How Expensive Is This Suit?
An Analysis of Corporate Litigation Settlements and Brand Value

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Abstract

Two recent corporate trends include a rise in litigation and companies' increased emphasis on branding. This paper examines whether there is a relationship between the two phenomena by analyzing corporate litigation outcomes and brand value. Specifically, I examine law suits resulting in a settlement in order to determine whether a company's brand value impacts the settlement amount. I do not find evidence of a relationship between a company's brand value and the settlement value. Further research is needed in order to more conclusively determine whether a company's brand value and the resulting settlement are related.

JEL classification: K40, K41

Keywords: Corporate Law, Litigation, Reputational Loss, Brand Value

Introduction

The corporate environment has become increasingly litigious in recent years. In the past decade, the number of corporate law suits has increased more than 50%, and corporate litigation costs have more than doubled. To provide a snapshot of the tremendous costs associated with litigation, securities class action settlements alone have increased from $150 million in 1997 to $9.7 billion in 2005 (Matteo & Ferris, 2017).

The rise in corporate litigation is important because of the consequences on business functioning. Productivity falls because managers must divert their attention away from daily operations and toward legal matters. Corporations also incur substantial out-of-pocket legal costs because the average litigation insurance limit for publicly traded firms rarely covers the actual legal expenses incurred. In fact, the average settlement amount for securities class action law suits from 1996 to 2006 was $56.4 million, which greatly exceeds the average insurance limit of $20 million (Arena & Julio, 2015). Additional indirect costs of litigation are equally as important and include increased investor uncertainty, a decline in firm prestige, and lost customers and suppliers (Karpoff & Lott, 1993).

In addition to the rise in corporate litigation, another recent trend involves companies' increased emphasis on branding. That trend has largely been driven by a shift in consumer composition. Specifically, Millennials eclipsed Baby Boomers as the largest generation in 2016, and Millennials are approaching their peak consumption years ("Generations Change How Spending is Trending," 2016). Because Millennials' spending habits are more influenced by a company's brand and its values, businesses have allocated more time and resources toward brand development. Companies believe that a socially conscious approach to branding will resonate with younger consumers and translate into corporate growth.

Although the rise in corporate litigation and increased emphasis on branding are distinct trends, Cohen and Gurun (2018) suggest that corporate litigation outcomes and branding may be related. The authors examine whether firms attempt to influence the outcome of law suits by increasing local advertising spending. The results indicate that upon being sued, firms increase advertising spending in the jurisdiction the case is tried in by 23%; after the trial, advertising spending declines. Because the authors only examine patent cases, which involve a jury, the results suggest that the increase in advertising spending is an attempt to influence jurors' perception of the company. That explanation is closely related to the idea that consumers respond to a company based on how they think and feel about its brand. Thus, there may be a relationship between a company's brand and the outcome of corporate law suits.

This paper investigates whether there is evidence of a relationship between a company's brand value and corporate litigation outcomes. Specifically, I examine law suits involving a settlement in order to determine whether a company's brand value impacts the settlement amount when the said company is a defendant in the law suit.

Literature Review

Litigation and Reputational Loss

Karpoff and Lott's (1993) seminal paper provides the foundation for the research on corporate litigation outcomes and reputational loss. The researchers examine cases of alleged and actual corporate fraud and find that only 6.5% of the reputational loss, as measured by a change in common stock value, is due to court-imposed costs. Similarly, Karpoff, Lee, and Martin (2008) examine firms targeted by the SEC for financial misrepresentation and find that the reputational penalty, as measured by a decline in the present value of future cash flows, exceeds the legal penalty by more than 7.5 times. Thus, there is evidence of a loss, as demonstrated by a

decline in the company's stock price or a decrease in the value of future cash flows, that far exceeds the actual legal expenses incurred during litigation; Karpoff and Lott attribute the loss not explained by legal expenses to reputational loss.

Haslem, Hutton, and Hoffmann Smith (2017) reaffirm that explanation by examining a sample of law suits in U.S. Federal District courts. They show that current and future litigation costs explain only 4% of a company's change in market value following the announcement of a litigious event for the time frame spanning ten days before the announcement to one day after the announcement. Similarly, Armour, Mayer, and Polo (2017) examine a sample of litigious events involving United Kingdom firms and find that stock price reactions are, on average, 9 times larger than the financial penalties imposed by the Financial Services Authority, the judicial body responsible for regulating the financial services industry in the U.K. from 2000 to 2013. Like most of the literature, Armour et al. (2017) examine stock price reactions spanning the time period one day before the litigation announcement and one day after the litigation announcement. Overall, the findings show that reputational impacts are highly negative and more extreme than directly imposed penalties, thus highlighting the importance of a firm's reputational value.

The papers discussed above employ the direct method, which is an empirical technique that Karpoff and Lott (1993) pioneered. The direct method states that when "stakeholders become aware of a firm's misconduct, any market value loss that cannot be explained by measurable costs and penalties can be attributed to reputational damage."[1] The direct method remains the predominant method used in the existing research, but it has limitations. Specifically, the direct method is limited in its ability to account for costs beyond actual litigation expenses

[1] Haslem et al. (2017) p.324

(e.g., the threat of follow-up litigation, disruption to the firm's operations, etc.), and it will not be accurate if the firm's market value loss is not concentrated around the announcement date.

