Changing Corporate Names as Brand Name Investments

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December 01 2008

Abstract

This paper expects that brand adoption type of name changes (adopting the firm's well-recognized brand name as the new corporate name) is related to the economic nature of name change. Furthermore, this paper expects that brand adoption name change provides a valuable information role to the firm. This paper documents that over majority of the brand adoption form of name changes is economically motivated with a significant increase in investments and an improvement in profitability. Controlling for the competing information producers and economic activities accompanying name changes, this paper documents a lower cost of equity capital and a higher bond rating after the adoption of brand name. The results are in contrast to the cosmetic view of name changes that name changes do no accompany real firm changes.

JEL classification: D82; G30; G39; L14

Keywords: brand name capital; intangible assets; implied cost of capital; financial misrepresentation; earning forecast revision

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1. Introduction

Brand name capital may have an intrinsic value, in addition to being vehicle that may incorporate information about the firm's actions. Kreps (1990) puts forward the idea of the firm's name as the bearer of reputation in the context of moral hazard. Tadelis (1999) explores the same idea in the context of adverse selection. Both authors show that corporate names always have a value. [1] Hall (2001) shows that, in modern economies, a significant part of a firm value may reflect its intangible assets. In contrast, the dynamics of changes in the value of plant and property fail to explain the movements in stock-market values.

This paper views corporate names as brand names which, like physical and financial assets, require investment to create, or enhance. In this way, we can view the large explicit and implicit expenditures on the name change as investments in brand name capital.[2] As such, a name change announcement is similar to an announcement in increased capital investment spendings (e.g., McConnell and Muscarella (1985)). The average stock price reaction to name change announcement is positive when the expected values of brand name capital (They include not only the future economic rents achieved by brand name but also the brand's potential of the reduction of contracting costs) are greater than the costs of name changes, and vice versa. This view of name change is in contrast to the cosmetic view of name change that managers time name changes to take advantages of investor sentiment without real business structure/profitability changes (e.g., Cooper, Dimitrov, and Rau (2001), Cooper, Khorana, Osobov, Patel, and Rau (2005), and Cooper, Gulen, and Rau (2005)).

The primary innovation of the paper is the construction of a sample of new names likely to carry brand name capital component and their comparisons. This paper identifies 890 name change firms from 1980 to 2000, including 697 brand adoption type of name changes and 193 radical type of name changes from press reports and

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[1] The unreported cases from our sample, available from the author upon request, suggest that the old/new corporate names can be viewed as a tradeable asset sold/purchased along with physical assets.

[2] Robinson and Wu (2005), Horsky and Swyngedouw (1987), and Karpoff and Rankine (1994) show examples of total direct costs of name changes. The direct costs are the expenses of hiring name development and corporate identity consultants and the large scale marketing and advertising campaigns to introduce the new name. The total direct costs of name changes can range in the tens of millions of dollars during the 1979-1987 periods. The magnitude of the direct costs of name change is comparable to the mean $10.6 (millions) advertising expenditures, $18.3 (millions) R&D cost, and $62.7 (millions) capital expenditures during the same period for all COMPUSTAT firms. Since many firms have advertising expenses and R&D expense equal to zero, focusing only on firms with positive numbers, the magnitude of the direct costs of name change is still comparable to the mean $12.4 (millions) advertising expenditures, and $26.4 (millions) R&D cost.

SEC filings. Brand adoption name changes refer to changing corporate name to one of its well-recognized products, subsidiaries, or divisions. Radical name changes refer to new corporate name that bears no semantic link to the firm's prior name and lacks prior association between the firms and the new name.

This paper expects that the form of new name decision (brand adoption versus radical change) is closely related to the economic nature of name change (real versus cosmetic). Under information asymmetry, the models by Wernerfelt (1988), Cabral (2000 and 2007), and Choi (1998) suggest that brand adoption name changes provide a valuable information role; adopting brand name could be a mechanism to leverage off a firm's well-established brand capital to alleviate the problem of informational asymmetry encountered in the rest of the firms. In addition, brand adoption name changes could provide a valuable bonding role; firms will not assume brand adoption type of name changes unless their prospect is sufficiently positive. Otherwise, they would lose brand capital by associating it with poor quality, which is a strong punishment for brand adoption type of name changes. The radical type of name change cannot be used as a guarantee of good prospect because it has 'nothing to lose' if the firm performance turns out to be poor or is perceived to be such.

Two key results emerge. First, after the name change, Tobin's Q, profitability (measured by funds from operations), external financing, and net investments are significantly larger for brand adoption firms than for radical name change firms. Second, we partition each form of name change into those with improvement in profitability and those without improvement in profitability. The analysis based on stock market shows a significant and positive short-run and long-run performance differential between brand adoption firms with improvement in performances versus those without improvement in performances. Radical name change firms without performance improvements have insignificant short-run effect and are followed by significant, negative post-event excess returns. The results are consistent with that the name-changing firms adopt brand name only when there are subsequent changes to support brand adoption.

This paper expects that the brand name adoption could result in lower cost of capital. In assessing the impact of name change on the costs of capital, it is important to control for the information environment. This is because the information produced by the competing sources is likely to limit the information role of brand adoption name change. It is also important to have a strong set of controls for the economic performances accompanying firm name changes. We disentangle the bonding role

specifically associated with the firm's name brand from the economic performances accompanying firm name changes by orthogonalizing the control variables relating to economic performances with respect to the form of name change. This paper documents that the accounting-based implied cost of equity capital is lower after the brand-name adoption. Similarly, the bond rating is higher after the brand-name adoption.

The insights from the models of Wernerfelt (1988), Cabral (2000 and 2007), and Choi (1998) suggest that the brand-name adoption is consistent with the market high expectation that the anticipated performances seem to be superior. Consequently, managers have strong incentives to avoid reporting earnings lower than analysts forecasts after the brand-adoption name change. They may cook the books if unmanaged earnings fall short of analysts' expectation. We examine instances of class actions lawsuits for three years following name change. Class action lawsuits are shareholder lawsuits against the firm because of financial misrepresentation. We partitions the total dollar loss on the announcements of class action lawsuits into portions that can be attributed to loss of reporting the true performances (i.e., loss if no cooking the books), class action settlements, and the reputation loss. The mean magnitudes of the estimated reputation loss are significant at $87.5 million, suggesting that firms with poor prospect could suffer a loss in brand-name capital if they, intentional or unintentional, cheat investors by brand-adoption type of name change and then cook the books.

This paper is organized as follows. Section 2 develops hypotheses and summarizes prior research. Section 3 describes the data. In section 4, the implications of brand name adoption are analyzed, along with the impact of brand-capital-spoiling events on firm value. Section 5 concludes.

