative coefficient on Opacity.

The literature concluded that leverage LEV, capital intensity represented as PPE, INTAN intangible intensity and foreign operation to control the planning tax opportunities. I have predicted a positive relation on FI from the results, so I expect a PPE positive sign. That is why I include BINTANG in the regression model, but no indication is predicted due to two reasons. First is intangible intensity extent that affects firm opportunities to shift the income, and second is tax and book treatment for intangible assets (Khuong, N. V., Liem,2020). The second set of control in a regression model is profitability ROE, equity earning UNCON, net operating loss NOL/CNOL, firm age AGE, firm size ASSETS; from previous research, it is not predicted the sign of ROE and emphasis suggest a negative sign of MB. Age is included to be another sophisticated tax control. Between CNOL and NOL, a positive signal is evaluated through which the firm utilize the net operating losses to lower the yearly tax burden. To control its equity earning treatment for financial reporting and tax reporting is done, UNCON is included in our regression model. To capture all these effects, I have included yearly dummies and industry data in the regression model.

## Results

Above analysis indicate opaque firm exhibit lower tax aggressiveness to transparent counterparts. Results are very inconsistent that the opportunistic manager engages in tax avoidance activities to extract the rents. The evaluated results suggest that directors are transparent firms, and external investors can monitor the managers and involve in tax avoidance activity to increase wealth of shareholder.

## Tax Avoidance valuation implication

### Hypothesis development

Corporate transparency has a potential role in moderate relation of firm value and tax avoidance. Previous studies suggest that corporate transparency facilitate the monitoring of investor so contain managerial constraint behaviour. Avoidance of tax creates a shield to expropriate the outside investors by managers then aggressiveness in tax become manifestoed towards severe agency problems (Fatkur, F. M., Ganis,2018). The

corporate agency provides another protection layer that facilitates asset transfer, rent extraction, outright earning theft, and excessive consumption. Corporate opacity has some hidden cost with tax aggressiveness, so the price of agency for tax avoidance suggests a negative relation between firm value and tax avoidance as corporate opacity increases (Katz, S. P., Khan, 2021). If tax avoidance activities are tax-saving activities, then managers have to increase the firm after-tax value and corporate transparency help the outside investor be concerned regarding potential agency problem under the tax aggressiveness. Tax value-enhancing value suggests a positive relationship between tax avoidance and firm value when corporate transparency increases. This statement will lead towards the hypothesis:

**H2: Discount prices for tax aggressiveness decrease with corporate transparency level.**

The role of corporate transparency is moderating among firm value and corporate tax aggressiveness. The interaction of corporate transparency and tax aggressiveness impact the wealth of shareholder:

$$Q_{i,t} = \beta_0 + \beta_1 \text{TaxAgg}_{i,t} + \beta_2 \text{Opacity}_{i,t} + \beta_3 (\text{TaxAgg}_{i,t} * \text{Opacity}_{i,t}) + \sum \beta_k \text{Control Variables}_{i,t} + \text{Year Dummies} + \text{Industry Dummies} + \epsilon_{i,t}$$

“i” is the index firm

“t” is index year

$Q_{i,t}$ , is a dependent variable of firm value

$\text{TaxAgg}_{i,t}$ , is tax aggressiveness

$\text{Opacity}_{i,t}$  value of index opacity

$\text{TaxAgg}_{i,t} * \text{Opacity}_{i,t}$  is the interaction of tax avoidance and opacity

$\text{ROE}_{i,t}$  is return equity

RISK is firm risk

$\text{Growth}_{i,t}$  average sales

$\text{LEV}_{i,t}$  is leverage

$\text{NOL}_{i,t-1}$  is indicator variable

$\Delta \text{NOL}_{i,t}$  is the loss of carryforward

$\text{PPE}_{i,t}$  is the equipment, plan and property

$\text{INTANG}_{i,t}$  show intangible assets

$\text{UNCON}_{i,t}$  is income equity

Age show firm age

I have included the GROWTH, LEV, ASSETS, RISK, ROE in the regression model because previous studies show large, high and risky leverages firm on low Q ratios with high growth firms with good past performance contain high valuation. Additionally, NOL, INTANG, AGE, PPE, CNOL, FI have significant relation with TaxAgg. Yearly dummy data is included in the equation, and I have estimated using equation two the OLS. For heteroscedasticity, some Standard error and time-series correlations are clustered using robust standards error at the firm level.

## Results

By performing a regression analysis for the relation of corporate opacity, firm value and tax aggressiveness I use a variable indicator to capture tax aggressiveness. Indicator is one when firm is in bottom of CETR or top of PBTD in year. Other modules include some additional control like the percentage of senior executive option grants and compensation packages and institutional level ownership that capture manager's

impact incentives and monitoring of institutional tax aggressiveness. In 1 base model opacity index is ( $\beta_2=-0.793$ ) when value p greater than 0.01 evaluate negative coefficient. This shows that investors place large discount on corporate opacity with estimated coefficient on tax aggressiveness is positive and significant value will be ( $\beta_1=0.767$ ) when value of p is less than 0.01 suggest to place premium value on tax avoidance. Regarding to primary variable interaction of opacity and tax avoidance there is a significant negative coefficient which shows corporate opacity increase tax avoidance put negative effect on value of firm show  $\beta_3=-0.978$  when p less than 0.01. These results are very consistent shows the effect of tax avoidance on firm value put difference among poor firms and well governed firms. Model 4-6 show a replication on analysis show an indicator variable which is equals to 1 when firms are towards bottom LECTR. Results are consistent in 1-3 models investor value of tax aggressiveness but premium value decrease as corporate opacity decrease. All of the main references do not change.

## **Additional Analysis**

### **Opacity flow or not from the tax avoidance**

By performing an analysis it is evaluated that firms with more transparent earnings contain a extraordinary level of tax avoidance.

### **The monitoring role of transparency components**

Financial investors place a premium cost on the tax avoidance and increment corporate transparency, which demonstrates the monitoring job by corporate transparency lightens the concern of potential organization expenses of tax avoidance. It is concluded that internal transparency has relative control and gives restricted data from the external investor that mitigates the secret organization cost with tax avoidance exercises.