The second primary empirical method used in the literature is the indirect method. The indirect method assumes that reputational damage can be observed based on stakeholders' actions and firm outcomes following the law suit. Thus, this approach does not rely on the precise date stakeholders become aware of the firm's misconduct nor does it quantify reputational loss. Under this method, indications of reputational loss include events such as CEO termination, an improvement in corporate governance by increasing the number of outside directors on the board, or stakeholders imposing disciplinary measures on the firm. Additional events that indicate reputational loss include the divestiture of a business unit, the termination or suspension of business dealings via lost customer relationships, or the announcement of remedial strategies (e.g., retraining employees, instituting new audit and accounting procedures, etc.) (Alexander, 1999).

Additional papers focus on specific examples of reputational loss. Johnson, Xie, and Yi (2013) and Alexander (1999) examine reputational loss in the form of customer reputational sanction in product markets. The results show that customer reputational sanction results in a decline in the firm's operating performance through increased selling costs, such as advertising expenses. That negative consequence occurs when firms are dishonest, and customers decrease demand for the firm's products upon learning about the dishonest behavior. Meanwhile, Karpoff, Lott, and Wehrly (2005) examine environmental violations and find that reputational costs are large for false advertising, product recalls, lack of safety, deceptive bidding practices, punitive damages law suits, defense procurement fraud, and financial misrepresentation.

Another form of reputational loss involves the change in CEO reputation after a litigious event. Liu, Aharony, Richardson, and Yawson (2016) find that changes in CEO reputation, as measured primarily by reemployment prospects, differ significantly depending on the nature of the law suit. Liu et al. (2016) also find that firm reputational penalties are imposed after law suits filed by contractually related parties (e.g., intellectual property or anti-trust law suits) but not following politically sensitive environmental law suits. Their findings support Karpoff, Lott, and Wehrly's (2005) hypothesis that only parties with pre-existing contractual relationships with the firm they sue have the power to impose reputational sanctions; for instance, only customers or suppliers in a contractual relationship can increase the sued firm's future operational costs. On the contrary, plaintiffs in environmental law suits are often groups without the ability to directly punish the defendant; thus, they are unable to affect firm reputation. The relationship between reputational loss and the legal matter the law suit pertains to suggests that certain legal categories are more closely linked with a company's reputation. By extension, it is possible that certain legal categories are more closely linked with brand value.

Overall, the main findings regarding corporate litigation and reputational loss are consistent across the literature. The key ideas are listed below:

- Press reports of litigation correspond with statistically significant losses in equity value
- There are negative cumulative abnormal returns[2] (CARs) over a (-1, 1) event window surrounding litigation filing announcements
- Reputational impacts are highly negative and more extreme than directly imposed penalties

[2] The sum of the difference between expected returns and actual returns

This paper contributes to the existing research by expanding the scope of reputation to include brand value and by examining firm reputation and corporate litigation outcomes during a long-term event window as opposed to the traditional (-1, 1) time frame.

Brand Value

There are three primary ways to measure brand value: customer mindset, company based/product market, and financial outcomes. Customer mindset measures assess brand value by measuring what customers think and feel about a brand. The company based/product market approach measures brand equity as the incremental revenue that the brand earns over the revenue it would earn if it were sold without the brand name (Ailawadi, Lehmann, & Neslin, 2002). In economic terms, brand equity is the degree of "market inefficiency" that the company is able to capture with its brand (Keller & Lehmann, 2006). Third, the financial outcomes method views a company's brand as an asset that generates value in the financial market. This method relies on the price the company's brand can demand and expectations of the discounted value of future cash flows (Keller & Lehmann, 2006). The literature indicates that there is no perfect measure of brand value; rather, the most appropriate measure is situation dependent. To measure brand value, this paper uses the Interbrand 100 Best Global Brands Ranking, an annual ranking of the world's most valuable 100 brands. The Interbrand ranking is primarily a combination of the customer mindset approach and financial outcomes approach.

Theoretical Framework

Previous research is largely grounded in the Klein-Leffler (1981) Model. The model examines the nongovernmental repeat-purchase contract-enforcement mechanism, with a focus on contracts between producers and consumers regarding product quality. The model specifies

conditions under which a firm will uphold the contract and provide high-quality goods or cheat and provide low-quality goods. The model assumptions are listed below (Klein & Leffler, 1981):

1. Contracts are not enforceable by a third party. Transactors rely solely on the threat of termination of the business relationship for enforcement of the contract.
2. The identity of firms is known by consumers, and consumers voluntarily choose who to deal with and must pay for the goods they receive.
3. Managers of firms are wealth maximizing and place no value on honesty.
4. Consumers costlessly communicate among each another.

Because consumers costlessly communicate among each other about the quality of goods, all consumers in period $t+1$ will know if a firm supplied a good below the contracted quality during period t. Meanwhile, firms can increase profits by producing the minimum quality output and deceptively selling it as a higher quality product when the market price that consumers will pay for high quality output exceeds the cost of producing minimum quality output. Firms will have incentives to produce high quality products if consumers reward high quality production and punish low quality production. If a consumer receives a product of a quality at least as high as implicitly contracted for, he will continue to purchase from those sellers. If the quality is less than contracted for, all consumers will stop purchasing from the cheating firm. Cheating behavior will be prevented only if firms earn a continuous stream of income that will be lost if low-quality goods are produced.

