

Firm-Level Litigation Risk: Measurement and Effects

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Internet Appendix

Table IA1: Common litigious words in 10-Ks

This table presents a list of thirty of the most often mentioned litigious words (Column 1), negative litigious words (Column 2), non-negative litigious words (Column 3) in firm 10-K filings at the SEC. The word list is constructed based on Loughran and McDonald Master Dictionary.

All	Negative	Non-Negative
shall	claims	shall
amended	litigation	amended
laws	breach	laws
regulatory	alleged	regulatory
regulations	criminal	regulations
claims	defendants	herein
herein	plaintiffs	law
law	breaches	contracts
contracts	plaintiff	amendment
amendment	alleging	contract
contract	allegations	legal
legal	revocation	thereof
thereof	injunction	consent
consent	defendant	court
court	encumbrances	regulation
regulation	prosecution	hereby
hereby	prejudice	settlement
settlement	alleges	hereunder
hereunder	breached	hereof
hereof	redacted	contractual
litigation	encumbrance	thereto
contractual	unlawful	jurisdiction
thereto	antitrust	beneficial
jurisdiction	injunctions	hereto
beneficial	allegedly	notwithstanding
breach	allege	severance
hereto	felony	thereafter
notwithstanding	prosecute	counsel
severance	incapacity	amendments
thereafter	sue	duly

Table IA2: Lawsuit Likelihood and Litigation Risk: More vs. Less Liberal Courts

This table presents the distributions of lawsuit likelihood in year $t+1$ across quintiles of *Legal Risk* in year t for more vs. less liberal courts. Panel A covers securities lawsuits and Panel B covers non-securities lawsuits. Both panels split the sample based on the median of the liberal court measure from Huang, Hui, and Li (2019). Variable definitions are in Appendix A.

Panel A: Securities lawsuit likelihood across litigation risk quintiles: More vs. Less Liberal Courts

More Liberal Court		Less Liberal Court	
Legal Risk Quintile	Lawsuit likelihood	Legal Risk Quintile	Lawsuit likelihood
1 (bottom)	0.044	1 (bottom)	0.039
2	0.060	2	0.046
3	0.079	3	0.061
4	0.100	4	0.079
5 (top)	0.124	5 (top)	0.115
top - bottom	0.054	top - bottom	0.042
<i>p</i> value (top - bottom)	0.000	<i>p</i> value (top - bottom)	0.000

Panel B: Non-Securities lawsuit likelihood across litigation risk quintiles: More vs. Less Liberal Courts

More Liberal Court		Less Liberal Court	
Legal Risk Quintile	Lawsuit likelihood	Legal Risk Quintile	Lawsuit likelihood
1 (bottom)	0.036	1 (bottom)	0.062
2	0.048	2	0.074
3	0.064	3	0.104
4	0.096	4	0.144
5 (top)	0.131	5 (top)	0.185
top - bottom	0.159	top - bottom	0.194
<i>p</i> value (top - bottom)	0.000	<i>p</i> value (top - bottom)	0.000

Table IA3. Robustness Tests: Logit Model

This table shows the predictability of our litigation risk measure on future new lawsuits using a logit model, in which relevant firm characteristics are controlled for following KS. The specification is $Lawsuit_{i,t+1} = \beta_0 + \beta_1 \cdot Legal\ Risk_{i,t} + X_{i,t} \cdot \Gamma + FEs + \varepsilon_{i,t+1}$. *Lawsuit* is an indicator variable for the presence of a new lawsuit filed against a firm in year t+1. *Legal Risk* is the number of litigious words with negative connotation in a firm's 10-K filing scaled by the 10-K file size. *X* is the vector of control variables and *Γ* is the vector of the corresponding coefficients. *FEs* stands for various fixed effects as indicated in the bottom rows. Standard errors are clustered at the firm level. The sample period is 2000-2022. Variable definitions are in Appendix A. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Lawsuit(t+1)	(2) Lawsuit(t+1)	(3) Lawsuit(t+1)
Legal Risk	1.038*** [4.03]	1.135*** [4.18]	1.023*** [3.89]
Log(Assets)	0.513*** [14.77]	0.510*** [13.77]	0.505*** [14.15]
Sales Growth	0.028 [1.21]	0.045* [1.90]	0.035 [1.50]
Excess Return	-1.474*** [-4.04]	-1.378*** [-3.45]	-1.381*** [-3.71]
Skewness	0.007 [0.32]	-0.007 [-0.31]	0.007 [0.33]
Volatility	1.346*** [4.90]	1.157*** [3.88]	1.388*** [4.98]
Turnover	0.366*** [4.21]	0.446*** [4.88]	0.355*** [3.96]
Lawsuit(t)	-0.135*** [-4.05]	-0.202*** [-5.64]	-0.141*** [-4.15]
Observations	48,152	46,478	47,092
R-squared	0.187	0.221	0.194
Firm FE	Y	Y	Y
Year FE	Y	N	N
Industry-Year FE	N	Y	N
Circuit-Year FE	N	N	Y