### **Firm-Level Analysis**

Analysis shows that tax rates firms calculate tax aggressiveness with standard deviation increase with opacity index value to capture the reduction of a tax rate of approximately 2% to 3%.

## **Conclusion and suggestions**

In this study, an investigation is performed on corporate transparency, tax avoidance and firm valuation. This recommends that corporate transparency plays an essential part in the determinants and financial outcomes of assessment aversion. We use S&P firms from the year 2016-2020. It is distinguished that the connection between tax avoidance and corporate transparency. Utilizing tax avoidance measures, it is evaluated that a firm-level of opacity record is controlled by a budget report and self-developed measures towards corporate straightforwardness. It is tracked down that corporate firms keep away from more tax when contrasted with misty firms. This assertion upholds a considerable segment of the economy through which I have inspected the worth upgrading impact of prevailing tax avoidance. Examination reduces the problem of aggressive tax avoidance that prompts opaque earning and supports corporate transparency, which is a fundamental term of corporate tax avoidance.

Then, it is exanimated that valuation power towards the tax avoidance and connection changes with corporate transparency. This examination proposes financial investors place premium worth on corporate avoidance however declines when the firm is more opaque. My review contributes to two exploration streams. The first is setting a corporate management of tax practice that exhibits corporate transparency working with outside financial investors to screen the chief activities, a fundamental determinant for corporate tax avoidance. Second, opaque firms are occupied with more minor tax avoidance exercises than transparent firms, so bound to veils the administrative record extraction in the opaque firms sought after by opaque firms.

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**Appendix A: Variable Measurement – Main Variables of Interest and control variables.**

Variable	Definition
Cash effective tax rate (CETR)	=Cash taxes paid / pretax income ; =#317/#170; CETR is a set as missing when pretax income is <=0; CETR is truncated to the range [0 , 1];
Long – run cash effective tax rate (LCETR)	=the sum of cash taxes paid (#317) from year t-4 to year t / the sum of pretax income (#170) over the same period;
Permanent book-tax difference (PBTD)	={ total book – tax difference- temporary book – tax difference } / lagged total assets; ={Pretax income – (federal income tax + foreign income tax) / statutory tax rate – deferred tax expense / statutory tax rate } / lagged total assets; =#170- (#63+#64) / STR – (#50/STR)} / lag#6; #64 is set as zero if missing;
Tobin’s Q (Q)	=book value of total assets + market value of equity - book value of equity) / book value of total assets; =(#6 + #199*#25 - #60) / #6;
Opacity Index (OPACITY)	An index that ranks the relative opacity / transparency of each firm – year observation
Financial Reporting transparency / opacity (EARNOPACITY)	= Abs(DiscAcc <sub>i</sub> ); Estimate details are provided in the Appendix B.
Analyst coverage (COVERAGE)	= the negative of the natural logarithm of the number of analysts providing an annual earning forecast three quarters prior to the company’s fiscal year end;
Press coverage (NEWS)	=the negative of the natural logarithm of the number of articles containing the company’s name that appear in the major U.S newspapers over the fiscal year t-1;
Trading Volume (TURNOVER)	= the negative of the natural logarithm of the mean daily turnover ratio (e.g. the number of shares traded divided by the total shares outstanding from the daily CRSP) during fiscal year t-1;
Equity in earnings (UNCON)	=#55/lag #6; #55 is set as zero if missing;
Change in NOL(ΔNOL )	=(#52 – lag # 52)/lag #6;
Total accruals (ACC)	=(Income before extraordinary items – operating cash flows) /lagged total assets; ={#18 – (# 308 - # 124) } / lag #6
Profitability (ROE)	= ( # 170 - # 192 ) / lag #60
Leverage (LEV)	=long – term debt/total assets; =(#9+ #34) #6
Net operating loss (NOL)	=Indicator variable coded as 1 if loss carry forward lag #52> 0;
Change in NOL(ΔNOL)	=(#52 – lag #52) / lag #6;
Foreign income (F1)	= #273/lag #6;
Property , plant , and equipment (PPE)	= #8 / lag #6;
Market -to-book ratio (MB)	= (#199*#25)/#60;
Book value of total assets (ASSETS)	=LN(#6);
Firm risk (RISK)	= standard deviation of monthly stock returns for the prior 36

	months;
Growth opportunities (GROWTH)	= 3-year average sales growth over year t-2 to year t; Sales growth = (#12 – lag # 12) /lag #12;
Firm age (AGE)	= LN (1 + the number of years that the firm has been in CompStat);
Intangible (INTANG)	= #33/lag #6; #33 is set as zero if missing;
Option grant (ICOPTION)	The ratio of the Black – Sholes value of stock option granted to top five managers to the value of their total compensation in year t-1;
Institutional holding (IHPERCENT)	The fraction of the firm’s shares owned by institutional investors in year t-1

**Appendix B – Estimate Discretionary Accruals**

I rely on the Jones model (Jones 1991) as modified by DE chow et al. (1995) to estimate normal accruals and abnormal accruals.

Specifically, I estimate the following cross-sectional regression equation using firms in each industry (based on Fama and French (1997) industry classification scheme) for each fiscal year between 1994-2001;

$$\frac{ACC}{ASSETS} = \alpha_0 \frac{1}{ASSETS} + \beta \frac{\Delta SALES}{ASSETS} + \beta_2 \frac{GPPE}{ASSETS} + \epsilon_{j,t}$$

Where total accruals (ACC) are computed directly from cash flow statement (# 123 – (#308-#124) as Hribar and Collins (2002) show that total accruals measured by using cash flow statement contain less measurement error than the ones derived from the balance sheet approach.