Based on the Klein-Leffler Model, the question of whether a company's brand value affects the settlement value of a law suit can be framed in the context of a contractual relationship between the company sued (i.e., the defendant) and the company's consumers. A company with a higher brand value may believe in its ability to win in court, should the case

proceed to trial, by leveraging consumers' favorable perception of its brand[3]. Thus, the company may be less likely to settle for lower amounts. On the contrary, a company with a lower brand value may anticipate that, if the case proceeds to trial, its likelihood of winning in court is low. Therefore, the company with a lower brand value may be more likely to settle for lower amounts in order to avoid additional legal expenses and the potential reputational loss that may result from going to court. Meanwhile, the company with a higher brand value may believe in its brand's strength and subsequent ability to withstand possible trial-related damage.

Empirical Framework

I use a fixed effects model to estimate whether a company's brand value affects the settlement amount in a law suit. The data is in the form of panel data, so a fixed effects model is the most appropriate framework to use in order to control for omitted variables that vary across companies. I include a year fixed effect in order to control for changes in legal precedent over time that may impact litigation outcomes and thus settlement values. Equation 1 shows the regression model.

Equation 1. Fixed Effects Model: $\boldsymbol{Brand\ Value_{it_0}, Market\ Capitalization_{iT}}$[4]

$$settlementvalue_{iT} = \beta_0 + \beta_1 brandvalue_{it_0} + \beta_2 percentchangeinbrandvalue_{iT} + \beta_3 lawsuitlength_{iT} + \beta_4 marketcapitalization_{iT} + \beta_5 brandvalue_{it_0} * lawsuitlength_{iT} + \alpha legalcategory_i + \delta lawsuitendyear_T + u_{it}$$

[3] A consumer's favorable perception of a company's brand arises due to experiences with the company that align with his or her expectations (e.g., the company sells at the expected quality level or the company launches a marketing campaign in line with the company's values). Thus, the implicit contract between the consumer and the company is upheld, and consumers contain to maintain their favorable impressions of the company.

[4] t_0 denotes the year the law suit started. T denotes the year the law suit ended.

I include two variables related to my primary variable of interest: brand value. First, I include the company's brand value in the year the law suit was initiated. I expect that the company's starting brand value may influence the monetary amount the company is sued for, which may then influence the settlement value. Next, I include the company's percent change in brand value over the period from the year the law suit was initiated to the year the law suit ended. I include a percentage measure of brand value because it is a normalized metric that allows for more meaningful comparison across companies.

Next, I include the length of the law suit. I expect case length to affect the extent of publicity the law suit receives (e.g., media coverage) and thus account for a potential risk to brand value. It is also possible that more protracted law suits affect parties' willingness to negotiate, which may then impact the settlement amount. Specifically, I expect firms to be more likely to settle quickly if the law suit is longer and is thus more likely to receive more publicity. If firms are motivated to settle more quickly in order to prevent possible risk to the brand, then I expect that settlement values may be lower.

I also include the company's market capitalization at the end of the law suit. I expect that the company's value when the case concludes will impact the amount that it settles for. In fact, Matteo & Ferris (2017) find that companies with higher market capitalization are more likely to settle with higher payments to plaintiffs. I use market capitalization, as opposed to brand value, at the end of the law suit in order to avoid perfect multicollinearity.

I include an interaction between the company's brand value in the year the law suit started and the length of the law suit. I expect that the impact of case length on the resulting settlement may vary depending on the company's brand value. Specifically, a company with a higher brand value may be less affected by a longer case if the company believes that the brand

is strong enough to withstand potential threats associated with a prolonged suit. Alternatively, it is also possible that a company with a higher brand value may be more affected by a longer case if the company's priority is to protect the brand from future litigation-related risks.

Finally, I include a fixed effect for the legal category the law suit pertains to. Eisenberg and Lanvers (2009) found that certain categories, like tort[5], are generally more likely to result in a settlement. By extension, I expect certain case types, such as those that involve intentional wrongdoing, to affect not only the likelihood of settlement, but the settlement value as well.

I considered including variables for the location of the district court that had jurisdiction over the case, the type of plaintiff involved in the case, and the company's industry. However, those variables are highly correlated with the legal category of the law suit, so I omit them in order to avoid accounting for the same underlying idea multiple times.

Equation 2. Fixed Effects Model: $\boldsymbol{Brand\ Value_{iT}, Market\ Capitalization_{it_0}}$

$$settlementvalue_{iT} = \beta_0 + \beta_1 brandvalue_{iT} + \beta_2 percentchangeinbrandvalue_{iT} + \beta_3 lawsuitlength_{iT} + \beta_4 marketcapitalization_{it_0} + \beta_5 brandvalue_{iT} * lawsuitlength_{iT} + \alpha legalcategory_i + \delta lawsuitendyear_T + u_{it}$$

Equation 2 is identical to Equation 1 except for the time subscript on the brand value and market capitalization variables. In Equation 2, I use the company's brand value at the *end* of the law suit and market capitalization at the *beginning* of the law suit, as opposed to the company's brand value at the *beginning* of the law suit and market capitalization at the *end* of the law suit,

[5] Tort includes all negligence cases and intentional wrongs that result in harm.

as shown in Equation 1. Comparing the results of Equation 1 and Equation 2 may allow for insight into whether market capitalization or brand value at the end of a law suit has a more substantial impact on the resulting settlement.

Data

Data Set

This paper uses the Audit Analytics: Legal Case and Legal Parties data set. The data set sources its information from legal disclosures filed with the SEC and includes information about legal actions taken against publicly traded firms in federal courthouses from 1974 to 2018. Each row in the data is a law suit that includes general case information[6] and financial data.[7] To source information about brand value, I use the Interbrand 100 Best Global Brands ranking. The ranking has been published annually from 2000 to 2018 and includes the brand value of the one hundred global companies with the highest brand value in that given year.

