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# Impact of Disputed Tax Litigation Risk on Firm Performance: Evidence from India

## Structured Abstract

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**Purpose:** The study investigates the impact of disputed tax litigation risk on firm performance and stock return behaviour using a sample of Indian listed firms.

**Design/Methodology/Approach:** We use disputed tax liability, reported as a contingent liability by the listed firms, as a proxy for the disputed tax litigation risk. To examine the impact of disputed tax litigation risk on firm performance (measured by accounting and market-based measures), our empirical approach focusses on the panel estimation technique. A portfolio-based approach using alternative asset pricing models examines the cross-sectional return variation due to the influence of disputed tax litigation risk.

**Findings:** The results show a negative relationship between firm performance measures and disputed tax litigation risk. Cross-sectional test results reveal that higher disputed tax litigation risk is associated with higher expected returns.

**Research limitations/Implications:** This study focusses on disputed tax reported under the heading of contingent liability as a proxy for litigation risk. The study will help investors and portfolio managers to consider disputed tax litigation risk as an important parameter in the evaluation of firm performance. The study will also help regulators to get feedback on tax related policies and improve the dispute resolution process.

**Originality/Value:** The study adds to the existing literature on the relationship between litigation risk and firm performance. In the context of emerging market, this paper is the first-of-its-kind study, which focusses on disputed tax as a litigation risk proxy and examines its possible impact on firm performance and stock return behaviour.

**Keywords:** Litigation risk, disputed tax, firm performance, contingent liabilities, stock returns

Article Classification: Research Paper

## **Impact of Disputed Tax Litigation Risk on Firm Performance: Evidence from India**

### **1. Introduction**

This paper examines the impact of disputed tax litigation risk (DTLR hereafter) on the firm performance and stock return behaviour. Over the years, a growing body of research in accounting and finance literature identified the potentially plausible risk parameters that influence firm performance. Amid the growth of related strands of literature, research in accounting and finance has given significant focus on the impact of litigation risk on corporate decisions. Previous studies have investigated the impact of litigation risk on various corporate decisions such as managers' financial reporting and disclosure decisions (Skinner, 1994, 1997; Johnson et al., 2000, 2001; Lennox and Park, 2006), cash holdings, and investment decisions (Foley et al. 2007; Arena and

Julio, 2011,2015; Malm, 2014; Malm and Kanuri, 2016), firm credit ratings (Xie, 2015), equity-based compensation (Dai et al., 2008; Jayaraman and Milbourn, 2009), conservatism in debt contracting (Beatty et al., 2008), firms disclosure behavior (Skinner, 1994), underpricing of initial public offering (Lowry and Shu, 2002) and shareholder wealth implication due to cross-sectional variation in stock return (Bizjak, 1995; Bhagat et al., 1994, 1998). The available literature argues that litigation risk influences managers' incentives for safeguarding shareholder interest, firm's future growth potential, and influences corporate financial policy (Arena and Julio, 2011, 2015; Skinner, 1994). Moreover, litigation risk exerts a disciplinary influence on corporate practices relating to executive compensation, executive and board turnover, corporate investment, and voluntary disclosure (Field et al., 2005; Ferris et al., 2007; Kim and Skinner, 2012; Lowry, 2009; McTier and Wald, 2011; Rogers and Van Buskirk, 2009; Rogers et al., 2011; Qing, 2011). In essence, there is little doubt that litigation is an important part of the corporate environment (Bizjak, 1995).

However, understanding the impact of litigation risk on firm performance and stock return behaviour is limited due to insufficient research findings in the context of emerging markets and identification of adequate measures for the litigation risk. In this regard, we observe two important issues. First, the existing empirical evidence on litigation risk and corporate decision-making primarily focusses on the developed markets, and the implication of the litigation risk in the context of emerging markets<sup>1</sup> has been non-existent.<sup>2</sup> Emerging markets differ from their developed counterparts due to a host of institutional variables, including differences in business or tax regulations, protection of minority investors, differences in accounting and financial disclosure systems. For instance, emerging markets with smaller or narrower capital markets are

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<sup>1</sup> Our definition of emerging market (which also includes Indian stock market) is consistent with the countries that are commonly identified as emerging economy by International Monetary Fund (IMF), Morgan Stanley Capital International (MSCI), Standard and Poor's (S&P).

<sup>22</sup> In order to gather insights about the existing litigation risk literature in the context of emerging market, we use several academic search engine sources to search related key words from existing litigation risk literature. For our online search, we use Google scholar, Web of Science maintained by Thomson Reuters, EBSCO Information Services, EconBiz, ScienceDirect and the Social Science Research Network (SSRN). Our search results however, do not reveal any existing literature in the context of emerging market that provides persuasive empirical evidence on litigation risk (or disputed tax litigation risk) and firm performance.

characterised by lower quality of legal rules and law enforcement and therefore, expected to have a low quality of legal protection for minority shareholders (La Porta et al., 1998, 2000). Hence, in the context of emerging markets where the legal system cannot be equally benchmarked with the developed economies, a deeper understanding of litigation risk implication for corporate decision and firm performance warrants attention. Second, the litigation risk proxy is inherently unobservable and difficult to measure (Arena and Julio, 2011, 2015) and thus creates a key challenge for universal validation of litigation risk implications on firm performance and corporate decisions. Existing literature in the context of developed US stock market, commonly uses securities class-action lawsuits filed against the companies (see for e.g., Arena and Julio, 2011,2015; Qing, 2011) or industry affiliation (Kim and Skinner, 2012; Jayaraman and Milbourn, 2009) as a proxy for the litigation risk. The securities class-action lawsuit process may not be directly applicable to market regulations in other countries (mostly emerging economies) because each country has a different regulatory mechanism and is at a different stage of economic and institutional development. The industry proxy for litigation risk is only a partial measure of the litigation risk and also subject to criticism (Kim and Skinner, 2012; Xie, 2015). Given the paucity of research in the context of emerging markets and inherent limitation of the existing litigation risk proxy, the present paper attempts to revisit the litigation risk and firm performance argument using a new measure (i.e., DTLR) with a special focus on the emerging Indian stock market.

We attempt to contribute to this growing body of literature by investigating the impact of DTLR on firm performance in the context of the emerging Indian stock market. The total disputed tax liability considered in this paper includes all the continuing tax disputes between a company and government authorities reported under contingent liability. Using total disputed tax reported under the heading of contingent liability as a proxy for the DTLR, the present paper explores two important research questions. First, how does DTLR affect firm performance? Second, does DTLR influence a cross-section of stock return behaviour? Our study contributes to the growing body of litigation risk literature primarily in two ways. Existing literature has focussed on litigation risk

from the securities market lawsuit perspective and used industry risk measures. We attempt to employ an additional measure of litigation risk (i.e., DTLR) by drawing our focus on disputed tax litigation risk, and examine its impact on firm performance. This newly introduced proxy can help to bring more insight on the litigation risk issue. Our paper also contributes to the emerging market literature by providing the first-ever evidence of DTLR on firm performance. Related literature has mostly focussed on developed markets with developed legal and institutional structure. Particularly, there is no evidence on litigation risk arising due to tax disputes. Our approach with an emerging market focus attempts to provide out of sample evidence on the litigation risk and firm performance argument. With special reference to the Indian stock market, our paper also provides the first-ever empirical evidence on tax litigation risk. Our findings corroborate the increasing importance of litigation disclosure from policy perspective and practitioners concern for an investment decision.