Next, I estimate firm – level discretionary accruals as a fraction of lagged assets for firm j during year 1 (DiscAcc<sub>jt</sub>) by using equation (2). The parameters are estimated from Eq. (1). The original relax this assumption by assuming all changes in credit sales are the result of managerial discretion.

$$DiscACC_{jt} = \frac{ACC}{ASSETS} - \left\{ \alpha \frac{1}{ASSETS} + \beta \frac{\Delta SALES - \Delta RECEIVABLES}{ASSETS} + \beta \frac{GPPE}{ASSETS} \right\}$$

Where variable are defined as follows:

$$\text{Total accruals (ACC)} = (\text{Income before extraordinary items and discontinued operations} - \text{operating cash flows}) / \text{lagged total assets};$$

$$= \{ \#123 - (\#308 - \#124) \} / \text{lag} \#6;$$

$$\text{Change in sales } (\Delta SALES) = (\# 12 - \text{lag} = 12) / \text{Lag} = 6$$

$$\text{Gross property , plant , and equipment (GPPE)} = 7 / \text{lag} = 6$$

$$\text{Change in receivable } (\Delta RECEIVABLES) = (\#2 - \text{lag} \# 2) / \text{lag} \#6;$$

**Panel A: Sample selection**

Firm years for S&P 1500 firms , 1994 – 2001	14,355
Less : firms years with missing tax avoidance measures	4,896
Less : firm years with missing control variables	934
Less : firm years with missing opacity measures	<u>2,255</u>

6,270

Panel B Industry distribution of sample firm – years

*Table 1* Sample description

<b>Industry</b>	<b>No of obs</b>	<b>% of obs</b>	<b>CERT</b>	<b>LCETR</b>	<b>PBTD</b>	<b>OPACITY</b>
Food products	161	2.6%	0.309	0.334	0.011	0.516
Candy & soda	12	0.2%	0.237	0.225	0.001	0.585
Beer & Liquor	26	0.4%	0.301	0.305	0.025	0.439
Recreation	34	0.5%	0.328	0.310	0.026	0.537
Printing and publishing	114	1.8%	0.412	0.440	0.003	0.550
Consumer goods	128	2.0%	0.339	0.360	0.005	0.544
Apparel	129	2.1%	0.341	0.347	0.010	0.536
Healthcare	70	1.1%	0.319	0.330	0.009	0.608
Medical Equipment	178	2.8%	0.335	0.321	0.024	0.543
Pharmaceutical products	180	2.9%	0.261	0.270	0.043	0.495
Chemicals	247	3.9%	0.310	0.327	0.009	0.618
Textiles	55	0.9%	0.324	0.329	0.002	0.625
Construction materials	174	2.8%	0.327	0.354	0.008	0.630
Construction	50	0.8%	0.333	0.365	0.005	0.593
Steel works etc.	162	2.6%	0.282	0.288	0.010	0.532
Fabricated products	15	0.2%	0.328	0.272	0.007	0.667
Machinery	291	4.6%	0.335	0.352	0.018	0.570
Electrical equipment	19	0.3%	0.384	0.332	0.015	0.634
Automobiles and trucks	175	2.8%	0.354	0.347	0.012	0.572
Aircraft	39	0.6%	0.261	0.273	0.014	0.424
Shipbuilding railroad equipment	19	0.3%	0.294	0.438	0.002	0.493
Defense	23	0.4%	0.370	0.370	0.013	0.573
Precious metals	7	0.1%	0.297	0.208	0.050	0.396
Non metallic and industrial metal mining	31	0.5%	0.331	0.343	0.025	0.624
Petroleum and natural gas	235	3.7%	0.208	0.242	0.007	0.482
Utilities	438	7.0%	0.328	0.312	0.006	0.591
Communication	88	1.4%	0.328	0.322	0.004	0.571
Personal service	49	0.8%	0.296	0.324	0.001	0.599
Business services	468	7.5%	0.315	0.313	0.022	0.565
Computers	310	4.9%	0.278	0.279	0.024	0.544
Electronic equipment	418	6.7%	0.255	0.266	0.037	0.495
Measuring and control equipment	119	1.9%	0.308	0.344	0.029	0.550
Business supplies	157	2.5%	0.332	0.328	0.004	0.584
Shipping containers	29	0.5%	0.220	0.281	0.003	0.601
Transportation	221	3.5%	0.264	0.262	0.002	0.496
Wholesale	236	3.8%	0.362	0.361	0.002	0.602
Retail	483	7.7%	0.328	0.333	0.008	0.491
Restaurants, hotels, motels	142	2.3%	0.306	0.324	0.017	0.498

Banking	38	0.6%	0.239	0.246	0.000	0.505
Insurance	227	3.6%	0.270	0.283	0.009	0.551
Trading	103	1.6%	0.353	0.346	0.008	0.563
Others	170	2.8%	0.319	0.317	0.011	0.579
Total	6270	100.00%				
		Sample mean				
			0.308	0.316	0.014	0.548

Table 2 Description statistics of tax avoidance, corporate transparency

Variable	N	Mean	STD DEV	25 <sup>th</sup>	Medium	75 <sup>th</sup>
<b>Panel A: Tax avoidance / aggressiveness and opacity measures.</b>						
CETR	6,270	0.308	0.197	0.193	0.297	0.381
LCETR	6,270	0.316	0.150	0.240	0.318	0.380
PBTD	6,270	0.014	0.033	-0.001	0.007	0.020
OPACITY	6,270	0.548	0.158	0.425	0.550	0.675
EARNOPACITY	6,270	0.068	0.098	0.019	0.042	0.082
COVERAGE	6,270	-1.725	0.863	-2.398	-1.792	-1.099
TURNOVER	6,270	5.538	0.783	5.057	5.621	6.099
NEWS	6,270	-1.331	1.724	-2.485	-1.099	0.000
<b>Panel B: Other firm characteristics.</b>						
Q	6,270	2.232	1.543	1.270	1.698	2.534
ROE	6,270	0.301	0.254	0.172	0.263	0.384
LEV	6,270	0.223	0.168	0.077	0.219	0.339
NOL	6,270	0.172	0.378	0.000	0.000	0.000
CNOL	6,270	0.001	0.027	0.000	0.000	0.000
FI	6,270	0.017	0.032	0.000	0.000	0.022
PPE	6,270	0.381	0.267	0.179	0.317	0.543
INTANG	6,270	0.110	0.173	0.000	0.028	0.156
UNCON	6,270	0.001	0.004	0.000	0.000	0.000
ASSETS	6,270	7.072	1.626	5.866	6.901	8.125
MB	6,270	3.551	3.046	1.762	2.612	4.196
RISK	6,270	0.108	0.048	0.073	0.099	0.133
GROWTH	6,270	0.181	0.214	0.054	0.124	0.243
AGE	6,270	3.087	0.674	2.485	3.219	3.689
ICOPTION	6,063	0.327	0.248	0.120	0.302	0.503
IHPERCENT	5,735	0.554	0.187	0.433	0.569	0.689