To construct the data set, I search the Audit Analytics database for cases involving only companies for which Interbrand has published a brand value. I restrict the data to companies in the Interbrand index because my goal is to determine whether a company's brand value affects the settlement amount in a law suit. Thus, it is necessary that I have a measure of brand value for each company; if a company is not in the Interbrand index, then I do not have a measure of brand value and thus I exclude law suits involving the given company. Other companies with a known brand value are excluded from the data set because the Audit Analytics database does not show any cases affiliated with the company. Next, I restrict the case start date range from 2000 to 2018

[6] Variables include the case name, docket number, plaintiff, defendant, company involved in the law suit, company industry, filing date, termination date, settlement amount, court location, nature of the law suit, and judge information.

[7] Variables include income statement, balance sheet, and statement of cash flow information; number of shares outstanding; share price; and market capitalization, all matched by fiscal year, quarter, and date closest to the law suit.

because the Interbrand ranking is only available those years. This initial search results in 4,615 law suits.

I then delete cases that are still pending, which results in 2,591 cases involving 65 unique companies. Because I examine whether a company's brand value affects the settlement amount, I filter the data to only include law suits with a known settlement value. This results in 276 cases for 43 unique companies. In order to simplify the analysis, I then filter the data to include only defendants. The final data set includes 217 cases for 35 unique companies.

Next, I add variables for brand value. I use a dummy variable for the year the case begins and a dummy variable for the year the case ends, and I match the brand value from Interbrand for those respective years. I also calculate the percent change in brand value for the period in which the law suit was active. I then add a variable for time elapsed (rounded to the nearest month) by taking the difference between the law suit's start date and end date.

I fill in missing values for each company's market capitalization by using publicly available information via Google search. In the Audit Analytics data set, market capitalization on the start date and end date of the law suit is matched to the date of the company's most recent quarterly filing, which contains information about the most up-to-date number of shares outstanding. Finally, I convert all nominal values to real 2000 dollars using average annual CPI data.

A limitation of the data is that Audit Analytics does not include information about cases tried in state courts, so such cases cannot be considered in my analysis. The key difference between federal and state courts involves the types of cases that each court is authorized to hear, which is determined by whether the case involves federal or state law. Otherwise, there are no major differences between the legal processes of federal and state courts. Hence, I do not know

of an ex-ante reason to expect that this will bias the results. Additionally, Audit Analytics does not provide information about private companies, but that should not present a major limitation because I expect public companies to provide comparable information about both brand value and corporate litigation outcomes. Next, the Interbrand companies are well-established global firms, so the companies in the data may have key differences from those not on the Interbrand ranking. Finally, my analysis is significantly limited by the size of the data set. Due to the limited number of cases in the sample, the results should be interpreted with caution.

Summary Statistics

Table 1 shows correlations between brand value, the number of law suits[8], and the percent change in brand value across all years and companies. The correlation reveals a weak negative relationship between the percent change in brand value and the number of law suits, which suggests that an increase in law suits is associated with a slight decrease in brand value in percentage terms. Table A (Appendix) shows the same correlations for each company. The correlations do not show a conclusive trend, which may suggest that the relationship between brand value and the number of law suits is company-dependent. Alternatively, the absence of a pattern may be due to the limited size of the data set.

Table 1. Correlations Between the Number of Law Suits and the Percent Change in Brand Value

Brand Value & Law Suits	Percent Change in Brand Value & Law Suits
-0.0548	-0.1660

[8] This figure includes pending law suits.

Table 2 shows summary statistics for the numerical variables in the data set. Brand value is large because I examine only the one hundred companies with the highest brand value each year from 2000 to 2018. Brand value appears to have increased over time in the data set, as seen by the increase in the average, minimum, and maximum brand value in the year a law suit ended compared to the year the law suit began. The increase in brand value aligns with the trend of companies' increased emphasis on branding. Also note that the standard deviation for brand value is already large in earlier years (as represented by the law suit start year) and is even larger in later years (as represented by the law suit end year). It is possible that the increase in standard deviation is due to the combination of rapid growth in brand value among technology companies and the stagnant or negative growth of companies that have plateaued since the early 2000s.

Table 2. Summary Statistics for Numerical Variables (In Thousands of Dollars)

Variable	Mean	STD	Min	Max	Observations
Case start year brand value ($)	15,849,590	15,079,710	2,532,463	72,674,420	217
Case end year brand value ($)	17,087,600	20,962,830	2,727,354	129,370,600	217
Change in brand value from case start year to case end year (%)	10.0	91.0	-70.8	824.4	217
Settlement value ($)	246,958	760,761	9.6	5,812,052	217
Case start market capitalization ($)	85,169,700	77,178,000	5,776	422,640,000	211
Case end market capitalization ($)	118,388,500	114,443,600	9,737	796,060,000	211
Law suit length (months)	47.9	33.3	0.0	168.0	217

Note: All nominal dollars are converted to real 2000 dollars

Chart A (Appendix) shows a breakdown of the data based on the percentage of cases each company is involved in. The four companies involved in the largest percentage of law suits are financial services companies, and they comprise 54% of the data set. Chart B (Appendix)

shows a breakdown of the data based on the legal category each case pertains to. The most prevalent case categories are securities law and class action law suits, each with 141 cases.[9]

Results and Discussion

Table 3 shows the results for the fixed effects model in equation 1. Columns 1 through 7 show that a company's brand value in the year the law suit was initiated is not significant and neither is a company's percent change in brand value. Likewise, the company's market capitalization at the end of the law suit is not significant across all specifications.

