Measuring securities litigation risk ☆

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ABSTRACT

Extant research commonly uses indicator variables for industry membership to proxy for securities litigation risk. We provide evidence on the construct validity of this measure by reporting on the predictive ability of alternative models of litigation risk. While the industry measure alone does a relatively poor job of predicting litigation, supplementing this variable with measures of firm characteristics (such as size, growth, and stock volatility) considerably improves predictive ability. Additional variables such as those that proxy for corporate governance quality and managerial opportunism do not add much to predictive ability and so do not meet the cost–benefit test for inclusion.

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1. Introduction

A large body of research in accounting and finance investigates whether litigation risk (the risk of securities class action lawsuits) affects corporate decisions. While much research investigates the effect of litigation risk on managers' disclosure choices, authors also investigate how litigation affects a large array of managerial decisions.[1]

Much of this research measures litigation risk using an industry-based proxy, either alone or in conjunction with other variables. A common proxy is based on membership in the biotechnology, computers, electronics, and retail industries. This proxy originates from Francis, Philbrick and Schipper (1994a, 1994b; hereafter FPS), who sample firms drawn from these industries to study the relation between litigation and disclosure because those industries were subject to "a high incidence of litigation during 1988–1992" (1994a, p. 144). These authors do not advocate the use of industry membership generally, or these industries in particular, as a universal proxy for litigation risk. However, the use of this industry proxy (hereafter, the FPS measure) has become pervasive in the literature.

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[1] Papers that investigate the relation between managers' financial reporting and disclosure decisions and litigation risk include Skinner (1994, 1997), Francis et al. (1994a, 1994b), Johnson et al. (2000, 2001), Baginski et al. (2002), Frankel et al. (2002), Matsumoto (2002), Field et al. (2005), Lennox and Park (2006), Rogers and Van Buskirk (2009), and Donelson et al. (2010), among others. Research also examines how litigation risk affects cash holdings (Arena and Julio, 2010), equity-based compensation (Dai et al., 2008; Jayaraman and Milbourn, 2009), conservatism in debt contracting (Beatty et al., 2008), IPO underpricing (Lowry and Shu, 2002; Weiss Hanley and Hoberg, 2010), institutional monitoring and board discipline (Cheng et al., 2010; Laux, 2010), MD&A disclosures (Brown and Tucker, 2011), audit fees (Seetharaman et al., 2002), and auditors' resignation decisions (Shu, 2000).

It is reasonable to expect that litigation is associated with industry membership. Stock volatility and stock turnover directly affect litigation risk because both are directly related to measures of stockholder damages that drive plaintiff lawyers' decisions to file lawsuits (e.g., Alexander, 1991; Jones and Weingram, 1996a). Both of these variables are likely to be associated with industry; for example, high technology stocks are by their nature inherently more uncertain with more variable earnings, and hence are more volatile.

The use of industry to proxy for litigation risk results from a cost–benefit tradeoff by researchers. While this proxy is simple and readily available, it likely captures industry characteristics that are unrelated to litigation risk but that affect managers' decisions, creating a potential correlated omitted variables problem. The fact that this proxy is ubiquitous in the literature seems to indicate that it passes the cost–benefit test. However, there is little evidence (of which we are aware) on the construct validity of this proxy or whether other proxies are available that might represent a better cost–benefit tradeoff. Further, beyond reporting pseudo-R squareds, there is little systematic evidence on the ability of extant measures to actually predict litigation. We report on some relatively simple and low cost models that significantly outperform the industry-based proxies in terms of predictive and discriminatory ability.

The use of industry membership to capture litigation risk makes it difficult to ensure that industry captures litigation risk as opposed to different underlying factors that affect managers' disclosure decisions. Consider a study that investigates whether litigation risk affects managers' disclosure choices and uses industry to proxy for litigation risk. If managers' disclosure decisions depend on their firms' information environments (Einhorn and Ziv, 2008) and information environment varies systematically across industry, disclosure will be associated with industry for reasons that have little to do with litigation risk.[2] A similar problem arises if firms in high technology industries have higher proprietary costs than firms in more mature industries and proprietary costs systematically affect disclosure.