Table 3 Show correlation Matrix of tax avoidance and opacity

	CETR	LCETR	PBTD	Q	OPACITY	EARNOPACITY	COVERAGE	TRUNOVER
LCETR	0.461 (0.000)							
PBTD	-0.220 (0.000)	-0.171 (0.000)						
Q	-0.122 (0.000)	-0.115 (0.000)	0.365 (0.000)					
OPACITY	0.074 (0.000)	0.134 (0.000)	-0.057 (0.000)	-0.154 (0.000)				
EARNOPACITY	-0.020 (0.122)	-0.028 (0.028)	0.106 (0.000)	0.122 (0.000)	0.271 (0.000)			
COVERAGE	0.073 (0.000)	0.115 (0.000)	-0.036 (0.005)	-0.196 (0.000)	0.723 (0.000)	0.024 (0.056)		
TRUNOVER	0.108 (0.000)	0.160 (0.000)	-0.203 (0.000)	-0.274 (0.000)	0.453 (0.000)	-0.144 (0.000)	0.263 (0.000)	
NEWS	-0.006 (0.618)	0.032 (0.012)	-0.012 (0.337)	-0.096 (0.000)	0.598 (0.000)	0.069 (0.000)	0.393 (0.000)	-0.050 (0.002)

Table 4 Show tax avoidance and firm characteristics.

	Mean		Medium		P-Value		Mean	Medium
	Low	High	Low	High	High	High		
	OPACITY	2	OPACITY	OPACITY	2	OPACITY		
CETR	0.295	0.306	0.325	0.283	0.291	0.314	0.000	0.000
LCETR	0.295	0.315	0.338	0.300	0.316	0.336	0.000	0.000
PBTD	0.016	0.013	0.013	0.008	0.007	0.006	0.002	0.000
Q	2.515	2.133	2.033	1.874	1.697	1.563	0.000	0.000
ROE	0.324	0.295	0.281	0.282	0.257	0.248	0.000	0.000
LEV	0.220	0.228	0.222	0.212	0.225	0.217	0.651	0.510
NOL	0.196	0.173	0.146	0.000	0.000	0.000	0.000	0.000
CNOL	0.001	0.002	0.001	0.000	0.000	0.000	0.672	0.918
FI	0.023	0.016	0.012	0.000	0.000	0.000	0.000	0.000
PPE	0.388	0.382	0.374	0.311	0.319	0.322	0.091	0.603
INTANG	0.104	0.117	0.110	0.021	0.036	0.028	0.213	0.175
UNCON	0.001	0.001	0.001	0.000	0.000	0.000	0.386	0.424
ASSETS	7.850	7.012	6.313	7.782	6.886	6.185	0.000	0.000
MB	4.224	3.480	2.915	3.086	2.635	2.196	0.000	0.000
RISK	0.112	0.109	0.104	0.104	0.099	0.095	0.000	0.000
GROWTH	0.201	0.192	0.148	0.142	0.129	0.105	0.000	0.000
AGE	3.156	3.048	3.054	3.296	3.1178	3.219	0.000	0.000
ICOPTION	0.403	0.329	0.240	0.397	0.301	0.210	0.000	0.000

IHPERCENT	0.605	0.565	0.491	0.620	0.581	0.501	0.000	0.000
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Table 5 Show tax avoidance and corporate opacity

Firm-year level analysis of tax avoidance and corporate. The regression model is: TaxAgg = $\beta_0 + \beta_2 \text{OPACITY} + \beta_2 \text{ROE}_{12} + \beta_2 \text{LEV}_{13} + \beta_4 \text{NOL} + \beta_3 \text{CNOL}_{13} + \beta_6 \text{FI} + \beta_2 \text{PPE}_{13} + \beta \text{INTANG} + \beta \text{UNCON} + \beta_{10} \text{ASSETS}_{11-1} + \beta_{11} \text{MB}_{11-1} + \beta_{12} \text{AGE}_{12} + \beta_{13} \text{IHPERCENT}_{11-1} + \beta_{13} \text{ICOPTION}_{11-1} + \text{Year Dummies} + \text{Industry Dummies} + x_{12}$											
Panel A: TaxAgg-1.CETR. See the Appendix for variable measurement. T- values are corrected for series correlation and heteroskedasticity.											
	<b>Model 1</b>			<b>Model 2</b>			<b>Model 3</b>				
	Coeff		T-Stat		Coeff		T-Stat		Coeff		T-Stat
$\beta_0$ (INTERCEPT)	0.631	***	12.14		0.643	***	11.57		0.605	***	11.75
$\beta_1$ (OPACITY)	-0.059	***	-2.82		-0.060	***	-2.65		-0.045	***	-2.11
$\beta_2$ (ROE)	0.148	***	7.35		0.146	***	7.01		0.154	***	7.54
$\beta_3$ (LEV)	0.041		1.62		0.040		1.52		0.037		1.44
$\beta_4$ (NOL)	0.029	***	3.27		0.030	***	3.33		0.025	***	2.77
$\beta_5$ (CNOL)	0.044		0.39		0.023		0.20		0.042		0.35
$\beta_6$ (FI)	0.278	***	2.89		0.250	***	2.53		0.255	***	2.59
$\beta_7$ (PPE)	0.089	***	5.00		0.086	***	4.58		2.590	***	5.17
$\beta_8$ (INTANG)	-0.082	***	-3.87		-0.083	***	-3.71		-0.085	***	-3.92
$\beta_9$ (UNCON)	0.318		0.41		-0.103		-0.12		0.407		0.53
$\beta_{10}$ (ASSETS)	-0.003		-0.89		-0.002		-0.77		-0.003		-0.85
$\beta_{11}$ (MB)	-0.004	***	-2.54		-0.004	***	-2.58		-0.004	***	-2.92
$\beta_{12}$ (AGE)	-0.012	***	-2.00		-0.016	***	-2.58		-0.010		-1.60
$\beta_{13}$ (IHPERCEN)					0.012		0.63				
$\beta_{14}$ (ICOPTION)									0.055	***	4.48
Industry dummies	Yes				Yes				Yes		
Year dummies	Yes				Yes				Yes		
N	6,270				5,735				6,063		
Adjusted R <sup>2</sup> %	9.03				9.29				9.68		