Our results reveal that firms with lower DTLR show better performance. The cross-sectional test results reveal that DTLR influences expected return variation across test asset portfolios. Large-size-low-DTLR portfolios outperform large-size-high-DTLR portfolios. Small-size-high-DTLR portfolios outperform large-size-high-DTLR portfolios. High-BM-high-DTLR outperforms low-BM-low-DTLR portfolios. Considering both the firm-specific performance analysis and expected stock return analysis, our results suggest that DTLR matters for firm performance and can alter the investment decision if misjudged as an irrelevant information.

The rest of the paper is organised as follows. Section 2 provides a brief overview of the accounting for disputed tax contingent liabilities in India. Section 3 discusses motivation and hypothesis development. Section 4 elaborates empirical approach. Section 5 explains data and variable. Section 6 presents empirical results. Section 7 concludes the paper.

## 2. Accounting for Disputed Tax Contingent Liability: Indian Regulatory Environment

Indian listed companies are required to disclose the disputed tax liability as a contingent liability in their annual reports according to Schedule VI of the Companies Act, 1956<sup>3</sup>. In this regard, Accounting Standard 29 (AS 29)<sup>4</sup> issued by ICAI deals with Provisions, Contingent Liabilities. As per AS 29, “a contingent liability is a possible obligation that arises from past events and; the existence of which will be confirmed by the occurrence or non-occurrence of future events not wholly within the control of the enterprise”. This standard provides for appropriate recognition, measurement, and disclosure of contingent liabilities and provisions in the notes to financial statement. The reporting of disputed tax under the heading of contingent liability also draws significant prominence for the stock market regulating authorities in India. Securities and Exchange Board of India (SEBI), the apex capital market regulatory authority, under Listing Obligations and Disclosure Requirements Regulation, 2015, seeks disclosure of ongoing litigation and regulatory action against companies and its promoters. To tighten disclosure rules and to avoid misrepresentation of facts, it has been made mandatory to reveal details of probes against companies by all regulators and investigative agencies while filing documents for public offerings.

The tightening of laws governing disputed tax reporting is not surprising given the huge surge in disputed taxes. Over the sample period, we observed a constant increase in average disputed tax liability from INR 529.73 million in the year 2000 to INR 4259.266 million in the year 2015. The results of the univariate test (detailed discussion presented in Section 5.2) also reveals a significant difference in accounting performance between the firms that report disputed tax more than the industry average and those that report less than the industry average. This upward trend of reported disputed tax liability and our univariate test results give a first-hand impression that disputed tax liability is an important factor among the contingent liability reported by the Indian listed firms.

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<sup>3</sup> It has been revised in 2013, 2015, and 2016.

<sup>4</sup> The revised standard is named as Indian Accounting Standard (Ind AS) 37. However, this is applicable from financial year 2015-16 and not for the selected sample with historical data.

### **3. Motivation and Hypothesis**

#### **3.1 Motivation for the study**

Existing literature argues that litigation risk influences managers' incentives for safeguarding the shareholder interest, firm's future growth potential, and influences corporate financial policy (Arena and Julio, 2011,2015; Field et al., 2005; Ferris et al., 2007; McTier and Wald, 2011; Rogers and Van Buskirk, 2009; Rogers et al., 2011; Qing, 2011; Skinner, 1994). However, empirical evidence on the implication of tax disputes as a proxy of litigation risk on firm performance has been scant. To avoid the litigation proxy data availability constraint in the context of emerging markets and inherent limitation of industry proxy approach, we propose another measure of litigation risk in terms of the disputed tax reported by companies as a contingent liability in their annual report. A contingent liability is not directly reported in the balance sheet because it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation, or a reliable estimate of the amount of the obligation cannot be made. However, if it materialises it will result in the outflow of economic resources and hence may affect the performance of the firm.

Our focus on the disputed tax liability as a proxy for litigation risk (i.e., DTLR) derives its motivation primarily from two sources. First, the implication of a disputed tax contingent liability, as a source of imperative information channel for firm valuation decision has not been explored previously. An extant body of literature supports the fact that corporate disclosure is critical for the functioning of an efficient capital market, and quality of accounting disclosure systems ensures minimisation of information asymmetry, future earnings uncertainty of a firm, minimisation of stock price volatility, and lower cost of equity (Ball and Brown, 1968; Botosan, 2000). In this regard, there can be two compelling arguments for considering disputed tax reported under contingent liability as important information. One may argue that, since financial accounting information available in the annual report form the foundation of firm-specific information available to the investors and regulators (Bushman and Smith, 2003; Kothari, 2000, 2001), the



reported claims of tax disputes due to the continuing litigation with government authorities might have important implication for the investment decisions. On the other hand, it can also be argued that since the amount of reported figure of disputed tax under contingent liability by definition “cannot be ascertained with certainty” the usefulness of this information, though relevant in terms of its future consequences, is subject to managerial discretion. The litigation cost hypothesis related to the voluntary disclosure of accounting information (Healy and Palepu, 2001), claims that the threat of litigation can have positive or negative effects on managers’ disclosure decisions. On a positive note, legal actions for inadequate or untimely disclosures can encourage firms to increase voluntary disclosure (Skinner, 1994, 1997; Kasznik and Lev, 1995). On the other hand, litigation can potentially reduce managers’ incentives to provide disclosure, particularly of forward-looking information (Francis et al., 1994). Assuming that the quality and accuracy of disputed tax reported under contingent liability is subject to managerial discretion due to its inherent approximation and uncertainty, the aforementioned positive and negative implication of litigation cost hypothesis cannot be ruled out completely. Our empirical analysis considering disputed tax as litigation risk proxy makes a modest attempt to understand its broader managerial implication.

Second, the issue of tax compliance is considered as one of the main concerns for most governments in this world and has been the focus of many researchers in this area (Mohdali and Pope, 2014). Corporate stakeholders have become increasingly concerned about whether a firm has a satisfactory risk management system and sufficient internal controls to alleviate significant firm-related risks (Henderson Global Investors, 2005; Erle et al., 2004; Erle, 2008), including tax risks dealing with the complexity of tax laws and regulations and potential uncertainties regarding the legal interpretation and application of tax laws and regulations in practice (Slemrod, 2004, 2007; Graham and Tucker, 2006). From the practitioner’s perspective, the popular financial press also raises concern about the disputed tax litigation of Indian listed companies. On several occasions, it has been reported that “the tax liabilities of Indian companies just keep on mounting.