Columns 4 through 7 show that the length of the law suit is statistically significant. The positive coefficients indicate that for each additional month a law suit continues, the settlement value is expected to increase. Thus, the positive coefficients suggest that a longer law suit does not motivate companies to settle for less; contrary to my prediction, a longer law suit may not present a tangible risk to the brand. Specifically, column 7 shows that an increase in case length by one month is expected to increase the settlement value by $3.70 million. For smaller settlements, that effect may be economically meaningful.

Columns 5 through 7 show that the interaction between a company's brand value in the year the law suit started and the length of the law suit is significant. In particular, column 7 shows that the effect of brand value on the settlement amount is diminished as the length of the law suit increases. Similarly, the effect of the length of the law suit on the resulting settlement is diminished as brand value increases. Specifically, the effect of a company's brand value in the year the law suit started on the settlement amount is expected to be $100 less for each additional month that the law suit continues. Likewise, the effect of case length on the settlement amount is

[9] The total number of cases organized by type does not add up to 217 (the size of the sample) because one case may fall under multiple catego

expected to be $100 less for every $1 million increase in a company's brand value. The results suggest that a company with a higher brand value may be less threatened by potential damage to the brand associated with a prolonged law suit (e.g., media coverage), perhaps due to a higher level of confidence in the brand's strength and ability to withstand possible risks.

The legal category fixed effect includes one category that is statistically significant in both columns 6 and 7. Specifically, the multi-district litigation (MDL) category is significant at the 5% level in column 6 ($p = .05$) and column 7 ($p=.036$). MDL occurs when civil actions involving common questions of fact are pending in different districts. In order to efficiently process the pre-trial proceedings for the disparate cases, a judicial panel decides to consolidate then transfer the cases. MDL works well when plaintiffs nation-wide file law suits against the same defendants, alleging the same issues ("Multidistrict Litigation," 2019). If that is the case and there are dozens to hundreds of law suits against the same defendant alleging the same issue, then MDL may be a probable indicator of the company's guilt. Thus, it is possible that MDL is related to settlement value due to the underlying question of guilt.

Table 4 shows the results for the fixed effects model in equation 2. The results are similar to those in Table 3. The primary difference is that law suit length is not significant when the law suit end year fixed effect is added (in column 7), and the interaction term is not significant when the legal category fixed effect is added to the regression (in column 6) and then when both the legal category fixed effect and law suit end year fixed effect are included in the regression (in column 7). Because of the similarity between the results in Table 3 and Table 4, I am unable to conclude whether market capitalization and brand value have differing impacts on the settlement amount.

Table 3. Results: Fixed Effects Regression: $Brand\ Value_{it_0}, Market\ Capitalization_{iT}$

Dependent Variable: Settlement Amount ($mill)							
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Start brand value ($mill)	.0046	.0047	-.0059	-.0089	-.0028	.0021	.0037
	(.0048)	(.0043)	(.0111)	(.0111)	(.0127)	(.0161)	(.0148)
Percent change in brand value		4.790	-114.84	-128.43	-121.35	-104.44	-43.97
		(29.32)	(159.86)	(152.22)	(154.38)	(211.88)	(190.80)
End market capitalization ($mill)			.0017	.0016	.0014	.0018	.0017
			(.0020)	(.0020)	(.0020)	(.0026)	(.0023)
Law suit length (months)				3.26**	5.21***	3.16**	3.70*
				(1.4432)	(1.5594)	(1.5377)	(1.9371)
Start brand value x law suit length					-.0001***	-.0001**	-.0001*
					(.00002)	(.0001)	(.0001)
Constant	174.09**	172.00**	150.68	52.71	-50.65	-303.30	-138483.4
	(74.05)	(66.05)	(101.36)	(116.54)	(129.25)	(421.17)	(454575.3)
Legal category FE?	No	No	No	No	No	Yes	Yes
Law suit end year FE?	No	No	No	No	No	No	Yes
R-squared: within	.0011	.0011	.0114	.0269	.0322	.2499	.3306
R-squared: between	.0043	.0035	.1154	.1489	.1494	.0661	.0116
R-squared: overall	.0001	.0002	.0361	.0645	.0733	.2444	.2637
N	217	217	211	211	211	211	211

Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 4. Results: Fixed Effects Regression: $Brand\ Value_{iT}, Market\ Capitalization_{it_0}$

Dependent Variable: Settlement Amount ($mill)							
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
End brand value ($mill)	.0007	.0012	-.00002	.0008	.0045	.0077	.0086
	(.0006)	(.0001)	(.0033)	(.0032)	(.0029)	(.0051)	(.0054)
Percent change in brand value		-15.11	-5.65	-20.60	32.02	38.54	37.99
		(43.34)	(44.25)	(41.48)	(48.4)	(64.04)	(73.18)
Start market capitalization ($mill)			.0006	-.00003	.0001	-.0002	-.0008
			(.0016)	(.0015)	(.0014)	(.0017)	(.0021)
Law suit length (months)				3.36**	5.41***	2.71*	3.36
				1.40	(1.66)	(1.43)	(2.16)
End brand value x law suit length					-.0001***	-.0001	-.0001
					(.00003)	(.0001)	(.0001)
Constant	234.74***	228.31***	199.31**	80.23	-9.99	-263.47	-203841
	(10.27)	(12.03)	(87.07)	(129.93)	(133.28)	(341.8)	(422286.6)
Law suit category FE?	No	No	No	No	No	Yes	Yes
Law suit end year FE?	No	No	No	No	No	No	Yes
R-squared: within	.0001	.0003	.0010	.0174	.0233	.2334	.3200
R-squared: between	.0000	.0079	.0310	.0394	.0476	.0143	.0014
R-squared: overall	.0016	.0003	.0066	.0364	.0475	.1983	.2146
N	217	217	211	211	211	211	211

Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Suggestions for Future Research

The primary limitation of this paper is the limited size of the data set. I attempted to increase the sample size by manually searching 60 law suits in the original sample of 2,591 cases. However, the search did not yield settlement information for every case. Even when settlement information was available, it only indicated whether a settlement occurred rather than the settlement amount. Thus, I was limited to examining only 217 law suits. Consequently, my findings may not be generalizable. It is also possible that a relationship exists between brand value and settlement amount, but it is not reflected in the results. Using a larger data set is therefore the most important consideration for future research. Each of the following recommendations are contingent on using a more comprehensive data set.

To more accurately examine the relationship between brand value and settlement amounts, future research should include a proxy for guilt in the regression. For instance, if the same company is sued unusually frequently within a given time frame and a high percentage of those law suits involve similar allegations, then that could be a potential indicator of guilt. Guilt is an important factor to account for because I expect that guilty companies may be more likely to settle for lower amounts. I considered including this variable in the analysis, but I was unable to create an adequate proxy due to the limited number of law suits for each company.

Next, future research should more closely examine the relative impacts of brand value and market capitalization on settlement values. This can be accomplished by regressing market capitalization variables on settlement value in one model, regressing brand value variables on settlement value in another model, and then regressing a combination of both market capitalization and brand value variables on settlement value in a third model. If there are differing effects of brand value and market capitalization on settlement value, then that may

suggest that there is a fundamental difference between the two measures. That may be notable from a practical perspective because market capitalization is a measure that is more easily accessible than brand value. Thus, it could be more meaningful for company management and investors if market capitalization has a larger impact on settlements.

Future research should also examine the relationship between the location of the district court that has jurisdiction over the case and general corporate litigation outcomes. As discussed in the introduction, Cohen and Gurun (2018) examine whether firms attempt to influence the outcome of law suits by increasing local advertising spending. The researchers focus on cases in the Texas Eastern District Court and find evidence of companies strategically increasing local advertising spending upon being sued. In order to expand on Cohen and Gurun's (2018) findings, future research should analyze whether companies strategically aim to have their cases heard in specific district court locations. That can be accomplished by comparing case outcomes (e.g., win rate versus loss rate, settlement rate, settlement value, etc.) for each company in each district court that they are sued in. If there is a pattern that reveals that a company's case outcomes vary significantly based on court location, then that may warrant further examination into a possible mechanism through which companies attempt to influence litigation outcomes.

Conclusion

The corporate environment has become increasingly litigious in recent years. The rise in litigation is important because of its consequences on business functioning, which include reduced productivity and significant out-of-pocket legal expenses. Another trend within the same time period involves companies' increased emphasis on branding, a change that has largely been driven by a shift in consumer composition.

Although the rise in corporate litigation and companies' increased emphasis on branding are distinct trends, Cohen and Gurun (2018) suggest that corporate litigation outcomes and branding may be related. Thus, I examine whether there is evidence of a relationship between a company's brand value and corporate litigation outcomes by analyzing the impact of brand value on settlement amounts.

I use a fixed effects model to examine whether a company's brand value impacts the settlement amount in a law suit. The results show that a company's brand value and percent change in brand value during the duration of the law suit are not statistically significant. However, the length of the law suit and the interaction between brand value and case length are statistically significant. Moreover, multi-district litigation is a legal category that is statistically significant, perhaps due to the underlying question of guilt that may be related to such cases.