Firm-year level analysis of tax avoidance and corporate. The regression model is:  

$$\text{TaxAgg} = \beta_0 + \beta_2 \text{OPACITY} + \beta_2 \text{ROE}_{12} + \beta_2 \text{LEV}_{13} + \beta_4 \text{NOL} + \beta_3 \text{CNOL}_{13} + \beta_6 \text{FI} + \beta_2 \text{PPE}_{13} + \beta \text{INTANG} + \beta \text{UNCON} + \beta_{10} \text{ASSETS}_{11-1} + \beta_{11} \text{MB}_{11-1} + \beta_{12} \text{AGE}_{12} + \beta_{13} \text{IHPERCENT}_{11-1} + \beta_{13} \text{ICOPTION}_{11-1} + \text{Year Dummies} + \text{Industry Dummies} + x_{12}$$

Panel B: TaxAgg -1-LECTR. See the Appendix for valuable measurement. T- values are corrected for series correlation and heteroskedasticity.

	Model 4			Model 5			Model 6				
	Coeff		T-Stat		Coeff		T-Stat		Coeff		T-Stat
$\beta_0$ (INTERCEPT)	0.787	***	18.89		0.799	***	18.71		0.761	***	18.76
$\beta_1$ (OPACITY)	-0.115	***	-6.00		-0.118	***	-5.80		-0.099	***	-5.15
$\beta_2$ (ROE)	0.012		0.91		0.000		0.03		0.018		1.134
$\beta_3$ (LEV)	0.031		1.34		0.032		1.33		0.027		1.12
$\beta_4$ (NOL)	0.031	***	3.68		0.036	***	4.32		0.028	***	3.26
$\beta_5$ (CNOL)	0.001		0.01		0.007		0.07		0.022		0.20
$\beta_6$ (FI)	0.177	**	2.16		0.158	*	1.87		0.151	*	1.84
$\beta_7$ (PPE)	0.093	***	5.87		0.087	***	5.28		0.095	***	6.04
$\beta_8$ (INTANG)	-0.041	**	-1.98		-0.033		-1.49		-0.043	**	-2.09
$\beta_9$ (UNCON)	0.733		1.08		0.616		0.85		0.777		1.17
$\beta_{10}$ (ASSETS)	-0.006	*	-1.91		-0.006	**	-1.49		-0.005	*	-1.82
$\beta_{11}$ (MB)	0.002	*	1.90		0.003	**	2.23		0.002		1.38
$\beta_{12}$ (AGE)	-0.017	***	-2.96		-0.019	***	-3.30		-0.013	**	-2.33
$\beta_{13}$ (IHPERCEN)					0.010		0.63				
$\beta_{14}$ (ICOPTION)									0.045	***	4.48
Industry dummies	Yes				Yes				Yes		
Year dummies	Yes				Yes				Yes		
N	6,270				5,735				6,063		
Adjusted R <sup>2</sup> %	11.67				12.82				12.16		

Firm-year level analysis of tax avoidance and corporate. The regression model is:  

$$\text{TaxAgg} = \beta_0 + \beta_2 \text{OPACITY} + \beta_2 \text{ROE}_{12} + \beta_2 \text{LEV}_{13} + \beta_4 \text{NOL} + \beta_3 \text{CNOL}_{13} + \beta_6 \text{FI} + \beta_2 \text{PPE}_{13} + \beta \text{INTANG} + \beta \text{UNCON} + \beta_{10} \text{ASSETS}_{11-1} + \beta_{11} \text{MB}_{11-1} + \beta_{12} \text{AGE}_{12} + \beta_{13} \text{IHPERCENT}_{11-1} + \beta_{13} \text{ICOPTION}_{11-1} + \text{Year Dummies} + \text{Industry Dummies} + x_{12}$$

Panel C: TaxAgg-1.PBTD. See the Appendix for variable measurement. T- values are corrected for series correlation and heteroskedasticity.

	Model 7			Model 8			Model 9				
	Coeff		T-Stat		Coeff		T-Stat		Coeff		T-Stat
$\beta_0$ (INTERCEPT)	0.039	***	5.57		0.044	***	5.65		0.034	***	4.97
$\beta_1$ (OPACITY)	-0.013	***	-3.29		-0.016	***	-3.88		-0.011	***	-2.88
$\beta_2$ (ROE)	0.011	**	2.28		0.011	**	2.09		0.010	**	2.16
$\beta_3$ (LEV)	-0.015	***	-3.72		-0.014	***	-3.26		-0.015	***	-3.57



$\beta_4$ (NOL)	0.001		0.70		0.001		0.76		0.001		0.32
$\beta_5$ (CNOL)	-0.002		-0.07		-0.001		-0.03		-0.004		-0.11
$\beta_6$ (FI)	0.113	***	4.34		0.117	***	4.40		0.105	***	4.03
$\beta_7$ (PPE)	-0.004		-1.19		-0.004		-1.12		-0.002		-0.77
$\beta_8$ (INTANG)	-0.026	***	-7.34		-0.027	***	-7.32		-0.025	***	-7.01
$\beta_9$ (UNCON)	0.141		1.09		0.171		1.17		0.142		1.08
$\beta_{10}$ (ASSETS)	-0.003	***	-5.41		-0.003	***	-5.46		-0.003	***	-4.96
$\beta_{11}$ (MB)	0.001	***	2.64		0.001	**	2.29		0.001	***	2.66
$\beta_{12}$ (AGE)	0.000		-0.32		0.000		0.02		0.000		0.03
$\beta_{13}$ (IHPERCEN)					-0.006		-1.59				
$\beta_{14}$ (ICOPTION)									0.006	**	2.53
Industry dummies	Yes				Yes				Yes		
Year dummies	Yes				Yes				Yes		
N	6,270				5,735				6,063		
Adjusted R <sup>2</sup> %	19.47				19.76				19.28		

Table 6 Show tax avoidance, corporate opacity and firm value.