If that liability materialises, it may have important implications on the profits and reserves of the company” (Chopra, 2003, *The Economic Times*). Similarly, practitioners also opine that “the impact of contingent liabilities cannot be disregarded. A contingent liability is like a time bomb and can be a cause of fear and concern for investors till the liability is crystallised and provided for in the accounts. If the court's ruling is in favour of the company, there is no liability, but if the judgement swings the other way, the company will take a hit” (Bhardwaj, 2012, *The Economic Times*). Hence, the market is also susceptible to contingent liabilities reported by the firm. Similar line of concern also raised by Bhagat et al. (1998) while examining the shareholder wealth implications of corporate lawsuits in the context of listed US firms. Bhagat et al. (1998) observe that no matter who brings a lawsuit against a firm, be it a government entity, another firm, or a private citizen, defendants experience economically meaningful and statistically significant wealth losses upon the filing of the suit.

The implications of tax disputes on firm performance and shareholder value creation is also gradually gaining momentum from the financial reporting as well as from capital market regulatory perspective. For instance, in 2015, the apex capital market regulator SEBI imposed a monetary penalty close to INR 2 crores on one of the listed company citing the reason that the company had failed to disclose a tax demand of INR 450 crore raised by the income-tax department to the exchanges. Furthermore, the disputed tax demand of INR 450 crore was higher than the INR 349.77 crore revenue reported by the company for the year ended March 2014 and also higher than its net worth of INR 365 crore as on 31 March 2014. As per the SEBI announcement “tax demand, though disputed by the company, was material when compared to the revenue of the company and the listed entity should have made a voluntary disclosure to the exchanges on an immediate and prompt basis” (*Live Mint*, 2015). Given the paucity of research in the context of emerging market, the present paper endeavours to revisit the litigation risk and firm performance argument using disputed tax as a proxy for litigation risk. The aforementioned concerned raise by SEBI is also consistent with the findings of related literature. For instance,

Arena and Julio (2011,2015) observe that firms with greater exposure to securities litigation hold significantly more cash in anticipation of future settlements and other related costs. Given the potential size of lawsuit settlements, litigation risk has important implications for expected cash flows. On similar line Foley et al. (2007) find that prior expectations about the likelihood of being sued are indeed significant determinants of investor reactions to the filing of class action lawsuits.

To gain further insight into investment managers' and market analysts' view on the implication of disputed tax liability on firm performance, we have also conducted a questionnaire survey<sup>5</sup>. The draft survey contained seven questions and among them, two questions are open-ended. Appendix-1 provides a brief description of our questionnaire and presents the responses. We restricted ourselves from any statistical analysis and only focused on the qualitative analysis of the insights generated from the questionnaire survey. This is largely due to the limited number of responses that we could generate from the practitioners. As shown in responses in Appendix 1, a large percentage of respondents strongly support that disputed tax liability can be considered a sign of litigation risk (32%), and it is an important aspect of contingent liabilities disclosed by the firms (48%). 32% percent of respondents even ascertain that disputed tax liability is likely to result in a lawsuit. The responses received through the questionnaire, though limited, were useful to further validate the concern raised by popular financial press on the importance of disputed tax as a source of litigation risk.

### **3.2 Hypotheses development**

Following the aforementioned arguments (Section 3.1), the two subsequent hypothesis will be the basis of the empirical examination of this study.

Considering the fact that litigation is costly (Lowry and Shu, 2002; Healy and Palepu, 2001) and can be a significant concern for the corporate financial policy and investment decision

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<sup>5</sup> The survey questionnaire is titled "Disputed tax liabilities and company valuation". Our questionnaire and survey approach is cross-sectional in design and administered through e-mail. Initially, we randomly selected fund managers, research analysts, and stock market practitioners with more than 5 years' experience to be part of the survey. We sent 200 e-mails to the respondents and were able to generate 28 responses (14% response rate). Average work experience of our respondents is 5 years and 15 years being the highest.

(Arena and Julio, 2011,2015; Qing, 2011; Malm, 2014), we hypothesise that lower DTLR will have a positive impact on a firm performance. We argue that, if litigation risk is an important determinant of firm's deferred investment decision and high cash holding pattern (Arena and Julio, 2011,2015; Malm, 2014; Malm and Kanuri, 2016) the resulted future cash-flow shocks in the event of litigation materialisation will hamper the firm profitability. Thus, we expect that, all else being equal, firms with higher exposure to DTLR will defer profitable investment opportunity by holding more cash in anticipation of future settlement costs and other indirect costs associated with litigation and hence, will be less profitable and less attractive from valuation perspective. Our first hypothesis (in the alternative form) is stated thus:

***H1. Firms with lower disputed tax liability will have better financial performance.***

Consistent with the related literature, we use return on equity (ROE) and return on assets (ROA) as the accounting-based measures of firm performance. Tobin's Q is considered as the market-based measures of firm performance. For our empirical analysis of first hypothesis, we primarily focus on disputed tax scaled by total assets and industry-adjusted disputed tax as a proxy for DTLR.

After examining the implication of DTLR on firm performance, a natural question is whether this negative impact of DTLR on firm performance generates higher expected return for such companies. Given that litigation risk exposure can have shareholder wealth implication due to cross-sectional variation in stock return (Bizjak, 1995; Bhagat et al., 1994, 1998; Foley et al., 2007), firms with higher exposure to DTLR expected to be perceived as more risky and hence should generate higher expected return. Put it differently, if litigation risk affects firm performance negatively, a firm with higher DTLR appears to be riskier and hence higher expected return should be apparent to compensate such risk. Cross-sectional variation in investors' expected return is likely to exist as firms are subject to litigation risk due to their respective business environment, industry affiliation and firm characteristics (Francis et al. 1994; Kim and Skinner, 2012). As the

costs of a litigation is very high to the company and shareholders' value, by integrating two different lines of literature together, we state our next alternative hypothesis as follows:

## ***H2. Firms with higher disputed tax litigation risk will have higher expected return***

We employ equally weighed test asset portfolios based on DTLR measure and alternative asset pricing models for examining our second hypothesis. We control for various systematic risk factors by employing alternative asset pricing models to test our second hypothesis.

### **4. Model Specification and Methodology**

This section is divided into two parts. In the first part, we discuss the model specification to test the impact of litigation risk on firm performance. In the second part, we discuss the model specifications for the cross-sectional test of stock return.