Table IA4: Litigation Risk and Future Lawsuits: Additional Lags of Lawsuits

This table shows robustness tests for the predictability of our litigation risk measure on future new lawsuits using a linear probability model, in which relevant firm characteristics are controlled for following KS. In particular, more lags of *Lawsuit* are included as additional control variables. The specification is $Lawsuit_{i,t+1} = \beta_0 + \beta_1 \cdot Legal\ Risk_{i,t} + X_{i,t} \cdot \Gamma + FEs + \varepsilon_{i,t+1}$. *Lawsuit* is an indicator variable for the presence of a new lawsuit filed against a firm in year t+1. *Legal Risk* is the number of litigious words with negative connotation in a firm's 10-K filing scaled by the 10-K file size. *X* is the vector of control variables and *Γ* is the vector of the corresponding coefficients. *FEs* stands for various fixed effects as indicated in the bottom rows. Standard errors are clustered at the firm level. The sample period is 2000-2022. Variable definitions are in Appendix A. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Lawsuit(t+1)	(2) Lawsuit(t+1)	(3) Lawsuit(t+1)
Legal Risk	0.219*** [5.52]	0.241*** [6.13]	0.210*** [5.20]
Lawsuit(t)	-0.008 [-1.25]	-0.017*** [-2.68]	-0.009 [-1.37]
Lawsuit(t-1)	-0.038*** [-6.40]	-0.042*** [-7.08]	-0.039*** [-6.58]
Lawsuit(t-2)	-0.036*** [-6.27]	-0.040*** [-6.93]	-0.036*** [-6.07]
Log(Assets)	0.047*** [11.12]	0.046*** [10.63]	0.047*** [10.74]
Sales Growth	-0.003 [-1.26]	-0.002 [-0.84]	-0.003 [-1.10]
Excess Return	-0.108*** [-2.58]	-0.117*** [-2.62]	-0.106** [-2.46]
Skewness	0.000 [0.13]	-0.001 [-0.42]	0.000 [0.03]
Volatility	0.072** [2.35]	0.065** [2.05]	0.079** [2.54]
Turnover	0.046*** [4.85]	0.052*** [5.31]	0.047*** [4.71]
Observations	56,867	56,782	55,590
R-squared	0.313	0.342	0.316
Firm FE	Y	Y	Y
Year FE	Y	N	N
Industry-Year FE	N	Y	N
Circuit-Year FE	N	N	Y

Table IA5. Comparison Between Probability-Prediction Measure and Our Measure

This table illustrates the incremental predictive power of our litigation risk measure when including a probability-based litigation risk measure from KS (2012). *Lawsuit* is an indicator variable for the presence of a new lawsuit filed against a firm in year t+1. *Legal Risk* is the number of litigious words with negative connotation in a firm's 10-K filing scaled by the 10-K file size. *Prob. Pred.* is the predicted value using the KS model (Model 3 of their Table 7) to predict a lawsuit in year t+1. Fixed effects are illustrated in the bottom rows. Standard errors are clustered at the firm level. The sample period is 2000-2022. Variable definitions are in Appendix A. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Lawsuit(t+1)	(2) Lawsuit(t+1)	(3) Lawsuit(t+1)
Legal Risk	0.151*** [4.55]		0.128*** [3.92]
Prob. Pred.		0.779*** [15.72]	0.770*** [15.63]
Observations	74,242	74,242	74,242
R-squared	0.296	0.299	0.300
Firm FE	Y	Y	Y
Circuit-Year FE	Y	Y	Y