<p>Firm-year level analysis of tax avoidance and corporate. The regression model is:  <math>Q = \beta_0 + \beta_2 \text{OPACITY} + \beta_2 \text{ROE}_{12} + \beta_2 \text{LEV}_{13} + \beta_4 \text{NOL} + \beta_3 \text{CNOL}_{13} + \beta_6 \text{FI} + \beta_2 \text{PPE}_{13} + \beta \text{INTANG} + \beta \text{UNCON} + \beta_{10} \text{ASSETS}_{11-1} + \beta_{11} \text{MB}_{11-1} + \beta_{12} \text{AGE}_{12} + \beta_{13} \text{IHPERCEN}_{11-1} + \beta_{13} \text{ICOPTION}_{11-1} + \text{Year Dummies} + \text{Industry Dummies} + x_{12}</math></p>											
<p>Panel A: TaxAgg-Tax aggressiveness indicator, coded as one for firm in the bottom CETR tercile, zero otherwise, See the Appendix for variable measurement. T- values are corrected for series correlation and heteroskedasticity.</p>											
	<b>Model 1</b>			<b>Model 2</b>			<b>Model 3</b>				
	Coeff		T-Stat		Coeff		T-Stat		Coeff		T-Stat
$\beta_0$ (INTERCEPT)	4.908	***	8.83		5.637	***	9.65		4.781	***	7.98
$\beta_1$ (TaxAgg)	0.767	***	4.43		0.775	***	4.44		0.742	***	4.21
$\beta_2$ (OPACITY)	-0.793	***	-4.05		-1.147	***	-5.56		-0.640	***	-3.34
$\beta_3$ (TaxAgg*OPACITY)	-0.978	***	-3.38		-0.960	**	-3.27		-0.962	***	-3.22
$\beta_4$ (ASSETS)	-0.086	***	-2.80		-0.099	***	-3.00		-0.101	***	-3.17
$\beta_5$ (RISK)	-3.766	***	-4.12		-4.617	***	-4.74		-4.280	***	-4.49
$\beta_6$ (GROWTH)	0.644	***	3.93		0.636	***	3.61		0.617	***	3.64
$\beta_7$ (LEV)	-2.088	***	-5.99		-1.956	***	-5.32		-2.091	***	-5.79
$\beta_8$ (ROE)	1.153	***	7.55		1.133	***	7.11		1.204	***	7.52
$\beta_9$ (NOL)	-0.020		-0.28		-0.024		-0.32		-0.035		-0.49
$\beta_{10}$ (CNOL)	0.864		0.93		1.015		1.07		1.056		1.09
$\beta_{11}$ (FI)	7.593	***	6.42		7.919	***	6.63		7.481	***	6.16
$\beta_{12}$ (PPE)	0.214		1.51		0.204		1.38		0.232		1.60
$\beta_{13}$ (INTANG)	-0.507	***	-3.46		-0.526	***	-3.34		-0.537	***	-3.62
$\beta_{14}$ (UNCON)	-1.207		-0.19		4.662		0.65		2.744		0.42
$\beta_{15}$ (AGE)	-0.253	***	-4.46		-0.253	***	-4.29		-0.234	***	-4.03
$\beta_{16}$ (IHPERCEN)					-0.809	***	-5.42				

$\beta_{17}$ (ICOPTION)								0.550	***	4.85
Industry dummies	Yes			Yes				Yes		
Year dummies	Yes			Yes				Yes		
N	6,270			5,735				6,063		
Adjusted R <sup>2</sup> %	40.35			40.75				41.2		

Firm-year level analysis of tax avoidance and corporate. The regression model is:  
 $Q = \beta_0 + \beta_2 \text{OPACITY} + \beta_2 \text{ROE}_{12} + \beta_2 \text{LEV}_{13} + \beta_4 \text{NOL} + \beta_3 \text{CNOL}_{13} + \beta_6 \text{FI} + \beta_2 \text{PPE}_{13} + \beta \text{INTANG} + \beta \text{UNCON} + \beta_{10} \text{ASSETS}_{11-1} + \beta_{11} \text{MB}_{11-1} + \beta_{12} \text{AGE}_{12} + \beta_{13} \text{IHPERCENT}_{11-1} + \beta_{13} \text{ICOPTION}_{11-1} + \text{Year Dummies} + \text{Industry Dummies} + x_{12}$

Panel B: TaxAgg-Tax aggressiveness indicator , coded as one for firm in the bottom LCETR tercile , zero otherwise ,  
 See the Appendix for variable measurement. T- values are corrected for series correlation and heteroskedasticity.

	Model 4			Model 5			Model 6				
	Coeff		T-Stat		Coeff		T-Stat		Coeff		T-Stat
$\beta_0$ (INTERCEPT)	4.910	***	8.27		5.656	***	9.35		4.804	***	7.94
$\beta_1$ (TaxAgg)	0.673	***	3.44		0.694	***	3.42		0.650	***	3.25
$\beta_2$ (OPACITY)	-0.832	***	-4.26		-1.183	***	-3.80		-0.676	***	-3.54
$\beta_3$ (TaxAgg*OPACITY)	-0.832	***	-2.49		-0.845	***	-2.43		-0.844	***	-2.44
$\beta_4$ (ASSETS)	-0.088	***	-2.84		-0.100	***	-3.03		-0.103	***	-3.21
$\beta_5$ (RISK)	-3.727	***	-4.09		-4.560	***	-4.69		-4.223	***	-4.44
$\beta_6$ (GROWTH)	0.615	***	3.75		0.594	***	3.37		0.590	***	3.49
$\beta_7$ (LEV)	-2.042	***	-5.89		-1.909	***	-5.22		-2.042	***	-5.63
$\beta_8$ (ROE)	1.120	***	7.61		1.096	***	7.16		1.167	***	7.56
$\beta_9$ (NOL)	-0.023		-0.31		-0.026		-0.35		-0.037		-0.51
$\beta_{10}$ (CNOL)	0.808		0.86		0.960		1.00		0.991		1.01
$\beta_{11}$ (FI)	7.617	***	6.51		7.942	***	6.71		7.536	***	6.27
$\beta_{12}$ (PPE)	0.198		1.41		0.198		1.35		0.220		1.53
$\beta_{13}$ (INTANG)	-0.502	***	-3.41		-0.517	***	-3.27		-0.535	***	-3.58
$\beta_{14}$ (UNCON)	1.792		0.27		4.856		0.68		2.882		0.44
$\beta_{15}$ (AGE)	-0.254	***	-4.42		-0.256	***	-4.30		-0.235	***	-4.02
$\beta_{16}$ (IHPERCEN)					-0.817	***	-5.44				
$\beta_{17}$ (ICOPTION)									0.548	***	4.82
Industry dummies	Yes				Yes				Yes		
Year dummies	Yes				Yes				Yes		
N	6,270				5,735				6,063		
Adjusted R <sup>2</sup> %	40.22				40.62				41.05		