#### **4.1 Impact of litigation risk on firm performance**

The base regression model used to examine the impact of disputed tax litigation risk (DTLR) on firm performance is presented as follows:

$$Firm\ Perfor_{iy} = \alpha_0 + \beta_1 DTLR\_Risk_{iy} + \gamma Z_{iy} + Year_y + Industry_y + \varepsilon_{iy} \dots \dots \dots (1)$$

Where,  $Firm\ Perfor_{it}$  is proxy for various firm performance measures;  $DTLR\_Risk_{it}$  is a disputed tax litigation risk proxy (DTLR) of the  $i^{th}$  firm in  $y^{th}$  year.  $Z$  is a vector of other firm specific variables that affect executive compensation;  $Year$  refers to year dummies,  $Industry$  refers to industry dummy; and  $\varepsilon$  is a white noise term. We used pooled OLS and in all of our estimations the standard errors are corrected for correlation across firms and over years (Petersen, 2009). We test equation (1) with different specifications by substituting several firm performance measures and also with several litigation risk proxies.

#### **4.2 Cross-sectional test for stock returns behaviour**

To test cross-sectional return behaviour we consider three alternative asset pricing models. The selected models are Capital Asset Pricing Model (CAPM) (Sharpe, 1964; Lintner, 1965),

Fama and French (1993) three-factor model, and Carhart (1997) four-factor model. The purpose of using alternative asset pricing models in this analysis is to incorporate additional risk factors in each subsequent model and then re-examine the intercept of newly introduced asset pricing model indistinguishable from zero. The estimation of the three selected alternative asset pricing models follows the following specifications.

$$R_{pt} = \alpha_p + \beta_{pMRKT}(R_{MRKT_t}) + \varepsilon_{pt}, \quad t = 1, \dots, T, \quad p = 1 \dots N \dots \dots \dots (2)$$

$$R_{pt} = \alpha_p + \beta_{pMRKT}(R_{MRKT_t}) + \beta_{pSMB}(SMB_t) + \beta_{pHML}(HML_t) + \varepsilon_{pt}, \quad t = 1, \dots, T, \quad p = 1 \dots N \dots \dots \dots (3)$$

$$R_{pt} = \alpha_p + \beta_{pMRKT}(R_{MRKT_t}) + \beta_{pSMB}(SMB_t) + \beta_{pHML}(HML_t) + \beta_{pWML}(WML_t) + \varepsilon_{pt}, \quad t = 1, \dots, T, \quad p = 1 \dots N \dots \dots \dots (4)$$

The aforementioned equations (2), (3), and (4) respectively denote specifications for CAPM, Fama and French (1993) three-factor model, and Carhart (1997) four-factor model respectively. Where,  $R_{pt}$  is the return of test asset portfolios formed based on DTLR proxy,  $R_{MRKT_t}$  is the market excess market return over risk-free rate,  $R_{SMB_t}$  is the returns on an SMB (small minus big) portfolio,  $R_{HML_t}$  represent returns on a HML (high minus low) portfolio, and  $R_{WML_t}$  shows a return on the WML (winner minus loser) portfolio.  $\beta_{pMRKT}$ ,  $\beta_{pSMB}$ ,  $\beta_{pHML}$ ,  $\beta_{pWML}$  represent the factor sensitivities of test asset  $p$  on MRKT, SMB, HML, and WML risk factors respectively. The intercept term or commonly used alfa value in the asset pricing model provides the estimate of the abnormal return. For instance, an intercept value having economic and statistical significance shows that the litigation risk portfolio formed on the basis of disputed tax causes the expected return to vary across portfolios, and specific portfolio characteristics can have important investment implications.

## 5. Data and Variables

This section is divided into three parts for easy discussion and presentation. The first part focusses on the data source and sample selection. In the remaining two sections, we elaborate firm-

specific variables first, and then proceed further to discuss test asset portfolio construction and systematic risk factor explanation.

## **5.1 Data and samples**

The data related to firm-level information has been collected from PROWESS database maintained by the Center for Monitoring Indian Economy (CMIE). This database was previously employed by Khanna and Palepu (2000) and Gopalan and Gormley (2013) to examine the firm performance and the firm financing choices. Our sample includes top 500 non-financial Indian firms listed with the Bombay Stock Exchange (BSE). The sample period is from 2001 to 2015. These BSE listed firms (S&P BSE 500) represent nearly 93% of total market capitalisation. We exclude financial firms and firms with negative net worth. We have used monthly stock returns, market capitalisation, and the book-to-market ratio of the sample firms for the test asset portfolio construction.

## **5.2 Firm-specific variables**

The empirical literature employs different measures of firm performance. We consider both accounting measures as well as market performance measures to represent the firm performance. We use return on equity (ROE i.e., earnings after tax/net worth) and return on assets (ROA i.e., earnings before tax/total assets) as the accounting based measures of firm performance. Tobin's Q (i.e., market value of equity + book value of debt/total assets) is considered as the market-based measures of firm performance.

We consider reported disputed tax liabilities as a part of contingent liabilities by the firm as a proxy for DTLR. We consider several proxies for DTLR based on disputed tax reported by the firms to test for robustness of our results. However, the results are reported using two proxies. First, disputed tax scaled by firm size, i.e., total assets (DTLR\_TA). This proxy represents tax liability in dispute, and it is scaled by total assets to control firm size effect. Second, we use industry-adjusted disputed tax litigation risk proxy (Ind\_Adj\_DTLR). Here, we first compute

mean disputed tax liability for each industry each year in the first step using the National Industrial Classification (NIC) code<sup>6</sup>. Then, we subtract the industry mean from the firm level disputed tax. Finally, we use dummy variables equal to 1 if reported disputed tax is more than industry means, and 0 otherwise.

Consistent with the related literature, we consider firm-specific control variables such as firm size (LnAT, i.e., natural log of total assets), leverage (Lev, i.e., ratio of debt to total assets), sales growth (Sales\_Growth, i.e., percentage increase in sales over previous year), market-to-book ratio (MB, i.e., market price to book value ratio), firm age (Ln Age, i.e., natural log of firm age), tangibility (Tangibility, i.e., ratio of net fixed assets to total assets) and, research and development expenses (RnD, i.e., ratio of research and development expenses to total assets) as control variables since they could influence firm performance. Table 1 reports the descriptive statistics of the firm-specific variable.

{INSERT TABLE 1 HERE}

From Table 1, we can observe that average disputed tax liability reported by the sample firm is INR 1702.61 million, and the median value is INR 95.75 million. We also see that the sample firm has a mean ROA of 7.84% and mean ROE of 16.27%. Average mean Tobin Q value is reported as 2.14. We conduct a univariate test for difference in mean and median of the firms that report disputed tax higher than industry averages. The results are reported in Table 2. We find a significant difference in the mean ROA (p-value = 0.00) and mean ROE (p-value = 0.05) between firms that report disputed tax more than the industry average and those that report it less than the industry average. This suggests a difference in the performance of such firms and also supports our research question. Similarly, we also find significant differences in mean values of other firm-specific control variables between such firms.