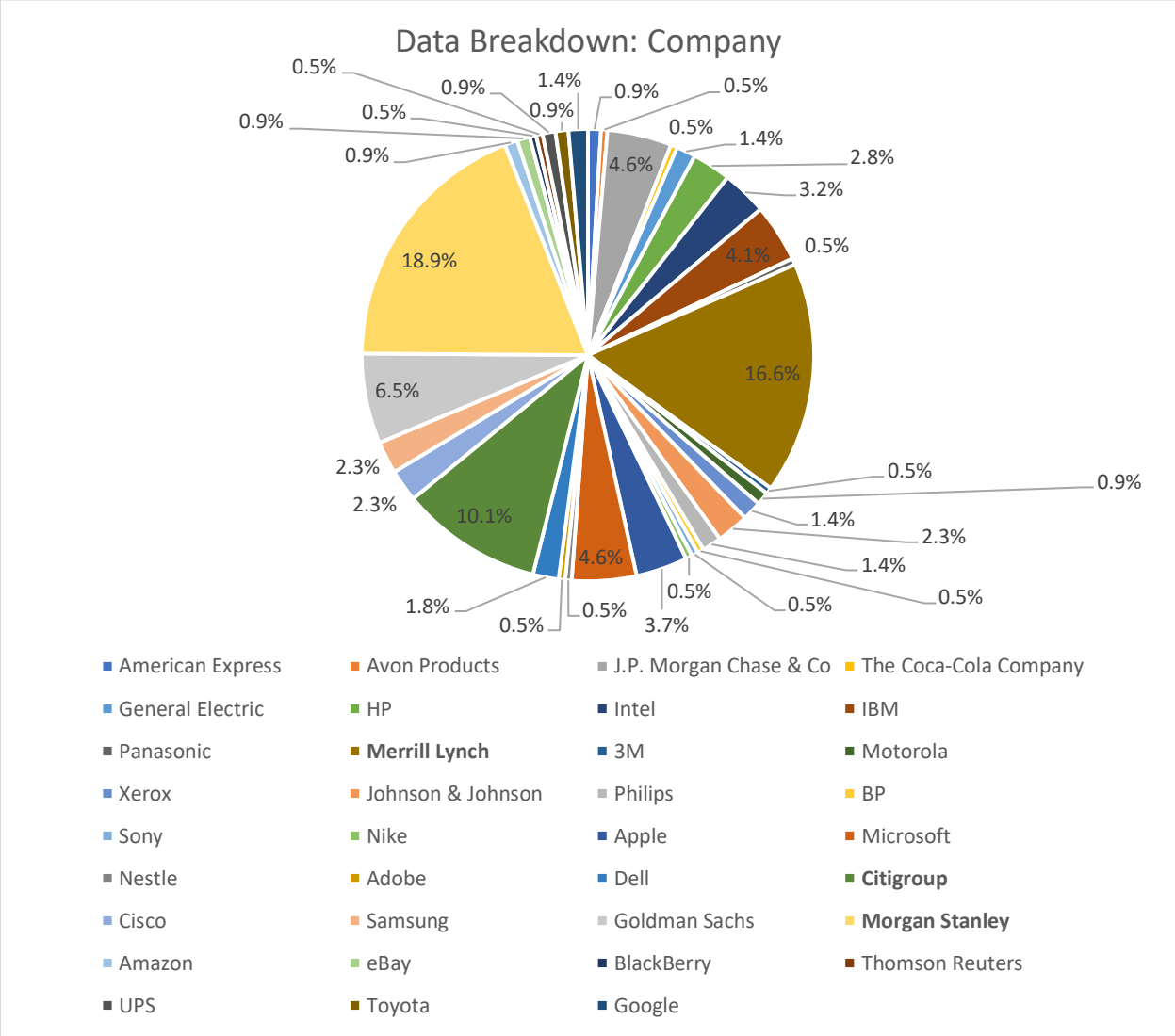
Overall, this paper contributes to the existing research by expanding the scope of reputation to include brand value and by examining firm reputation and corporate litigation outcomes during a long-term event window as opposed to the traditional (-1, 1) time frame. However, further research is needed in order to more conclusively determine the relationship between brand value and corporate litigation outcomes. Such knowledge is important because it will improve our understanding of legal processes and outcomes in today's increasingly litigious and brand-oriented corporate environment.

Appendix

Table A. Correlations Between Brand Value, Number of Law Suits, and Change in Brand Value by Company

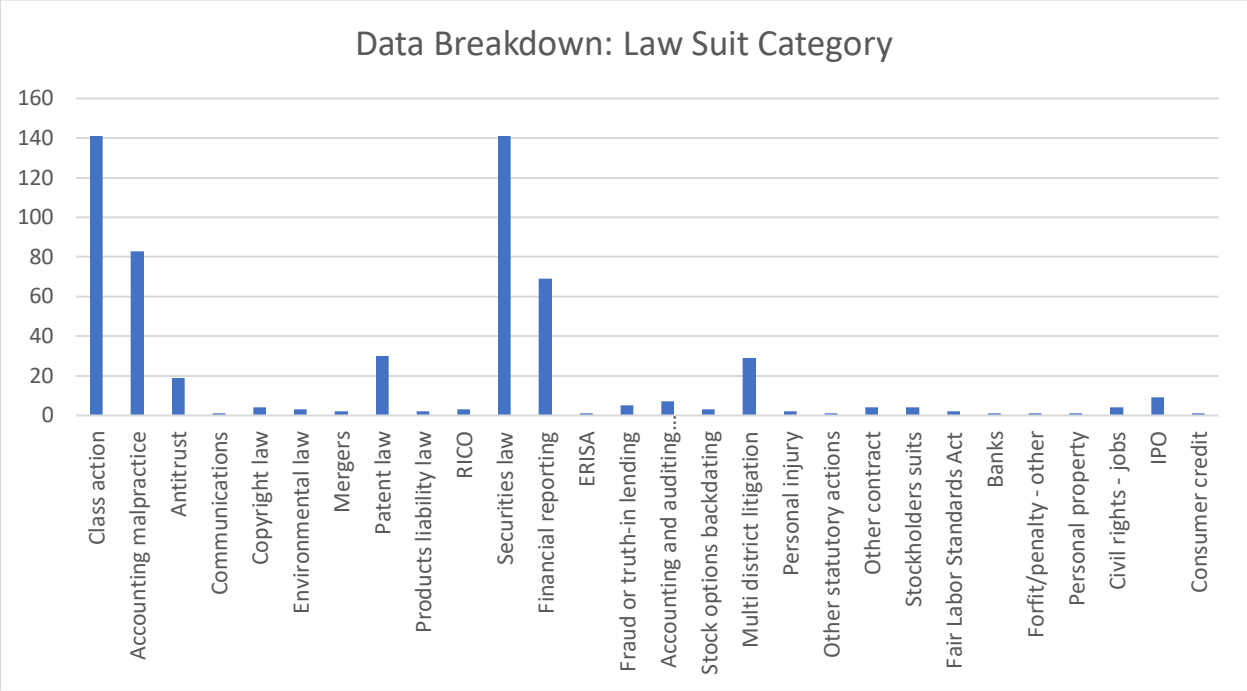
Company	Brand Value & Law Suits	Change in Brand Value ($mill) & Law Suits	Change in Brand Value (%) & Law Suits
Amazon	-0.1726	-0.1853	-0.3871
American Express	0.2244	0.2677	0.3061
Apple	-0.4195	-0.3277	0.0383
Cisco	-0.1875	-0.0902	-0.1091
Citi	0.2371	-0.3702	-0.3585
Dell	0.271	-0.2297	0.0834
eBay	-0.0701	0.4918	0.5695
General Electric	0.0457	-0.2328	-0.1473
Goldman Sachs	0.0358	-0.3094	-0.3096
Google	-0.1841	0.1503	0.0082
HP	0.257	0.1726	0.1289
IBM	-0.1861	0.2794	0.2410
Intel	-0.0645	0.0482	0.0193
J.P. Morgan Chase & Co	-0.4918	-0.6083	-0.5818
Johnson & Johnson	-0.3993	-0.2918	-0.0975
Philips	-0.4092	-0.1641	-0.2069
Merrill Lynch	-0.1677	-0.7074	-0.6597
Microsoft	-0.0551	-0.1664	-0.1590
Morgan Stanley	0.3038	-0.5176	-0.5342
Motorola	-0.509	-0.263	-0.2808
Samsung	-0.2813	-0.2595	-0.0412
Toyota	0.0514	-0.1087	-0.1694
UPS	-0.1138	-0.0095	0.1034
Xerox	0.1383	0.0518	-0.0035