Firm-year level analysis of tax avoidance and corporate. The regression model is: $Q = \beta_0 + \beta_1 \text{OPACITY} + \beta_2 \text{ROE}_{12} + \beta_3 \text{LEV}_{13} + \beta_4 \text{NOL} + \beta_5 \text{CNOL}_{13} + \beta_6 \text{FI} + \beta_7 \text{PPE}_{13} + \beta_8 \text{INTANG} + \beta_9 \text{UNCON} + \beta_{10} \text{ASSETS}_{11-1} + \beta_{11} \text{MB}_{11-1} + \beta_{12} \text{AGE}_{12} + \beta_{13} \text{IHPERCENT}_{11-1} + \beta_{14} \text{ICOPTION}_{11-1} + \text{Year Dummies} + \text{Industry Dummies} + x_{12}$											
Panel C: TaxAgg-Tax aggressiveness indicator , coded as one for firm in the bottom PBTD tercile , zero otherwise , See the Appendix for variable measurement. T- values are corrected for series correlation and heteroskedasticity.											
	<b>Model 7</b>			<b>Model 8</b>			<b>Model 9</b>				
	Coeff		T-Stat		Coeff		T-Stat		Coeff		T-Stat
$\beta_0$ (INTERCEPT)	4.454	***	7.63		5.165	***	8.90		4.358	***	7.29
$\beta_1$ (TaxAgg)	1.112	***	5.73		1.155	***	5.77		1.057	***	5.41
$\beta_2$ (OPACITY)	-0.688	***	-4.02		-0.994	***	-5.33		-0.561	***	-3.23
$\beta_3$ (TaxAgg*OPACITY)	-1.010	***	-3.09		-1.076	***	-3.21		-0.937	***	-2.81
$\beta_4$ (ASSETS)	-0.064	***	-2.14		-0.073	**	-2.27		-0.078	**	-2.50
$\beta_5$ (RISK)	-3.320	***	-3.73		-4.069	***	-4.32		-3.758	***	-4.07
$\beta_6$ (GROWTH)	0.618	***	3.86		0.605	***	3.52		0.595	***	3.59
$\beta_7$ (LEV)	-1.789	***	-5.34		-1.677	***	-4.77		-1.811	***	-5.22
$\beta_8$ (ROE)	1.041	***	7.40		1.014	***	6.95		1.096	***	7.44
$\beta_9$ (NOL)	0.003		0.05		0.004		0.06		-0.011		-0.16
$\beta_{10}$ (CNOL)	0.999		1.11		1.137		1.24		1.198		1.28
$\beta_{11}$ (FI)	6.454	***	5.39		6.783	***	5.59		6.397	***	5.21
$\beta_{12}$ (PPE)	0.227	*	1.64		0.226		1.55		0.240	*	1.68
$\beta_{13}$ (INTANG)	-0.364	***	-2.56		-0.372	***	-2.43		-0.396	***	-2.75
$\beta_{14}$ (UNCON)	-0.493		-0.07		1.842		0.25		0.561		0.08
$\beta_{15}$ (AGE)	-0.241	***	-4.27		-0.249	***	-4.24		-0.223	***	-3.86
$\beta_{16}$ (IHPERCEN)					-0.808	***	-5.41				
$\beta_{17}$ (ICOPTION)									0.504	***	4.46
Industry dummies	Yes				Yes				Yes		
Year dummies	Yes				Yes				Yes		
N	6,270				5,735				6,063		
Adjusted R <sup>2</sup> %	42.17				42.57				42.93		

Table 7 Show tax avoidance and corporate opacity

Panel A: TaxAgg-1-CETR											
	Model 1			Model 2			Model 3			Model 4	
	Coeff		T-Stat	Coeff		T-Stat	Coeff		T-Stat	Coeff	T-Stat
$\beta_0$ (INTERCEPT)	0.597	***	12.41	0.606	***	11.76	0.628	***	12.05	0.605	10.88
$\beta_1$ (INTEROPACITY)	-0.026		-2.59				-0.027		-2.66	-0.036	-3.41
$\beta_2$ (EXTEROPACITY)				-0.030	***	-1.63	-0.032	***	-1.72	-0.007	-0.33
$\beta_3$ (ROE)	0.147	**	7.29	0.146	**	7.34	0.148	**	7.34	0.153	7.16
$\beta_4$ (LEV)	0.033	***	1.32	0.039	***	1.54	0.039	***	1.53	0.028	1.05
$\beta_5$ (NOL)	0.030		3.38	0.029		3.30	0.029		3.29	0.025	2.73
$\beta_6$ (CNOL)	0.045		0.39	0.044		0.39	0.044		0.39	0.036	0.29
$\beta_7$ (FI)	0.290	***	3.00	0.279	***	2.89	0.283	***	2.94	0.235	2.33
$\beta_8$ (PPE)	0.092		5.13	0.088		4.93	0.090		5.07	0.095	5.00
$\beta_9$ (INTANG)	-0.083	***	-3.91	0.080	***	-3.79	-0.084	***	-3.92	-0.089	-3.91
$\beta_{10}$ (UNCON)	0.254		0.33	0.306		0.39	0.296		0.38	-0.096	-0.12
$\beta_{11}$ (ASSETS)	0.000	***	0.18	-0.001	***	-0.43	-0.002	***	-0.62	-0.001	-0.25
$\beta_{12}$ (MB)	-0.003	***	-2.14	-0.003	**	-2.40	-0.003	**	-2.42	-0.004	-2.64
$\beta_{13}$ (AGE)	-0.015		-2.47	-0.013		-2.06	-0.013		-2.14	-0.016	-2.45
$\beta_{14}$ (IHPERCENT)								**		0.059	4.54
$\beta_{15}$ (ICOPTION)								*		0.016	0.83
Industry dummies	Yes			Yes			Yes			Yes	
Year dummies	Yes			Yes			Yes			Yes	
N	6,270			6,270			6,270			5,554	
Adjusted R <sup>2</sup> %	9.10%			9.03%			9.16%			9.99%	