2. Theory, hypotheses and prior research

The "build-by-itself brand name capital" argument made by Tadelis (1999) stresses that, under information asymmetry, investors use track records of a corporate name to form beliefs about the reputation of the corporation; corporate name summarizes the firm reputation.[3] Cabral (2000 and 2007), and Choi (1998) argue that firm with well-established product brand name could extend its brand name to alleviate the problem of informational asymmetry encountered in other product

[3] For example, Stice (1991) argues that clients infer audit quality from name-brand reputation and use whether the auditor belongs to Big Eight firms (now Big Six firms) to measure the name brand of the auditor.

markets when these products are of good quality.[4] Accordingly, this section develops hypotheses on how the ***form*** of corporate name change (brand adoption versus radical change) suggests the ***economic*** nature of name change (real versus cosmetic) and how corporate name change impacts the costs of capital. The primary innovation of this paper is the classification of major name changes (i.e., the old name is entirely different from the new name) into brand adoption and radical change. Brand adoption type of corporate name changes takes on the firms' well-recognized brand names while radical type of corporate name changes bears no semantic link to the firm's history. Robinson and Wu (2005) document important fundamental differences between brand adoption and radical type of name change. Superior past stock, accounting performance, neutral and good media coverage, and a greater number of reported brands generally increase the probability that brand adoption type of name changes occurs, relative to radical change.

2.1. Hypotheses on the relationship between the form of name change and the nature of name change

If a firm is to change its name, will it adopt the name of its well-established brand products, subsidiaries, or divisions (and elevate the established reputation to the overall firm), or will it create a new name (and start a new reputation history)?

As suggested by Cabral (2000 and 2007) and Choi (1998), investors believe that brand name matters; if the well-recognized product (division, subsidiary, etc) brand name is elevated to the firm level, investors believe that the prospect of the other products (divisions, subsidiaries, etc) which encounter informational asymmetry problems is good as long as the performance history with such brand name is good. This type of belief concerning brand elevation allows the firm with optimism and/or superior knowledge about future growth opportunities of the other products (divisions, subsidiaries, etc) to communicate their promising prospects to investors with less stock price distortion than is needed otherwise. Firms may forego profitable investment opportunities of the other products (divisions, subsidiaries, etc) which suffer information asymmetry and associated adverse selection problems (Myers and Majluf (1984)). The reputation leverage mechanism used for brand adoption works through the realization of future profitable investment opportunities that can be

[4] A counter example is the case of the 1982 Tylenol poisoning. Mitchell (1989, P. 612) documents that Johnson & Johnson, the producer of Tylenol, made extensive attempts to downplay the connection between Johnson & Johnson and Tylenol. Mitchell (1989, P. 613) interprets this as suggesting that Johnson & Johnson was fearful that consumers might associate the company name with the poisonings, thereby damaging its reputation across its entire product line. .

associated with the brand name. Therefore, the value of corporate brand name includes not only the future economic rents achieved by its brand name but also the brand's potential of the reduction of costs of asymmetric information.

Adopting a brand name could be more costly than creating a new name as the former has to stake the firm's valuable brand name as a hostage for poor firm performance. In contrast to the brand adoption, the new names of the radical type of name change do not seem to carry brand name capital component. The radical type of name change cannot be used as a guarantee of good prospect because it has 'nothing to lose' if the firm performance turns out to be poor or is perceived to be such.

This paper expects that, in the equilibrium, the name-changing firms adopt brand name only when there are subsequent changes to support brand adoption. We view the accompanying subsequent increases in net investment (equals the sum of capital expenditures, increases in long-term investment, and acquisitions minus the sale of property, plant, and equipment, and minus sale of investments) as evidence that firms are optimistic about the firm prospects and/or possess superior knowledge about future profitable growth opportunities.

Corporate names without initial value could build their own names after history of good performances. This paper therefore expects that, the radical type of name change can be either cosmetic with little or no change in investment or real name change with substantial changes to accompany the name change. It is not obvious which nature of name change would dominate. The cosmetic name change decision is likely when the brand adoption name change is also a viable choice, whereas the real name change decision is likely when the radical name change maybe the only viable choice for firms without established brands. Robinson and Wu (2005) document that, relative to brand adoption, radical name change has a smaller number of reported brands. In summary, this paper expects that most brand adoption form of name changes belongs to economically motivated name changes.

If the equity market can disentangle real from cosmetic name changes at the name change announcement, economically motivated name changes will be more favorably received at announcement and will be associated with no unusual post-announcement stock price performance.[5] However, if the investors, after observing a string of bad shocks, realize that they have been wrong about the nature of name changes, cosmetic

[5] Based on information available at the name change announcement date, this paper does not attempt to separate the stock market announcement effects into those due to the value of name change per se and those due to the accompanying subsequent performance changes.

name changes will be associated with poor stock price performance following name changes as a reflection of the market's disappointment with post-name change performances.

2.2. Hypotheses on the impacts of the form of name change on the costs of capital

In addition to the accompanying changes, this paper expects that brand adoption name change is associated with a reduced cost of capital. The reputation leverage mechanism used for brand adoption may reduce information asymmetry and associated adverse selection problems in the other parts of the firm. In turn, this could result in lower cost of capital.

Two different measures of cost of capital are used in the analysis. The first is the cost of equity capital. The alternative measure is bond rating. Easley and O'Hara (2004) point out that, otherwise identical, the stock with more private information will have a larger expected cost of equity capital. Botosan (1997) and Botosan and Plumlee (2002) document that increased annual report disclosure is associated with a reduced cost of equity capital. Pagano, Panetta, and Zingales (1998) document that IPOs could increase investor recognition and are followed by lower cost of credit. Pittman and Fortin (2004) document that choosing a Big Six auditor reduces cost of debt capital for firms with short private histories that experience worse information problems.

In assessing the impact of name change on the costs of capital, it is important to control for the information environment. Differences in the information environment suggest differences in the effectiveness of the proposed information role of brand adoption name change. We therefore measure the information production role of equity analysts, trading volume, institutional ownership, capital structure, and the existence of bank loans. Undervalued firms benefit from communications made to securities analysts which increase analyst following (Francis, Hanna, and Philbrick (1997)). Information asymmetry can be higher for companies with smaller trading volume (Diamond and Verrecchia (1991)). Institutional investors can likely obtain information more directly from management than public investors (Parrino, Sias, and Starks (2003)), suggesting a more limited role for the brand adoption name change to play in mitigating information asymmetry for firms with greater institutional ownership. Similarly, differences in capital structures suggest differences in the effectiveness of the proposed information role of brand adoption name change; debt can likely play an information role because default allows creditors the option to

force the firm into liquidation and generates information useful to equity investors (Harris and Raviv (1990)). Empirical evidence also suggests the information role of bank loans (James (1987) and Mikkelson and Partch (1986)).