Chart A. Data Breakdown by Company



Note: Bold font indicates the top 3 companies represented in the data set

Chart B. Data Breakdown by Law Suit Category



References

Ailawadi, K. L., Lehmann, D. R., & Neslin, S. A. (2002). A Product-Market-Based Measure of Brand Equity. Retrieved November 25, 2018, from Marketing Science Institute website: https://www.msi.orghttps://www.msi.org/reports/a-product-market-based-measure-of-brand-equity

Alexander, C. R. (1999). On the Nature of the Reputational Penalty for Corporate Crime: Evidence. *The Journal of Law & Economics*, *42*(S1), 489–526. https://doi.org/10.1086/467433

Arena, M., & Julio, B. (2015). The Effects of Securities Class Action Litigation on Corporate Liquidity and Investment Policy. *Journal of Financial and Quantitative Analysis*, *50*(1–2), 251–275. https://doi.org/10.1017/S0022109015000010

Armour, J., Mayer, C., & Polo, A. (2017). Regulatory Sanctions and Reputational Damage in Financial Markets. *Journal of Financial and Quantitative Analysis*, *52*(4), 1429–1448. https://doi.org/10.1017/S0022109017000461

Cohen, L. H., & Gurun, U. G. (2018). *Buying the Verdict* (Working Paper No. 24542). https://doi.org/10.3386/w24542

Eisenberg, T., & Lanvers, C. (2009). What is the Settlement Rate and Why Should We Care? *Cornell Law Faculty Publications*, (Paper 203).

Generations Change How Spending is Trending. (2016). Retrieved September 25, 2018, from Morgan Stanley website: https://www.morganstanley.com/ideas/millennial-boomer-spending

Haslem, B., Hutton, I., & Hoffmann Smith, A. (2017). How Much Do Corporate Defendants Really Lose? A New Verdict on the Reputation Loss Induced by Corporate Litigation.

Retrieved September 25, 2018, from https://onlinelibrary.wiley.com/doi/abs/10.1111/fima.12171

Johnson, W., Xie, W., & Yi, S. (2013). Corporate fraud and the value of reputations in the product market. Retrieved September 25, 2018, from https://www.sciencedirect.com/science/article/pii/S0929119913000953

Karpoff, J. M., Lee, D. S., & Martin, G. S. (2008). The Cost to Firms of Cooking the Books. *Journal of Financial and Quantitative Analysis*, *43*(3), 581–611. https://doi.org/10.1017/S0022109000004221

Karpoff, J. M., Lott, J., John R., & Wehrly, E. W. (2005). The Reputational Penalties for Environmental Violations: Empirical Evidence. *The Journal of Law and Economics*, *48*(2), 653–675. https://doi.org/10.1086/430806

Karpoff, J. M., & Lott, J. R. (1993). The Reputational Penalty Firms Bear from Committing Criminal Fraud. *The Journal of Law & Economics*, *36*(2), 757–802.

Keller, K. L., & Lehmann, D. R. (2006). Brands and branding: research findings and future priorities. *Marketing Science*, *25*(6), 740-. Retrieved from General Reference Center GOLD.

Klein, B., & Leffler, K. B. (1981). The Role of Market Forces in Assuring Contractual Performance. *Journal of Political Economy*, *89*(4), 615–641.

Liu, C., Aharony, J., Richardson, G., & Yawson, A. (2016). Corporate litigation and changes in CEO reputation: Guidance from U.S. Federal Court law suits. *Journal of Contemporary Accounting & Economics*, *12*(1), 15–34. https://doi.org/10.1016/j.jcae.2016.02.003

Matteo, A., & Ferris, S. (2017). A survey of litigation in corporate finance. *Managerial Finance; Patrington*, *43*(1), 4–18. http://dx.doi.org/10.1108/MF-07-2016-0199

Multidistrict Litigation. (2019). Retrieved March 26, 2019, from LII / Legal Information Institute website: https://www.law.cornell.edu/wex/multidistrict_litigation