{INSERT TABLE 2 HERE}

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<sup>6</sup> NIC code represents National Industrial Classification code issued by the Ministry of Statics and Programmes Implementation, Government of India.



We present the correlation matrix of all firm-specific variables in Table 3. In Table 3, we observe statistically significant correlation between several variables considered in the study. Due to high correlation among variables, we tested for multicollinearity using Variance Inflation factor (VIF). However, maximum VIF score was found to be less than 5 in all the cases, which is within the permissible range (Myers, 1990).

{INSERT TABLE 3 HERE}

### 5.3 Test asset portfolios and systematic risk factors

For all the portfolio-level analysis we use only natural logarithms of reported disputed tax (year-end in March) as our DTLR proxy. We begin test asset portfolio formation based on DTLR on September 1 every year, since around 80% of the listed firms in the BSE have their fiscal year-end in March. To avoid the look-ahead bias, a lag period of five months has been maintained between the end of the accounting year and the portfolio formation. Thus, for our analysis accounting data for the year ending March of year  $y$  has been compared with the stock return from September of year  $y$  to August of year  $y+1$ . For all the cases of portfolio formation we hold, the respective portfolio positions from September of year  $y$  to August  $y+1$  and portfolios were formed and updated at the beginning of September every year.

We form 12 DTLR test asset portfolios, and in order to avoid any size impact, equal-weighted portfolio return is used for our analysis. The different types of portfolios employed in our analysis are as follows: (i) Two single-shorter portfolio focussing on firms with DTLR, firms without or zero DTLR, (ii) Two single-shorter portfolios focussing on firms with high- DTLR and firms with low- DTLR, (iii) Four double sorted portfolios focussing on large-size-high-DTLR, large-size-low- DTLR, small-size-high-DTLR, small-size-low-DTLR firms. (iv) Four double-shorter portfolios focussing on high-BM-high-DTLR, high-BM-low-DTLR, low-BM-high-DTLR, low-BM-low-DTLR firms. For the cross-sectional test, market capitalisation measured at the end of August of the year  $y$  has been considered as a proxy for firm size. The book value of common

equity in the BM ratio is measured at the fiscal year-end in the calendar year  $y$ . This double short approach of DTLR portfolio formation helps to analyse stock return associated with litigation risk across firm size and BM portfolios. Table 4 provides the descriptive statistics of all the DTLR test asset portfolios. Reported figures in Table 4 suggest that a high-DTLR portfolio generates 49% returns as compared to 46% returns of low-DTLR portfolio. We observe that high-BM-high-DTLR firms generate more return (51%) comparing to high-BM-low-DTLR portfolios (45%). Even, small-size-high-DTLR generate more return (47%) comparing to small-size-low-DTLR portfolios (45%).

{INSERT TABLE 4 HERE}

Following Fama and French (1993), Carhart (1997), four systematic risk factors are used to mimic risk variables related to MRKT (market excess return over the risk-free rate), SMB (i.e., simple average of the value weighted returns on three small stock portfolios minus the value-weighted returns on three big stock portfolios), HML (i.e., simple average of the value weighted returns on the two high BM equity portfolios minus the low BM equity portfolios), WML (i.e., simple average of the value weighted returns of two winner stock portfolios minus the loser stock portfolios). Data for the systematic risk factors are collected from Agarwalla et al., (2013) and the data library of Indian Institute of Management, Ahmedabad.

## **6. Results Discussion**

The section has been organised into two parts. In the first part, we discuss the estimation results that focusses on the impact of DTLR on firm performance (equation 1). In the second part, we focus on the various DTLR test asset portfolio level analysis for examining the cross-sectional return variation (equations 3, 4, and 5).

### **6.1 Impact of litigation risk on firm performance**

Results with respect to our first research hypothesis are presented in Table 5 using pooled regression<sup>7</sup> with time dummy, industry dummy, and two-way clustered (firm and year) standard robust error. Consistent with our first hypothesis, we find firms with disputed tax liabilities have poor performance. Industry adjusted disputed tax dummy (*Ind\_Adj\_DTLR*) has a negative and significant association with all the three firm performance measures, i.e., ROA ( $t = -6.5$ ), ROE ( $t = -3.77$ ), and Tobin's Q ( $t = -3.66$ ) as reported in Table 5 (Column 1, 2, and 3). When we use alternative measure by considering disputed tax scaled by total assets (*DTLR\_TA*) as the dependent variable, we get the same result for account performance measures, i.e., ROA ( $t = -2.27$ ) and ROE ( $t = -2.17$ ). We also use another alternative measure for robustness, i.e., disputed tax scaled by sales turnover and our results (unreported here) hold for accounting performance measures. The results are similar to the previous literature that litigation risk affect various corporate decisions (Skinner, 1994, 1997; Arena and Julio, 2011, 2015) and hence, firm performance.

{INSERT TABLE 5 HERE}

To validate our results further, and to address simultaneously the bias between firm performance and DTLR proxies, we run our regressions with one year lagged values of all independent variables. This helps us in examining the effect of DTLR proxies in the year  $t-1$  on firm performance in the year  $t$ . We also include industry and time fixed effects. We continue to find qualitatively similar results (as reported in Table 5) with respect to accounting performance measures.

## 6.2 Litigation risk and cross section of stock returns behaviour

This section focusses on the cross-sectional return behaviour of alternative litigation risk test asset portfolios. Table 6 reports the cross-sectional test results of single shorted DTLR portfolios. Panel (A), (B), and (C) of Table 6 focus on the three alternative asset pricing models for comparison. It is intuitive to observe that the interceptor alfa values across all the DTLR test asset

<sup>7</sup> We get the same results when we run fixed effect model with time dummies.

portfolios are positive and statistically significant at a very high level. The consistent pattern of significant alpha values at Panel (A), (B), and (C) suggest that irrespective of the application of alternative asset pricing models, the DTLR parameter proxy generates significant positive return variation. Comparing the respective alpha values, in panel (A), (B), and (C) the high-DTLR portfolios generate 0.03, 0.03, and 0.02 monthly higher return as compared to low-DTLR portfolios respectively. In other words, annually the high-DTLR portfolios outperform the low-DTLR portfolios by 36% and 24% respectively. Consistent with the findings of Bhagat et al. (1994, 1998) our results reveal that the exposure to high DTLR is considered to be highly risky and hence investors expect a higher expected return compensation. Across all the test asset portfolios the market factor (MRKT) is found to be priced significantly. The test results, however, do not support the pricing of firm-specific systematic risk factors for SMB, HML, WML.