It is also important to have a strong set of controls for the economic performances accompanying firm name changes. This is because the form of name changes may correlate with the economic nature of name changes. Acknowledging that adopting a brand with a good history may create expectations of good future performance and thus the firm will have better performances than it would with a new name, our attempt here is to capture the impact ***of*** the form of name changes on the costs of capital instead of the impact of the ***accompanying*** economic performances on the costs of capital. To capture the economic nature of name changes, we gauge growth opportunities, firm profitability, funds from external financing, and net investment.

2.3. Hypotheses on the depreciation of brand name capital: Financial misrepresentation and financial analyst large downward forecast revision

Can firms with poor prospect suffer a loss in brand-name capital if they, intentional or unintentional, cheat investors by brand-adoption type of name change? Klein and Leffler (1981) and Shapiro (1983) suggest a long-term loss of brand name capital when the brand is misused. As mentioned above, the value of the corporate brand name capital is determined by the firm's future economic rents achieved by its brand name and the brand's potential of the reduction of costs of asymmetric information; thus the brand name capital loss may include the expected loss in the present value of future cash flows due to lower sales and higher contracting and financing costs. Since the brand adoption firm may have a much higher level of brand-name capital to lose than the radical name change firms, this paper expects that, relative to radical name change firms, brand adoption firms are associated with significant stock market losses for firm wrongdoings.

The insights from the models of Wernerfelt (1988), Cabral (2000 and 2007), and Choi (1998) suggest that investors tend to become highly confident that the prospect of brand-name adoption firm is good. Consequently, managers have strong incentives to avoid reporting earnings lower than analysts forecasts (i.e., negative earnings surprise) ((Brown (2001), Skinner and Sloan (2001), and Matsumoto (2002)) after the brand-adoption name change. They may inflate earnings if unmanaged earnings fall short of analysts' expectation. For the earning manipulation to be beneficial, the expected cost of a negative earnings surprise must exceed the expected cost of misrepresenting earnings (reputation costs times the probability of getting caught).

Karpoff, Lee, and Martin (2006) show that the actual reputation loss exceeds the loss if the firms had not cooked the books by more than 2.5 times when the misconduct is revealed.

To measure the reputation loss when the misconduct is revealed, similar to Karpoff, Lee, and Martin (2006), this paper examines class actions lawsuits brought by shareholders for financial misrepresentation for three years following name change. Class action lawsuits are shareholder lawsuits against the firm, officers, directors and other related parties, as a result of the financial reporting related charges named in federal enforcement actions. The firms are suited by shareholders because the prospects or public reports contain materially false and misleading statements about the firm prospects or the company fails to disclose materially important information that cause the price of common stock to be artificially inflated.

How much of the stock market loss suffered by the equity investors is due to the loss in brand-name capital as a result of financial misrepresentation? Clearly, apart from the potential loss of brand-name capital, firms suffer direct out-of pocket costs to settle and resolve class action lawsuits. Furthermore, the stock market loss includes the loss if the firms had not cooked the books. That is, we need to take into consideration the level of stock price that would be obtained had there be no financial misreporting. Based on the argument:

The stock market loss $\approx$ settlement of class action lawsuit + loss if no cooking the books +reputation loss.

Inflating earnings may be difficult. To keep earning forecasts at a beatable level, instead, firms could guide analysts to lower their expectations (Matsumoto (2002)). Burgstahler and Eames (2006) find that forecast revision is more negative for firm-year in the zero forecast-error category, suggesting that management guides forecast downward to avoid negative earnings surprise. Guiding analysts' forecasts downward in order to keep earning forecasts at a beatable level is also costly to the extent that it leads to lower stock prices for an extended period of time. Nevertheless, negative earnings surprise is more costly than downward forecast revisions (Skinner and Sloan (2001)). We therefore use the extreme individual analyst downward earning forecast revisions of the distribution of forecast revisions for the name changing firms to approximate the reputation loss.

3. Data

3.1. Data on brand adoption type of name change and radical type of name change

To construct a sample of new names likely to carry brand name capital component and their comparisons, we first use the Center for Research in Securities Prices (CRSP) name change record date to identify publicly traded firms that experience name changes during the 1980-2000 period. We then obtain name change announcement dates and reported reasons for name changes in question from the following data sources, including company news file of the Lexis-Nexis database, the Dow Jones Interactive database, and SEC filings (Proxy Statements, Annual Reports to Shareholders, Forms 8-K, 10-Q, and 10-K). We assign the announcement date of the name change as the earlier of the press date or SEC filing date. Using the reported reasons for name changes, name changes that occur as a direct consequence of preceding one year corporate control, mergers and acquisition, or parent-subsidiary mergers are excluded from the final sample.[6] We then identify 697 brand adoption name changes, and 193 radical name changes which occur in the absence of confounding events[7]. Again, Brand adoption type of corporate name changes takes on the firms' well-recognized brand names while radical type of corporate name changes bears no semantic relationship to the firm's history.

3.2. Construction of key analysis variables

A summary of the definitions of the key analysis variables is in Table 1. This paper measures cost of capital one year prior to the name change and at the end of third year following name change. The controlling variables in the cost of capital regressions are measured one year prior to the time measuring cost of capital.[8]

We employ five accounting-based implied costs of equity capital measures. They differ in the assumptions concerning the earning growth rate. The accounting-based implied costs of equity capital models begin by assuming a valuation model based on discounted cash flows. They then use financial analysts' short- and long-term

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[6] Name changes that occur as a direct consequence of mergers and acquisition or corporate control are not in our sample. For examples, announced in 1982, Pittsburgh National Corporation and Provident National Corporation of Philadelphia merged to form PNC Financial Corp. MetalBanc Corp announced in 1990 that it acquired 51 percent interest in Jillian's Billiard Club. MetalBanc Corp announced name change to Carom Capital Corporation in 1990.

[7] These confounding events include changes in organizational structures (e.g., changes to holding companies), re-incorporation, stock splits or reverse stock splits, changes in stock exchanges, or changes in legal status.