Table IA6: Predictability for Specific Types of Non-Securities Lawsuits

This table shows the predictability of our litigation risk measure for specific types of future non-securities lawsuits using a linear probability model, in which relevant firm characteristics are controlled for following KS. The specification is $Y_{i,t+1} = \beta_0 + \beta_1 \cdot \text{Legal Risk}_{i,t} + X_{i,t} \cdot \Gamma + \text{FES} + \varepsilon_{i,t+1}$. The dependent variable is a dummy variable for a particular non-securities lawsuit type (patent, contract, antitrust, injury, or ERISA) filed against a firm in year t+1. *Legal Risk* is the number of litigious words with negative connotation in a firm's 10-K filing scaled by the 10-K file size. The sample period is 2000-2022. Standard errors are clustered at the firm level. Firm fixed effects and circuit-year fixed effects are included. Variable definitions are in Appendix A. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) PatentSuit	(2) ContractSuit	(3) AntitrustSuit	(4) InjurySuit	(5) ERISASuit
Legal Risk	0.041** [2.05]	0.050*** [3.54]	0.036*** [3.28]	0.015* [1.69]	0.004 [0.42]
Log(Assets)	0.007*** [3.23]	0.004*** [3.04]	0.003*** [3.54]	0.003*** [3.83]	0.003*** [4.36]
Sales Growth	0.001 [0.81]	0.000 [0.20]	-0.001** [-2.55]	-0.000 [-0.35]	-0.000 [-0.84]
Excess Return	0.015 [0.80]	-0.038*** [-2.79]	-0.011 [-1.46]	-0.030*** [-4.39]	-0.035*** [-5.05]
Skewness	0.001 [0.64]	0.001 [1.17]	0.001*** [2.81]	0.001** [2.16]	-0.001 [-1.40]
Volatility	-0.016 [-1.11]	0.036*** [3.59]	-0.002 [-0.31]	0.014*** [2.68]	0.026*** [4.67]
Turnover	0.013*** [2.65]	0.002 [0.57]	-0.000 [-0.20]	-0.002 [-1.02]	-0.001 [-0.51]
Lawsuit(t)	0.011*** [3.42]	-0.003 [-1.46]	0.005*** [2.79]	0.002 [1.44]	0.004*** [2.68]
Observations	74,242	74,242	74,242	74,242	74,242
R-squared	0.306	0.142	0.168	0.173	0.117
Firm FE	Y	Y	Y	Y	Y
Circuit-Year FE	Y	Y	Y	Y	Y

Table IA7. Robustness Tests: Litigation Risk and Firm Policies, Including Other Litigation Risk Measures

This table shows the predictability of our litigation risk measure on future firm policies, as robustness tests for Panel A of Table 9. The specification is $Y_{i,t+1} = \beta_0 + \beta_1 \cdot \text{Legal Risk}_{i,t} + \beta_2 \cdot \text{Prob. Pred.} + \beta_3 \cdot \text{Lawsuit} + X_{i,t} \cdot \Gamma + \text{FEs} + \varepsilon_{i,t+1}$. *Legal Risk* is the number of litigious words with negative connotation in a firm's 10-K filing scaled by the 10-K file size. *Prob. Pred.* is the predicted value using the KS model (Model 3 of their Table 7) to predict a lawsuit in year t+1. *X* is the vector of control variables (corresponds to those in Table 7 or 8) and Γ is the vector of the corresponding coefficients. *FEs* stands for various fixed effects as indicated in the bottom rows. Standard errors are clustered at the firm level. The sample period is 2000-2022. Variable definitions are in Appendix A. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Settl/Assets	(2) Fine/Assets	(3) Cash/Assets	(4) Capex/Assets	(5) RD/Assets	(6) Acq/Assets
Legal Risk	0.007*** [14.18]	0.041*** [5.26]	0.043*** [3.07]	-0.009*** [-3.23]	-0.019*** [-3.32]	-0.013*** [-3.09]
Prob. Pred.	0.001 [0.80]	0.012 [0.76]	0.256*** [5.59]	-0.006 [-0.51]	-0.123*** [-4.64]	-0.021* [-1.75]
Lawsuit	0.000*** [3.02]	0.001 [0.69]	-0.001 [-0.55]	-0.001** [-2.39]	0.001** [2.16]	-0.000 [-0.67]
Observations	62,930	63,845	67,504	68,812	68,812	68,812
R-squared	0.217	0.228	0.831	0.718	0.835	0.255
Controls	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Circuit-Year FE	Y	Y	Y	Y	Y	Y