{INSERT TABLE 6 HERE}

Table 7 reports the cross-sectional test analysis for double shorted litigation risk portfolios across firm size. In Table 7 we examine whether the high litigation risk portfolios behave differently across different firm size. In Table-7, MRKT is priced significantly across all the test asset portfolios which suggest that systematic risk matters. Interestingly, we have constructed the portfolios based on small and large size; the SMB factor is insignificant, and hence, results are not influenced by size factor. HML and WML factors are also insignificant. Analysis of intercept across all the test asset portfolios suggests that small-size-high-DTLR outperforms small-size-low-DTLR portfolios. Large-size-low-DTLR portfolios outperform large-size-high-DTLR portfolios. Small-size-high-DTLR portfolios outperform large-size-high-DTLR portfolios. Large-size-low-DTLR portfolios outperform small-size-low-DTLR portfolios. To briefly report, results in Table 7 suggest that DTLR does matter for cross-sectional return variation even after controlling the size effect.

{INSERT TABLE 7 HERE}

Table 8 presents cross-sectional test analysis for double shorted litigation risk portfolios across the book-to-market ratio (BM). This approach helps us to understand if litigation risk behaves differently for value and firm growth. Panel (A), (B), and (C) of Table 8 represent results for alternative asset pricing models. Reported results with a positive and significant intercept alpha values suggest that litigation risk matters and generates excess return irrespective of the asset pricing models and firm growth opportunity. MRKT is priced significantly across all the test asset portfolios, and other risk factors are insignificant. Results reveal that high-BM-high-DTLR outperforms low-BM-low-DTLR, low-BM-high-DTLR outperforms high-BM-low-DTLR, high-BM-low-DTLR outperforms low-BM-low-DTLR.

{INSERT TABLE 8 HERE}

## 7. Summary and Conclusion

The present paper examines the impact of disputed tax litigation risk (DTLR) on firm performance in the context of emerging markets. Our results revealed that DTLR matters for firm performance evaluation and expected stock return behaviour. We find a negative impact of DTLR on firm performance. This allows us to say that firms who have higher disputed tax liability do not perform well. Our cross-sectional test result using DTLR test asset portfolio reveals that after controlling the effect of systematic risk factors firms with higher DTLR generate higher expected return. Cross-sectional test results support our claim that higher DTLR firms will have higher expected return and market participants should take into account the tax litigation risk factors at the time of taking investment decisions. To briefly sum up, our results suggest that DTLR matters for firm performance and can alter the investment decision if misjudged as simply irrelevant information. Our study supports greater disclosure norms for the litigation risk and attempts to validate the practitioner's cause of concern on the contingent liability and stock market performance relationship. It also provides feedback to regulators for tax dispute settlement process and encourages firms to disclose better.

As per our understanding in the emerging market context, this paper is the first-of-its-kind study which focusses on disputed tax as a litigation risk proxy and examines its possible impact on firm performance. There are also certain limitations. First, we consider disputed tax liability reported under contingent liability as a proxy for litigation risk and could not consider similar litigations and disputes due to unavailability of data and limited disclosures. Second, our study relied on the secondary data source and reported tax liability in the annual report. Despite these limitations, we add to the litigation risk literature and attempt to provide evidence on the relationship between DTLR and firm performance.

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## List of tables

**Table 1: Descriptive Statistics of Firm-Specific Variables**

Variables	No. of Observations	Mean	Median	Standard Deviation
Panel (A) Firm Performance Measurement Variables				
ROA	5842	0.1372	0.1220	0.0895
ROE	5842	0.1643	0.1572	0.2089
TobinQ	4753	2.1594	1.5453	1.7899
Panel (B) Disputed Tax Litigation Risk Measures				
Disputed Tax (in INR Millions)	5842	1702.61	95.75	7599.89
DTLR_TA	5967	0.020505	0.0069916	0.0380839
Ind_Adj_DTLR	5967	0.2493715	0	0.4326855
Panel (C) Firm Specific Control Variables				
RnD	5967	0.004143	0.0000886	0.0096094
MB	4759	3.655281	2.27	4.411849
Lev	5328	0.253982	0.2453478	0.1798187
LnAge	5962	3.255883	3.258096	0.8063908
Sales Growth	5447	0.2364751	0.1555486	0.4430073
Tangibility	5925	0.2885784	0.2712674	0.1871062

Notes: This table presents descriptive statistics for our sample firms. We report mean, median, standard deviation and percentile (p25, p75) range and of all the variables.

**Table 2: Univariate Tests Results**

	Ind_Adj_DTLR=1		Ind_Adj_DTLR =0					
	(1)	(2)	(3)	(4)	(1-3)	P value	(2-4)	P value
	Mean	Median	Mean	Median	Diff of Mean	P value	Diff of Median	P value
Firm performance variables								
ROA	0.0724	0.0618	0.0804	0.0686	-0.0080***	0.0005	0.0698***	0.0004
ROE	0.1546	0.1406	0.1655	0.1564	-0.0109*	0.0518	0.1515***	0.007
TobinQ	2.1556	1.5713	2.1431	1.5250	0.0125	0.8263	1.5588	0.1158
Control variables								
LnMCAP	10.6108	10.5509	9.3748	9.5299	1.2360***	0.0000	9.3149***	0.0000
RnD	0.0041	0.0004	0.0041	0.0000	0.0000	0.9557	0.0004	0.0000
MB	3.6655	2.4200	3.6515	2.2400	0.0140	0.9223	2.4060	0.0468
Lev	0.2366	0.2423	0.2599	0.2460	-0.0233***	0.0000	0.2656***	0.0007
LnAge	3.5136	3.6109	3.1702	3.1781	0.3434***	0.0000	3.2675***	0.0000
Sales Growth	0.1809	0.1331	0.2559	0.1681	-0.0750***	0.0000	0.2081***	0.0000
Tangibility	0.2720	0.2633	0.2941	0.2728	-0.0221***	0.0001	0.2854***	0.0018

Notes: This table presents mean, median, difference in mean and difference in median based on Industry adjusted disputed tax dummy. T-test and Mann-Whitney test the significance of differences in mean and median respectively. The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 3: Correlations Matrix of Firm-Specific Variables**

	ROA	ROE	TobinQ	Ind_Adj_DTLR	DTLR_TA	LnMCP	RnD	MB	Lev	LnAge	Sales Growth	Tangibility
ROA	1											
ROE	0.8067***	1										
TobinQ	0.5041***	0.3975***	1									
Ind_Adj_DTLR	-0.0463*	-0.0261	0.0032	1								
DTLR_TA	0.0366***	0.0198	0.0273	0.4253***	1							
LnMCP	0.2452***	0.1850***	0.4480*	0.2830***	0.0741*	1						
RnD	0.1448***	0.0970***	0.1546*	-0.0007	0.0087	0.0564*	1					
MB	0.3236***	0.3665***	0.8563*	0.0014	0.0213	0.3635*	0.1113*	1				
Lev	-0.4860*	-0.2881*	-0.3507*	-0.0563*	-0.1340*	-0.2216*	-0.1623*	-0.1826*	1			
LnAge	0.0660***	0.0667***	-0.0354	0.1843***	0.1316***	0.1239*	0.0821*	-0.0049	-0.0794*	1		
Sales Growth	0.0572***	0.1039***	0.0688*	-0.0741*	-0.0923*	0.0012	-0.0527*	0.0926*	0.0438*	-0.2376*	1	
Tangibility	-0.1290*	-0.1239*	-0.2027*	-0.0512*	-0.0411*	-0.2055*	-0.0124	-0.1693*	0.3550*	0.029	0.002	1