[8] Since this single-year measurement seems arbitrary, we have checked the sensitivity by using other measures in the empirical testing sections. For example, for the pre-name-change period, the variables are the average of the last three annual figures before the name changes. For the post-name-change period, the variables are the average of the first three annual figures after the name changes.

earnings forecasts as proxies for the market's expectation of future earnings. Finally, they solve for the implied discount rate that equates the present value of the expected future payoffs to the current stock price.[9] Specifically, we employ I/B/E/S consensus forecast of EPS_1 (EPS for the coming fiscal year), EPS_2 (EPS for the fiscal year after the next coming fiscal year), DPS_1 (dividends per share for the coming fiscal year), and EPS_3 to estimate accounting-based implied costs of equity capital. If EPS_3 is unavailable, we use Ltg (five-year long-term growth rate and $EPS_3=EPS_2(1+Ltg)$). Four measures belong to the abnormal earnings growth valuation models, variations of Ohlson-Juettner model (e.g., Gode and Mohanram (2003) and Easton (2004)). The remaining measure is the residual income valuation model (Gebhardt, Lee, and Swaminathan (2001)) which assumes clean surplus accounting in the forecast of book value of equity and the return on equity (ROE) fades linearly to the industry moving median of past ROE by year 12.

To measure the credit worthiness of the firms, we use the categorical bond rating (*BR_Rating*) ranging from 1-4 based on Beatty, Liao, and Weber (2007). For firms with rated debt the variable is 1 if the rating is between SD (D) and B+, 2 if their rating is between BB- and BB+, as a 3 if their rating is between BBB- and BBB+ and finally we classify them as a 4 if their rating is between A- and AAA.

To measure the economic nature of name change, following Bradshaw, Richardson, and Sloan (2006) and Frank and Goyal (2003), we use primarily the statement of cash flows data. To gauge firm profitability and growth opportunities, we use internal financing (*IFIN*) and Tobin's Q. Internal financing is defined as the total funds from operations, accounting for exchange rate effect. To measure the source of funds from external market, we use external financing (*EFIN*) which equals net equity financing plus net debt financing. To measure the net investment (*INV*), we use the sum of capital expenditures, increase in long-term investments, acquisitions, and other uses of funds not classified elsewhere minus sale of property, plant, and equipment, and minus sale of investments.

For two major reasons, it seems more appropriate to scale *IFIN*, *EFIN*, and *INV* by sales or market value of equity rather than book value of assets. First, firms making significant acquisitions of brands (or intangible assets) will have very

[9] One approach to estimate the cost of equity capital is to employ the ex post realized returns and to use Fama and French (1993)'s three factor model or Carhart's (1997) four factor model to fit the empirical returns. However, Fama and French (1997) document that the three-factor estimates of the cost of equity for industries are imprecise, not to mention the estimates for individual firms. We therefore turn to the accounting-based implied cost of equity capital approach.

different asset structures on the balance sheet relative to those making internal investment in brands (or intangible assets) that are expensed. Second, firms making significant net investment will cause the book value of assets to be markedly large compared to firms with insignificant or significant reduction in the physical assets.

This paper views corporate name as a summary of firm reputation. To control for intangible assets currently captured by the accounting system, following Barth, Kasznik, and McNichols (2001), and Barron, Byard, Kile, and Riedl (2002), we adopt the following three accounting-based proxies for intangible assets: (1) advertising expenses (*ADV*), scaled by total operating expenses; (2) R&D expenses (*R&D*), scaled by total operating expenses; and (3) balance sheet intangibles including goodwill (*Goodwill*), scaled by total assets.

This paper expects the information role of brand-adoption name change on reducing cost of capital is contingent upon the information environment of the firm. To control for information asymmetry, we measure number of equity analysts *(Analysts)* obtained from detail I/B/E/S, trading volume *(Volume)* defined as trading volume/the average of outstanding shares, institutional ownership *(Institution)* obtained from CDA/Spectrum institutional (13f) holdings, leverage which is the ratio of debt over total assets, and the existence of bank loan (*Bankdebt*, Compustat #206).

3.3. Data on class action lawsuits for financial misreporting and individual analyst earnings downward predictions revisions

To measure the reputation loss due to financial misreporting, for each firm in the sample, we first search for the company news file of the Lexis-Nexis database for coverage on class actions lawsuits for three years following name change and for payments to shareholders to settle the class actions lawsuits. Following Karpoff, Lee, and Martin (2006), we also search for the Lexis-Nexis FEDSEC: SECREL on Securities Exchange Commission (SEC) decisions, orders, and releases and Lexis-Nexis FEDSEC: CASES on Federal Securities cases and releases.

There are 34 (34/697=4.9%) class actions lawsuits for brand adoption firms and 5 (5/193=2.6%) class actions lawsuits for radical change firms for three years following name changes. This frequency pattern seems to suggest that brand adoption firms are more likely to have financial misreporting. To the extent that Lexis-Nexis chooses to report firms that are better-recognized, this under-reporting bias may lead to more serious underestimates of the frequency of financial misrepresentation for radical name change firms.

We use extreme individual analyst downward EPS forecast revisions from detail I/B/E/S to capture managers' incentives to keep earning forecasts at a beatable level (Burgstahler and Eames (2006)). We focus on one-year-ahead, and two-year-ahead earnings forecast.[10] We define the earning forecast revision as the current forecast minus the prior forecast, deflated by price ten trading days before the release of the revised forecasts. To ensure that our results are not affected by the inclusion of stale forecasts, we require that both a current and a prior release of the forecasts be on the same year. For example, for brand-adoption firms, there are 3,390 (3,059) observations for one-year ahead forecast revisions released within the first (second) year after name change; for radical name change, there are 358 (309) observations for one-year ahead forecast revisions released within the first (second) year after name change. To the extent that I/B/E/S chooses to follow firms that are better-recognized, this under-reporting bias may lead to more serious underestimates of the frequency of downward earning predictions revisions for radical change firms.

4. Empirical results

4.1. The empirical results on the relationship between the form of name change and the nature of name change

Table 2 shows mean and median values measured at two-year-end prior to the announcement of name change and two-year-end following the name change on the economic performances, level of information asymmetry, and intangible assets captured currently by the accounting system. Due to the right skewness of the data, the mean values are larger than the median values. This paper expects that most of the brand adoption form of name changes are economically motivated name changes while the radical name change could be cosmetic name change with little or no change to support the name change; Table 2 also reports the percentage of the firms with an increase in the variables and tabulates explicitly in the last two columns the *p*-values for differences between brand adoption and radical name change.