The existence of a well-developed theory of litigation would allow us to identify all of the economic determinants of litigation, in which case the FPS measure would presumably no longer be useful in explaining litigation risk. Although we do not have such a theory (we discuss previous literature in Section 2), one goal of our research is to investigate systematically whether the inclusion of an extensive set of firm-specific characteristics reduces the usefulness of the FPS variable in predicting litigation, as would be expected if these characteristics directly capture litigation risk.

We provide two sets of empirical analyses to evaluate how well industry membership proxies for securities litigation risk. We first provide evidence on how litigation rates vary across industries and through time. This evidence shows that while litigation tends to cluster in certain industries, the set of industries varies over time. Nevertheless, the FPS industries generally have consistently higher litigation rates than other industries, although this result is weaker when we focus the analysis on large firms generally subject to higher rates of litigation.

Second, we provide evidence on the predictive ability of alternative models of litigation risk. We show that while the relationship between the FPS industry measure and litigation is robust in a statistical sense, using industry membership alone does a relatively poor job of predicting litigation. However, when we supplement this variable with measures of firm characteristics that include size, growth, and stock performance and volatility, predictive ability improves considerably. These variables are readily available to researchers in a broad variety of settings. Further, including additional variables, such as proxies for corporate governance quality, issuance of securities, insider trading, and so forth, adds relatively little to predictive ability. Given the cost of obtaining these variables (which includes possible sample selection biases), more sophisticated models that include these variables are unlikely to be cost beneficial.

Conventional measures of goodness of fit (such as pseudo-R-squareds) do not perform well in assessing the fit and predictive ability of these models. We use a number of alternative approaches suggested in the statistics literature (e.g., Hosmer and Lemeshow, 2000; Long and Freese, 2006) to evaluate model fit and predictive ability, most notably the area under the receiver operating characteristic (ROC) curve, or AUC.[3] These techniques confirm that models that supplement the FPS measure with a small set of variables that are readily available from CRSP/Compustat provide significant improvements in predictive ability relative to a model that includes the FPS measure alone.

By securities litigation risk, we are referring specifically to the risk of securities class action lawsuits, as opposed to the risk of legal action brought by government agencies such as the U.S. Securities and Exchange Commission (SEC), the U.S. Department of Justice, or state attorney generals, which we view as a related but distinct form of litigation risk. SEC Accounting and Auditing Enforcement Releases (AAERs) have been extensively studied in the accounting literature (see Feroz et al., 1991; Beneish, 1999; Dechow et al., 1996, 2011; Schrand and Zechman, 2011, among others).[4] As noted in those studies, SEC enforcement actions typically result from cases of serious accounting irregularities, including fraud. While such cases are likely to lead to securities class actions, many securities class actions involve less serious allegations,

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[2] For example, financial statements are relatively less useful for firms in high technology industries with significant intellectual property and other intangibles (e.g., Lev and Zarowin, 1999; Tasker, 1998) so that managers of firms in these industries have stronger incentives to provide voluntary disclosures as a substitute for mandated disclosure.

[3] To this point, these methods have been used infrequently in the accounting literature but, as argued below, are useful for evaluating and comparing the predictive ability of different models. Recent accounting papers that use this measure include Batta and Wongsunwai (2011), Correia et al. (2011), Demers and Joos (2007), Hobson et al. (2011), and Larcker and Zakolyukina (2011).

[4] Actions brought by other government agencies, such as the U.S. Department of Justice and state attorney generals usually involve criminal allegations, and are a subset of SEC enforcement actions (i.e., not all SEC enforcement actions relate to allegations serious enough to warrant allegations of criminal wrongdoing).