Notes: This table display Pearson correlations between the selected variables. The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 4: Descriptive Statistics of Test Asset Portfolio and Systematic Risk Factors**

Test Asset Portfolios	Average Disputed tax	Mean Portfolio Return	Standard Deviation			
Panel (A) Descriptive Statistics of Test Asset Portfolios						
DTLR	256587.43	0.46	1.4			
No-DTLR	0	0.45	1.27			
Hhigh-DTLR	19016.79	0.49	1.39			
Low-DTLR	23.33	0.46	1.24			
Small-Size-High-DTLR	1120	0.47	1.29			
Small-Size-Low-DTLR	37.8	0.45	1.4			
Large-Size-High-DTLR	6678.32	0.46	1.37			
Large-Size-Low-DTLR	191.74	0.46	1.35			
High-BM-Low-DTLR	68.18	0.45	1.2			
High-BM-High-DTLR	4302.39	0.51	1.27			
Low-BM-Low-DTLR	62.84	0.44	1.39			
High-BM-High-DTLR	2637.85	0.44	1.44			
Panel (B) Descriptive Statistics and Correlation Matrix of Systematic Risk Factors						
	Descriptive Statistics		Correlation Matrix			
Risk Factors	Mean	Standard Deviation	MRKT	SMB	HML	WML
MRKT	1.39	7.82	1			
SMB	0.43	5.06	0.144*	1		
HML	1.51	7.47	0.340***	0.419***	1	
WML	1.29	6.89	-0.303***	-0.186**	-0.15***	1

**Notes:** Sample includes 163 monthly observations. The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 5: Impact of Disputed Tax Litigation Risk (DTLR) on Firm's Performance**

	(1)	(2)	(3)	(4)	(5)	(6)
	ROA	ROE	TobinQ	ROA	ROE	TobinQ
IND_ADJ_DTLR	-0.0176*** (-6.50)	-0.0275*** (-3.77)	-0.183*** (-3.66)			
DTLR_TA				-0.0738** (-2.27)	-0.173** (-2.17)	-0.657 (-1.24)
LnMCAP	0.00864*** (6.77)	0.0140*** (4.29)	0.165*** (5.92)	0.00633*** (5.06)	0.0104*** (3.36)	0.141*** (5.57)
RnD	-0.115 (-0.44)	-0.280 (-0.39)	2.997 (1.29)	-0.0935 (-0.34)	-0.256 (-0.35)	3.240 (1.35)
MB	0.00217*** (2.93)	0.00790*** (2.96)	0.292*** (15.24)	0.00247*** (3.31)	0.00836*** (3.14)	0.295*** (15.60)
Lev	-0.194*** (-21.49)	-0.289*** (-9.11)	-1.718*** (-5.39)	-0.197*** (-21.78)	-0.295*** (-9.13)	-1.747*** (-5.44)
LnAge	0.000753 (0.27)	0.00586 (0.79)	-0.114** (-2.54)	0.000287 (0.10)	0.00524 (0.70)	-0.119*** (-2.62)
Sales Growth	0.0128*** (3.81)	0.0437*** (4.29)	-0.0140 (-0.22)	0.0134*** (3.93)	0.0444*** (4.41)	-0.00785 (-0.12)
Tangibility	0.0275** (2.23)	0.0251 (0.69)	0.204 (1.15)	0.0277** (2.22)	0.0247 (0.68)	0.207 (1.16)
_cons	0.0423** (2.12)	0.0827* (1.71)	0.517* (1.90)	0.0621*** (3.09)	0.114** (2.39)	0.720*** (2.60)
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	4228	4228	4228	4228	4228	4228
R-Square	0.494	0.321	0.829	0.485	0.317	0.827
p-value	0.000	0.000	0.000	0.000	0.000	0.000

**Notes:** Amounts reported are means of coefficients from pooled regressions. t-statistics are given in parentheses. Standard errors are 2-way cluster-robust (Petersen 2009). The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions of all the variables are provided in the appendix.



**Table 6: Cross-Sectional Test of Single Shorted Disputed Tax Litigation Risk (DTLR) Portfolios**

Portfolios	$\alpha_P$	$\beta_{MRKT P}$	$\beta_{SMB P}$	$\beta_{HML P}$	$\beta_{WML P}$	Adj. $R^2$	Wald Test
Panel (A) Capital Asset Pricing Model							
DTLR	0.43*** (5.12)	0.04*** (4.50)				0.10	20.28 {0.00}
No-DTLR	0.51*** (5.47)	0.04*** (3.51)				0.07	12.33 {0.00}
Hhigh-DTLR	0.49*** (5.16)	0.04*** (3.05)				0.05	9.29 {0.00}
Low-DTLR	0.46*** (5.28)	0.05*** (4.23)				0.09	17.93 {0.00}
Panel (B) Fama and French Three Factor Model							
DTLR	0.43*** (5.06)	0.05*** (4.06)	0.01 (0.37)	0.01 (0.02)		0.09	6.46 {0.00}
No-DTLR	0.53*** (5.51)	0.04*** (3.43)	-0.01 (-0.34)	-0.01 (-0.50)		0.05	4.04 {0.00}
Hhigh-DTLR	0.48*** (5.06)	0.03** (2.80)	-0.01 (-0.46)	0.01 (0.59)		0.04	3.42 {0.02}
Low-DTLR	0.45*** (5.07)	0.04*** (4.03)	0.02 (0.86)	-0.01 (-0.55)		0.09	6.16 {0.00}
Panel (C) Momentum Augmented Four Factor Model							
DTLR	0.41*** (4.58)	0.05*** (4.25)	0.01 (0.40)	0.01 (0.04)	0.02 (0.85)	0.09	5.29 {0.00}
No-DTLR	0.51*** (5.10)	0.05*** (3.50)	0.01 (0.44)	0.01 (0.61)	0.01 (0.77)	0.05	3.17 {0.00}
Hhigh-DTLR	0.45*** (4.53)	0.04*** (3.04)	-0.01 (-0.45)	0.02 (0.58)	0.01 (0.69)	0.05	2.95 {0.02}
Low-DTLR	0.43*** (4.69)	0.05*** (4.09)	0.01 (0.84)	-0.01 (-0.50)	0.01 (0.62)	0.09	4.79 {0.00}

Notes: *t*-statistics (reported in parentheses) are adjusted for autocorrelation and heteroscedasticity. Figures in the curly bracket represent *p*-values. \*, \*\* and \*\*\* represent statistical significance at 10%, 5% and 1% level respectively.