Panel A of Table 2 reports the economic nature of name change. The binomial sign test shows that over the majority of the brand adoption firms seem to be economically supported name changes: they have improvements in Tobin's Q, in profitability measured by internal generated cashflows (IFIN/ln(sales)), and have

[10] Chan, Karceski, and Lakonishok (2003) suggest that the release of forecast revisions concerning long-term earnings growth rate contains low, if any, information content. We therefore choose to focus on one-year-ahead, and two-year-ahead earnings forecast.

increases in net investments.[11] However, there are no significant improvements in Tobin's Q, and profitability of radical name change firms. The patterns and significance levels hold for the raw data and scaled internal generated cashflows which is divided by the natural log of market value of equity and scaled net investment which is divided by the natural log of sales. Importantly, the *p*-values in the last two columns suggest that the form and the nature of name change is correlated; After the name change, Tobin's Q, profitability, external financing, and net investments are significantly larger for brand adoption firms than for radical name change firms. For example, the mean (median) IFIN/ln(sales) are 8.99 (2.27) and 5.32 (0.97) for the brand adoption and radical change after the name change, respectively.

Panel B of Table 2 reports the information environment around the name change. Within each name change category, except for numbers of equity analysts, there are no apparent differences in the information environment before and after the name change. Across the two forms of name changes, there are significantly greater numbers of equity analysts, trading volume (median only), institutional ownership, and a lower leverage ratio (mean only) for the brand adoption firms than for the radical name change firms following the name change.

Panel C presents changes in intangible assets captured by the accounting system around the name change. There are significantly greater advertising expenses (ADV) for the brand adoption firms than for the radical name change firms for both pre and post-name-change period. Since many firms have advertising expenses (ADV) and R&D expense (R&D) equal to zero, focusing only on firms with positive ADV and R&D, the unreported results show that for both subsamples there are no significant differences in the ADV and R&D before and after the name change. The matched pair t-test and Wilcoxon matched pair sign-rank test show that balance sheet intangibles (Goodwill, #33 + #204) increase significantly after the brand adoption type of name changes.[12] This suggests that brand adoption firms make significant acquisitions of firms and/or intangible assets after name changes. Comparisons between brand adoption and radical change show that the balance sheet intangibles are significantly larger for the brand adoption after the name changes.

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[11] Disaggregating the net investment variable for brand adoption, the unreported result shows a significant increase in capital expenditures, acquisitions, and investments in unconsolidated subsidiaries and an insignificant change in the sale of property, plant, and equipment and sale of investments. Dividing the source of external financing for brand adoption shows a significant reduction in net equity financing and no apparent change in net debt financing.

[12] Compustat annual data item 33 represents the unamortized value of intangible assets and Compustat annual data item 204 represents the excess of cost over equity of an acquired company.

Results from Panel C suggest that brand adoption firm and radical name change firms have different asset structures on the balance sheets. Furthermore, brand adoption firms are accompanied by increases in physical asset investment and/or intangible assets investment.

Table 2 uses single year to measure the variables. To check the sensitivity, we repeat the analysis using the three-year averages to measure the variables in the pre and post name change periods. In addition, the analysis has been performed using values measured at year-end preceding the announcement of name change and first-year-end following the name change. The patterns of results and significance levels are very similar to those reported in Table 2. In sum, Table 2 documents that over majority of the brand adoption form of name changes are economically motivated, whereas over majority of the radical name change could be cosmetic in nature without improvement in profitability.

Table 3 reports a market-based assessment of the abnormal returns around the name-change period for a two-way sort between real and cosmetic name change classified into brand adoption and radical change categories. To examine whether the equity market could have some separation between real economic versus cosmetic change relating to form of name change, we further partition each form of name change into those with improvement in profitability and those without improvement in profitability. Improvement in profitability is defined as the positive change in internal generated cashflows (IFIN/ln(sales)) measured at two years following name change relative to two years prior to the name change announcement.

Panel A of Table 3 shows the announcement period returns. We use CAR(%) which is calculated using a market model regression of firm stock returns on the CRSP equally weighted market index. The estimation window is (-260, -11), with day 0 being the name change announcement. The mean CAR (-3,0) for the overall brand adoption is 2.70% (p=.00). In contrast, the mean CAR (-3,0) for the overall radical change is statistically indifferent from zero at 0.72% (p=.35). The differences are statistically significant at the 5 percent level. Results based on the improvement in profitability suggest that equity market has some (not fully) separation between real economic versus cosmetic change. For brand adoption firms, CAR (-3,0)=3.84% (p=.00) for firms with improvement in profitability, and 2.25% (p=.01) for firms without improvement in profitability. The differences are statistically significant at the 5 percent level. Radical name changes ***without*** improvement in profitability are insignificant, non-events at announcement. Radical name changes ***with*** improvement

in profitability are positive, significant events; CAR (-3,0)=2.10% for radical name change firms with improvement in profitability (p=.08), and -1.89% for radical name change firms without improvement in profitability (p=.27). The differences are statistically significant at the 10 percent level.

Across two forms of name changes, CAR (-3,0) is significantly greater for brand adoption firms without improvement in profitability than for radical name change firms without improvement in profitability. One interpretation of this is that adopting brand name per se increases firm value even though there may be no accompanying improvement in firm performances. It is also consistent with that there could be noise in the investors' ability to disentangle real economic versus cosmetic change when the name change is announced, causing the market to observe performances over time to disentangle the economic consequences. This motivates us to examine abnormal returns up to two years following the name changes.

Panel B employs the mean buy-and-hold excess return which is calculated using a matched control firm for each sample firm. Sample firms are matched to a comparable company based on Fama French (1997) industry, firm size, book-to-market and momentum (ISBM). Each sample firm is matched to a firm in the same industry that did not experience corporate name change during the previous two years. Within industry, matches are made based on the sum of the absolute deviations of size, book-to-market, and momentum rankings. If size, book-to-market, or momentum returns are missing, a match is made with a company in the same industry with missing size, book-to-market, or momentum returns.

For the overall sample, the abnormal returns up to one and two years following the name changes are significantly larger for brand adoption firms than for radical name change firms. Panel B shows a significant, positive performance differential between brand adoption firms with improvement in performances (CAR_ISBM months (1,12)=28.62%, p=.02 and CAR_ISBM months (1,24)=30.80%, p=.02) versus those without improvement in performances (CAR_ISBM months (1,12)=0.26%, p=.98 and CAR_ISBM months (1,24)=-35.60%, p=.01). Radical name change firms without performances improvements are followed by significant, negative post-event excess returns (CAR_ISBM months (1,12)=-20.40%, p=.06 and CAR_ISBM months (1,24)=-37.37%, p=.00). The insignificant or poor post-name change stock performances for firms without operating improvements may reflect the market's disappointment after observing performances over time. Across two forms of name changes, the differences in post-event excess returns for firms with

improvement in performances are statistically significant. This is consistent with that adopting brand name per se increases firm value, holding the performance improvements constant.