Panel B: TaxAgg-1-LCETR												
	Model 1			Model 2			Model 3			Model 4		
	Coeff		T-Stat	Coeff		T-Stat	Coeff		T-Stat	Coeff	T-Stat	
$\beta_0$ (INTERCEPT)	0.693	**	18.3	0.774	**	18.3	0.790	***	18.7	0.790	**	18.73
		*	7		*	7			3		*	
$\beta_1$ (INTEROPACITY)	-0.017	**	-2.16		**		-0.018	***	-2.44	-0.018	**	-2.44
		*			*						*	
$\beta_2$ (EXTEROPACITY)		**		-0.096	**	-5.53	-0.097	***	-5.60	-0.097	**	-5.60
		*			*						*	
$\beta_3$ (ROE)	0.009	**	0.70	0.011	**	0.80	0.012	***	0.89	0.012	**	0.89
		*			*						*	
$\beta_4$ (LEV)	0.016	**	0.71	0.033	**	1.43	0.033	**	1.42	0.033	**	1.42
		*			*						*	
$\beta_5$ (NOL)	0.033	**	3.88	0.031	**	3.67	0.031	***	3.66	0.031	**	3.66

		*			*						*	
$\beta_6$ (CNOL)	0.003	** *	0.03	0.001	** *	0.01	0.001	***	0.01	0.001	** *	0.01
$\beta_7$ (FI)	0.193	** *	2.32	0.170	** *	2.07	0.173	***	2.11	0.173	** *	2.11
$\beta_8$ (PPE)	0.095	** *	5.95	0.089	** *	5.65	0.091	***	5.76	0.091	** *	5.76
$\beta_9$ (INTANG)	-0.039		-1.87	-0.038		-1.82	-0.040		-1.93	-0.040		-1.93
$\beta_{10}$ (UNCON)	0.624		0.93	0.759		1.12	0.752		1.11	0.752		1.11
$\beta_{11}$ (ASSETS)	0.001	** *	0.49	-0.006	** *	-1.91	-0.006	***	-2.05	-0.006	** *	-2.05
$\beta_{12}$ (MB)	0.003	*	2.75	0.002		1.77	0.002	*	1.77	0.002	*	1.77
$\beta_{13}$ (AGE)	-0.021	** *	-3.82	-0.015	** *	-2.73	-0.016	***	-2.78	-0.016	** *	-2.78
$\beta_{14}$ (IHPERCENT)										0.047		4.57
$\beta_{15}$ (ICOPTION)										0.008		0.46
Industry dummies	Yes			Yes			Yes			Yes		
Year dummies	Yes			Yes			Yes			Yes		
N	6,270			6,270			6,270			5,554		
Adjusted R <sup>2</sup> %	10.80 %			11.71 %			11.71 %			13.29 %		

Panel C:TaxAgg-PBTD												
	Model 1			Model 2			Model 3			Model 4		
	Coeff		T-Stat	Coeff		T-Stat	Coeff		T-Stat	Coeff		T-Stat
$\beta_0$ (INTERCEPT)	0.027	** *	4.6 0	0.041	** *	5.6 7	0.040	** *	5.5 2	0.041	** *	5.18
$\beta_1$ (INTEROPACITY)	0.001		0.4 6				0.001		0.3 0	0.000		-0.19
$\beta_2$ (EXTEROPACITY)				-0.013	** *	- 4.0 2	-0.013	** *	- 4.0 0	-0.015	** *	-4.07
$\beta_3$ (ROE)	0.011	**	2.1 9	0.011	**	2.2 7	0.011	**	2.2 7	0.010	**	1.96
$\beta_4$ (LEV)	-0.017	** *	- 4.1 0	-0.014	** *	- 3.5 5	-0.014	** *	- 3.5 5	-0.013	** *	-3.00
$\beta_5$ (NOL)	0.001		0.8 2	0.001		0.6 6	0.001		0.6 6	0.001		0.34
$\beta_6$ (CNOL)	-0.002		- 0.0 7	-0.002		- 0.0 7	-0.002		- 0.0 7	-0.002		-0.05
$\beta_7$ (FI)	0.114	** *	4.3 6	0.112	** *	4.2 8	0.111	** *	4.2 7	0.107	** *	4.04
$\beta_8$ (PPE)	-0.004		-	-0.004		-	-0.004		-	-0.003		-0.92

			1.2 0			1.3 3			1.3 5			
$\beta_9$ (INTANG)	-0.026	** *	- 7.1 9	-0.026	** *	- 7.2 9	-0.026	** *	- 7.2 6	-0.026	** *	-6.95
$\beta_{10}$ (UNCON)	0.131		1.0 1	0.148		1.1 3	0.148		1.1 3	0.182		1.21
$\beta_{11}$ (ASSETS)	-0.002	** *	- 4.5 6	-0.003	** *	- 5.7 1	-0.003	** *	- 5.6 7	-0.003	** *	-5.19
$\beta_{12}$ (MB)	0.001	** *	2.9 7	0.001	**	2.4 9	0.001	**	2.4 9	0.001	**	2.21
$\beta_{13}$ (AGE)	-0.001		- 0.7 5	0.000		- 0.0 6	0.000		- 0.0 5	0.001		0.55 6
$\beta_{14}$ (IHPERCENT)								**		0.005	**	2.13
$\beta_{15}$ (ICOPTION)								*		-0.007	*	-1.90
Industry dummies	Yes			Yes			Yes			Yes		
Year dummies	Yes			Yes			Yes			Yes		
N	6,270			6,270			6,270			5,554		
Adjusted R <sup>2</sup> %	19.23 %			19.59 %			19.59 %			19.64 %		

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