**Table 7: Cross-Sectional Test of Size Based Double Shorted Disputed Tax Litigation Risk (DTLR) Portfolios**

Portfolios	$\alpha_P$	$\beta_{MRKT P}$	$\beta_{SMB P}$	$\beta_{HML P}$	$\beta_{WML P}$	Adj. $R^2$	Wald Test
Panel (A) Capital Asset Pricing Model							
Small-Size-High-DTLR	0.40*** (4.28)	0.04*** (4.48)				0.09	18.29 {0.00}
Small-Size-Low-DTLR	0.06*** (4.54)	0.40*** (4.05)				0.10	20.60 {0.00}
Large-Size-High-DTLR	0.05*** (3.93)	0.41*** (4.68)				0.08	15.43 {0.00}
Large-Size-Low-DTLR	0.40*** (4.63)	0.05*** (4.59)				0.11	21.09 {0.00}
Panel (B) Fama and French Three Factor Model							
Small-Size-High-DTLR	0.44*** (4.83)	0.04*** (3.62)	0.02 (1.04)	-0.01 (-1.28)		0.06	4.76 {0.00}
Small-Size-Low-DTLR	0.09*** (3.94)	0.05*** (3.94)	0.01 (0.50)	0.01 (0.60)		0.10	7.11 {0.00}
Large-Size-High-DTLR	0.02*** (4.62)	0.05*** (3.90)	-0.01 (-0.21)	-0.01 (-0.04)		0.08	5.56 {0.00}
Large-Size-Low-DTLR	0.41*** (4.64)	0.05*** (4.65)	-0.01 (-0.57)	-0.01 (-0.20)		0.11	7.78 {0.00}
Panel (C) Momentum Augmented Four Factor Model							
Small-Size-High-DTLR	0.40*** (4.20)	0.05*** (4.11)	0.02 (1.07)	-0.02 (-1.35)	0.01 (0.72)	0.08	4.54 {0.00}
Small-Size-Low-DTLR	0.06*** (3.50)	0.06*** (4.18)	0.01 (0.49)	0.01 (0.65)	0.02 (0.91)	0.10	5.87 {0.00}
Large-Size-High-DTLR	0.07*** (3.95)	0.05*** (4.31)	-0.01 (-0.32)	-0.01 (-0.01)	0.02 (1.11)	0.09	5.12 {0.00}
Large-Size-Low-DTLR	0.35*** (3.93)	0.06*** (5.17)	-0.01 (-0.41)	-0.01 (-0.17)	0.03* (1.88)	0.13	7.26 {0.00}

Notes:  $t$ -statistics (reported in parentheses) are adjusted for autocorrelation and heteroscedasticity. Figures in the curly bracket represent  $p$ -values. \*, \*\* and \*\*\* represent statistical significance at 10%, 5% and 1% level respectively.

**Table 8: Cross-Sectional Test of Book to Market (BM) Double Shorted Disputed Tax Litigation Risk (DTLR) Portfolios**

Portfolios	$\alpha_P$	$\beta_{MRKT P}$	$\beta_{SMB P}$	$\beta_{HML P}$	$\beta_{WML P}$	Adj. $R^2$	Wald Test
<b>Panel (A) Capital Asset Pricing Model</b>							
High-BM-Low-DTLR	0.48*** (6.02)	0.04*** (3.86)				0.08	14.90 {0.00}
High-BM-High-DTLR	0.50*** (6.07)	0.04*** (3.23)				0.05	10.44 {0.00}
Low-BM-Low-DTLR	0.36*** (3.54)	0.07*** (5.11)				0.13	26.08 {0.00}
High-BM-High-DTLR	0.42*** (4.20)	0.04*** (3.84)				0.08	14.73 {0.00}
<b>Panel (B) Fama and French Three Factor Model</b>							
High-BM-Low-DTLR	0.47*** (5.87)	0.04*** (3.87)	0.01 (0.12)	-0.01 (-0.59)		0.07	5.20 {0.00}
High-BM-High-DTLR	0.50*** (5.99)	0.04*** (3.34)	-0.01 (-0.50)	-0.01 (-0.16)		0.05	4.02 {0.00}
Low-BM-Low-DTLR	0.37*** (3.67)	0.06*** (4.72)	0.04 (1.63)	-0.01 (-1.22)		0.12	8.69 {0.00}
High-BM-High-DTLR	0.41*** (4.05)	0.04*** (3.29)	0.01 (0.25)	0.01 (0.81)		0.07	5.29 {0.00}
<b>Panel (C) Momentum Augmented Four Factor Model</b>							
High-BM-Low-DTLR	0.46*** (5.48)	0.04*** (3.90)	0.01 (0.10)	-0.01 (-0.56)	0.01 (0.43)	0.07	4.07 {0.00}
High-BM-High-DTLR	0.43*** (4.84)	0.05 (4.49)	-0.01 (-0.71)	-0.01 (-0.13)	0.02 (1.65)	0.10	5.54 {0.00}
Low-BM-Low-DTLR	0.35*** (3.28)	0.07*** (4.84)	0.04 (1.60)	-0.01 (-1.16)	0.01 (0.75)	0.13	6.83 {0.00}
High-BM-High-DTLR	0.38*** (3.55)	0.05*** (3.60)	0.02 (0.23)	0.01 (0.79)	0.01 (0.77)	0.08	4.48 {0.00}

Notes: *t*-statistics (reported in parentheses) are adjusted for autocorrelation and heteroscedasticity. Figures in the curly bracket represent *p*-values. \*, \*\* and \*\*\* represent statistical significance at 10%, 5% and 1% level respectively.

## Appendix-1 Questionnaire on Disputed Tax Liabilities and Company Valuation

Panel (B): Questionnaire Survey Responses: Disputed Tax Liabilities and Company Valuation					
Questions	Strongly Agree (1)	(2)	(3)	(4)	Strongly Disagree (5)
Q1. Disputed tax liability can be considered as a sign of litigation risk.	32%	44%	8%	16%	0%
Q2. Disputed tax liability is an important aspect of contingent liabilities disclosed by the firms.	48%	28%	16%	8%	0%
Q3. Disputed tax liability is likely to result in a lawsuit.	32%	20%	36%	12%	0%
Q4. Disputed tax liability appearing in the annual report (disclosed under contingent liabilities) affect company stock performance.	8%	36%	12%	7%	16%
Q6. Based on your experience, provide some factors responsible for disputed tax liabilities. (Open ended question)					
Q7. Based on your experience provide comments on disputed tax liabilities as an important indicator for investment decisions. (Open ended question)					

Note: This table reports the percentage of responses across different parameters. We only report the responses to the close-ended questions.