Panel C uses the Fama-French-Carhart four-factor model (Fama-French three factor plus momentum factor) to calculate calendar time portfolio equal weighted excess returns. Observations with less than 10 returns are excluded. Panel C shows positive and significant alphas for brand adoption, regardless of the nature of name change for the one-year holding period and a positive and significant alphas for brand adoption firms and radical name change firms with improvement in profitability for the two-year holding period. The unreported value weighted excess mean returns show significantly reduced alphas, suggesting that the equal weighted excess mean returns in the samples are driven partly by small name change firms.

So far, the results suggest that adopting brand name per se increases firm value, holding the economic nature of the name change constant. Panel D presents alphas from the trading strategy based on information available at the announcement: long brand adoption/short radical change calendar time hedge portfolios. The purpose of this analysis is to determine whether investors can benefit by trading on information about form of name change. It is another way of assessing whether the brand name adoption create value and/or are valuable to investors. Securities are purchased or shorted on the month after name change announcement and the long/short position is unwound after 12, or 24 months. The long brand adoption/short radical change calendar time hedge portfolios earn significant positive alpha, regardless of holding period. This suggests that public investors could still earn significantly positive returns by forming a long brand adoption/short radical change hedge portfolio one month after name change announcement regardless of the economic nature of the name change.

In contrast to the cosmetic view of name changes literature that documents significant positive and permanent effect to firms that add dot.com, regardless of the firm's level of involvement with the Internet in the Internet boom period (Cooper, Dimitrov, and Rau (2001)) and the positive and permanent effect to firms that remove dot.com from their name in the bust period regardless of whether the sample firms are indeed Internet firms (Cooper, Khorana, Osobov, Patel, and Rau (2005)), the result in Table 3 provides strong evidence that radical name change firms without performances improvements have insignificant short-run effect and are followed by significant, negative post-event excess returns.

4.2. Impact of brand-name adoption on cost of capital

4.2.1 The intertemporal univariate results

Table 4 presents five estimated cost of capital around name changes. For the pre-name-change period, the estimated costs of capital are the last annual figures before the name changes. For the post-name-change period, the estimated costs of capital are the third annual figures after the name changes. Table 4 employs I/B/E/S consensus forecast of EPS_1 (EPS for the coming fiscal year), EPS_2 (EPS for the fiscal year after the next coming fiscal year), DPS_1 (dividends per share for the coming fiscal year), and EPS_3 to estimate the accounting-based implied costs of equity capital. If EPS_3 is unavailable, we use Ltg (five-year long-term growth rate and $EPS_3=EPS_2(1+Ltg)$). These five valuation models differ in their treatment of earning growth rate. We compute the first three implied costs of equity in Easton (2004): r_{PE}, r_{PEG}, and r_{MPEG}. r_{PE} assumes the abnormal change in earning equals zero. r_{PEG} assumes the short-term earnings growth rate, $(EPS_2-EPS_1)/EPS_1$, equals the constant perpetual earnings growth rate. r_{MPEG} imposes no restriction on the dividend payout policy and thus the abnormal growth in earning is the increase in earnings in excess of the return on net reinvestment ($EPS_2-EPS_1-r_{MPEG}*(EPS_1-DPS_1)$) and there is no change in the abnormal growth in earning. We compute the fourth implied cost of equity using Ohlson-Juettner model in Gode and Mohanram (2003): r_{OJ} which assumes that the short-term abnormal growth in earning decays asymptotically to the perpetual growth rate: r_f-3% where r_f is the yield on 10 year notes. We compute the fifth implied cost of equity using residual income valuation model in Gebhardt, Lee and Swaminathan (2001): r_{RIV} which specifies the pricing equation in terms of return on equity (ROE) and assumes clean surplus accounting in the forecast of future book value of equity (i.e., $B_{t+1}= B_t + EPS_{t+1} - DPS_{t+1}$) and the ROE fades linearly to the industry moving median of past ROE by year 12. To compute future book values, we need to estimate the expected dividend payout ratio which is estimated by dividing actual dividends from the most recent fiscal year by earnings over the same time period,

To measure credit worthiness of the firms, we use the four ordinal scaled bond rating (*BR_Rating*) based on Beatty, Liao, and Weber (2007). For firms with rated debt the variable is 1 if the rating is between SD (D) and B+, 2 if their rating is between BB- and BB+, as a 3 if their rating is between BBB- and BBB+ and finally we classify them as a 4 if their rating is between A- and AAA. 171 observations are

available by requiring the actual bond ratings at year-end preceding the announcement of name change and 194 observations are available by requiring the actual bond ratings at third-year-end following the name change.[13]

We expect to find that the cost of equity capital is lower and the bond rating is higher after the brand adoption. In Table 4, three (four) out of five models show lower mean (median) estimated cost of equity capital after brand-adoption. In contrast, there are insignificant intertemporal variations in the mean (median) estimated cost of equity capital for radical name change. Furthermore, after the name changes, the costs of equity capital are significantly lower for the brand adoption firms than for the radical change firms. Similarly, the average (median) bond rating is significantly higher after the brand name adoptions and the brand adoption firms have superior bond ratings relative to the radical name change firms.

The costs of equity capital in Table 4 are plausibly estimated and are similar to those in Easton (2004) and Guay, Kothari, and Shu (2005). Consistent with Easton's (2004) estimates over 1981-1999 that the median r_{PE} is much lower than the median r_{PEG} which is lower than the median r_{MPEG}, we have the same sequences for both brand adoption and radical changes. Our estimates of r_{OJ} and r_{RIV} are close to those of Guay, Kothari, and Shu's (2005).

We need to isolate the information environment and the economic consequences of name changes in order to evaluate the proposed information role of corporate names/brands on the cost of capital. We therefore apply multivariate regression models in the next subsection.

4.2.2. The intertemporal multivariate analysis of the association between name changes and cost of capital

The discussion in section 2.2 suggests that brand adoption name change provides two potential valuable roles to capital market participants: an information role and a bonding role. Elevating the well-recognized brands to the overall firm reduces the information asymmetry so long as the reputation associated with such brands is good, and to the extent contracting with the firm is made less costly, it reduces the cost of

[13] To increase the number of observation, we also use an indicator variable on whether the corporate debt is rated (one for firms with positive debts (#9+ #34) which have been rated (#280) and zero for firms with unrated positive debts). 690 observations are available at year-end preceding the announcement of name change and 609 observations are available at third-year-end following the name change. The proportion of brand adoption firms with rated bonds increases significantly from 21.02% to 28.28% after the name changes. However, an indicator variable seems to lose the very variation of the credit-worthiness that the paper wishes to exploit. Therefore, we report the results using the actual bond ratings even at cost of lost power.

capital. In addition, brand adoption name change provides a bonding role. This is because brand adoption name changes have 'more to lose' relative to the radical name change if the economic consequences turn out to be disappointing or are perceived to be such, investors expect good economic effects accompanying such name change. This subsection focuses on the information effects of brand adoption name change. We therefore need to control for the other information providers in the capital markets and the bonding effect of brand adoption name change. Furthermore, since we examine the specific intangible asset of corporate name brand, we need to control for the more general intangible assets captured by the accounting system.

We apply intertemporal multivariate regressions to analyze the information role of brand adoption name change on the cost of equity capital. The dependant variable is the estimated implied cost of equity capital adjusted for risk free rate. For the pre-name-change period, it is measured at year-end prior to the name changes. For the post-name-change period, it is measured at the end of third year after the name changes. We classify the independent variables into test and control variables. The test variables are variables relating to the form of name change. As Table 4 shows that the cost of equity capital is lower after the brand-adoption type of name change, we therefore introduce an indicator variable *Post change* that equals one for the post-name-change period and zero for the pre-name-change period and an interaction term *Post change*Adoption* which allows the coefficient on *Adoption* (equals one for the brand adoption firm and zero for the radical change firm) to be different in the pre and post-name-change period. We expect the coefficient on *Post change*Adoption* to be negative. The control variables are variables relating to the information environment, economic activities accompanying name changes (nature of name change), accounting-based intangibles, volatility and risk, and price momentum. To capture the potential impacts of control variables, they are measured one year before the time measuring dependent variable. That is, control variables for the pre name change period are measured two years prior to name change and control variables for the post name change period are measured two years following name changes. The following general intertemporal multivariate model is used in the analysis:

Cost of equity capital-risk free rate = *f*(form of name change, information environment, economic performances (nature of name change), accounting-based intangible assets, volatility and risk, price momentum,

year dummies)

The information environment in the capital market is characterized by numerous information intermediaries such as equity analysts following, trading volumes, institutional ownership, capital structure (leverage ratio), bank relationship, and bond rating agencies. Institutional investors and debt holders can likely obtain information more directly from management than public investors. The reputation-building role of bank loan is suggested by Diamond (1991) and a similar role is suggested of bond rating. It is expected that cost of equity capital is lower for firms with greater equity analysts following, trading volumes, and institutional ownership. It is also expected that cost of equity capital is lower for firms with bank relationship and rated bonds. However, the leverage ratio and the existence of bank loan may also proxy for the level of debt financing. In this way, cost of equity capital may be an increasing function of the leverage ratio and bank relationship.

To control for the bonding effect of brand adoption name change, we measure the economic performances. We use Tobin's Q and scaled cash flows from operations (*IFIN/ln(sales)*) to assess firm profitability and it is expected that cost of equity capital is lower for more profitable firm. We use external financing (*EFIN/ln(caps)*) to assess the impact of external financing activities and it is expected that a firm's cost of equity is an increasing function of the external financing activities. We use net investment (*INV/ln(caps)*) which equals the scaled sum of capital expenditures, increases in long-term investment, and acquisitions minus sale of property, plant, and equipment, and minus sale of investments to assess the impact of investment activities and it is expected that cost of equity is an increasing function of the net investment activities, to the extent that equity risk increases with the investment activities. Finally, we introduce an interaction term *Post change*Real* which allows the coefficient on *Real* (equals one for firms with positive improvement in IFIN/ln(sales) and zero otherwise) to be different in the pre and post-name-change period. We expect the coefficient on *Post change*Real* to be negative when the cost of equity capital is lower after economically supported name change.

To measure accounting-based intangible assets, we use advertising expenses (*ADV*), R&D expenses (R&D), and balance sheet goodwill plus intangibles (*Goodwill*). Following the empirical specification of Gebhardt, Lee and Swaminathan (2001), we also control for stock price volatility (*STD)*, variability of earning forecasts (*MAE of forecast earnings)*, and price momentum ($Return_{-12}$).

Table 5 reports the results from r_{MPEG} adjusted for risk free rate. The results from the rest of implied costs of equity capital are not reported here, since they are qualitatively similar. Models (1) and (2) show the OLS regression results without the test variables (Adoption (0,1) and Post change*Adoption) to allow us to illustrate the incremental explanatory power from the test variables as well as the effects on control variables. Models (3) and (4) add the test variables. It is plausible that the form of name change is determined endogenously instead of exogenous to the firm. We therefore estimate the type of new name choice between brand adoption and radical changes using a probit model. Please refer to Appendix A for the estimation of the choice of brand adoption versus radical name change and the definitions of the independent variables. As shown in Appendix A, there are some fundamental differences between brand adoption and radical type of name change. Superior past performance, neutral and good media coverage, less bad media coverage, a greater number of reported brands, better investor recognition, and a lower leverage ratio generally increase the probability that brand adoption type of name changes occurs, relative to radical change. Models (5) and (6) show two-stage least squares where we estimate a system of two equations in which the endogenous explanatory variable *Adoption* is the dependent variable from the probit model of the choice between brand adoption and radical changes in the system.

Comparing models (1) and (2) with models (3) to (6) shows that when we introduce the form of name change, in general, the coefficients on the variables relating to the nature of name changes are lower, and some remain significant. The information produced by the competing sources is likely to limit the role of brand adoption name change in reducing information asymmetry. However, when controlling for a set of competing information producers, models (3) to (6) document that the coefficients on *Post change*Adoption* are negative, suggesting a lower cost of equity capital after the adoption of brand name and that the information role of brand name is likely to contain and/or subsume the information contained on other information sources.

The findings of control variables are broadly consistent with prior studies (Gebhardt, Lee and Swaminathan (2001)). Firms with greater balance sheet intangibles are associated with lower cost of equity capital. However, unreported results using a Wald test show that the accounting-based intangible assets variables are jointly insignificant. Greater volatility of stock returns and forecast earnings

variability are associated with a larger cost of equity capital. Similarly, firms with higher recent price momentum tend to have higher cost of equity capital.

We perform three robustness checks. First, to examine whether the economic effect of brand adoption on the cost of capital could be through the bonding channel, we employ specification in which variables measuring economic effects of name change are replaced with the orthogonalized ones. If the bonding role of the brand name adoption is extracted from the economic effects accompanying the name changes, we would expect an even larger (information plus bonding) effect for our form of name change test variable, as it incorporates both factors. We can then examine the difference between the coefficients in the model (3) and model (7) to estimate the dual characteristics of name change. Model 7 of Table 5 orthogonalizes the control variables relating to economic performances (nature of name change) with respect to the form of name change which allows us to measure the total (information plus bonding) impact of name change on cost of capital. Similar to the results in model (3), Model (7) shows the coefficient on *Post change*Adoption* to be negative and significant. In addition, both the magnitude and significance increases compared to the prior specification. The *Post change*Adoption* coefficient is -5.827 (*p*-value=0.00). This suggests that the economic effect of brand adoption per se on the cost of capital could be through the information or the bonding channel. In addition, we examine the impact of outliers on the results. We estimate the models using median regressions with bootstrapped t-statistics to correct for heteroskedasticity. Finally, Table 5 uses single year to measure both the independent and dependent variables. We repeat the analysis using the average years to measure the variables in the pre and post name change periods. The key result that the coefficients on *Post change*Adoption* are significantly negative holds.

Table 6 employs intertemporal multivariate regression to analyze the potential influence of brand name adopting on the bond rating. The dependant variable is the four ordinal scaled bond rating (*BR_Rating*) based on Beatty, Liao, and Weber (2007). The independent variables in Table 6 are the same as those in Table 5, except that similar to Mansi, Maxwell, and Miller (2004), we include Altman's (1968) Z-score to measure the default risk for public firms. It is expected that bond rating is higher for firms with larger Z-score. The following general intertemporal multivariate model is used in the analysis:

$$\text{Bond rating} = f(\text{form of name change, information environment,}$$

economic performances (nature of name change), accounting-based intangible assets, volatility and risk, year dummies)

Models (1) and (2) show the ordered probit regression results without the test variables (Adoption (0,1) and Post change*Adoption). Models (3) and (4) add the test variables. Models (5) and (6) control for self-selection in the type of new name; *Adoption* is the dependent variable from the probit model of the choice between brand adoption and radical changes shown in Appendix A. Model (7) tries to disentangle the economic effects specifically associated with the firm's name brand from the economic effects accompanying firm name changes by orthogonalizing the control variables relating to economic performances with respect to the form of name change.

On the one hand, if the bond rating agencies can likely obtain information more directly from management, it then suggests that name change has a more limited role to play in reducing information asymmetry. On the other hand, the bond rating agencies may summarize existing public information without providing new data (Wakeman (1990)). In this way, brand name adoption would appear to provide a potential means of communicating inside information about the firm credit-worthiness and is able to predict rating changes.

When controlling for a set of information producers, models (3) to (6) document that the coefficients on *Post change*Adoption* are significantly positive, suggesting a higher credit rating after the adoption of brand name and that some upgrades may due to anticipated improvement in credit-worthiness revealed by brand-name adoption. The results in Table 6 reaffirm the uniqueness of the reputation building role of brand name; brand name adoption seems to contain the information in credit rating and other potential information producers. Furthermore, model (7) orthogonalizes the control variables relating to economic performances (Tobin's Q, IFIN/ln(sales), EFIN/ln(caps), and INV/ln(caps)) with respect to the form of name change. Similar to the results in model (3), model (7) finds the coefficient on *Post change*Adoption* to be positive and significant in both specifications. In addition, both the magnitude and significance increases compared to the prior specification. The *Post change*Adoption* coefficient is 1.138 (*p*-value=0.00). This suggests that the economic effect of brand adoption per se on the cost of capital could be through the reduced information costs or the increased future economic rents achieved by its brand name.

The rest of the models are plausibly estimated. Greater volatility of stock returns, and higher financial leverage are associated with a lower credit rating while greater internal cash flow, greater numbers of analyst following, greater institutional ownership, and the indicator variable for the bank relationship are related to a higher credit rating. Surprisingly, Altman's (1968) Z-score for public firms are unrelated to the credit ratings in our sample firms.

4.3. The estimated impact of corporate wrongdoings and financial analyst large downward earning forecast revisions on the value of brand name

We intend to measure the loss in brand-name capital, if intentional or unintentional, a firm with poor prospect cheats investors by brand-adoption type of name change. As described above, the brand-name adoption is consistent with the market high expectation that the anticipated performances seem to be superior. Under such investor sentiments, management may possess incentives to cook the books.

Table 7 examines instances of class actions lawsuits for three years following name change. Class action lawsuits are shareholder lawsuits against the firm, officers, directors and other related parties, as a result of the financial reporting related charges named in federal enforcement actions. There are 34 (34/697=4.9%) and 5 (5/193=2.6%) class actions lawsuits three years following name changes for brand adoption firms and radical change firms, respectively. The two binomial proportions test shows a *p*-value of 0.103, suggesting that management for the brand adoption firms may possess stronger incentives to cook the books.

Table 7 first estimates the total dollar loss for the announcement of class action lawsuits because of financial misrepresentation. We use the market model regression of firm stock returns on the CRSP equally weighted market index. The estimation window is (-260, -11), with day 0 being the announcement of class action lawsuits. To transform the abnormal returns into dollar terms, each abnormal return is multiplied by the firm's market capitalization one day before the event day. The cumulative CAR (-3,0)% loss is the dollar losses summed over all event days for a given firm. Similar to Karpoff, Lee, and Martin (2006), Table 7 then partitions the total dollar loss into portions that can be attributed to cost of reporting the true performances (i.e., loss if no cooking the books), class action settlements, and the reputation loss. The loss if no cooking the books is calculated by multiplying each firm's book value of write-offs by its industry median market-to-book assets ratio using two-digit SIC codes. The book value of write-offs is the largest accounting adjustments defined as (negative one times) the sum of special items, accounting

charges, and charge offs (Items 17, 183, and 349) after the name change. There are 22 firms without information on the class action settlement payments, 3 firms in which the settlement is funded entirely by insurance policies, and 7 firms that the court announced dismissal of the class action lawsuit. In cases without information on the class action settlement payments, Table 7 then partitions the total dollar loss into portions that can be attributed to loss if no cooking the books and the reputation loss.

Table 7 shows that for the brand-adoption firms, the mean and median stock market reactions to the announcement of class action lawsuits, in dollar terms, are significantly negative. In contrast, the stock market reactions are insignificantly negative for the radical name change firms. Furthermore, Table 7 suggests that a significant portion of the stock market reaction is due to the unanticipated poor firm performances. For example, for brand-adoption firms, around 90 (70) percents of the mean (median) cumulative CAR (-3,0) loss is due to the loss if no cooking the books. Panel A shows that the mean magnitudes of the estimated reputation loss are $87.5 million and $16.3 million for the brand adoption firms and radical change firms, respectively. Panel B shows that the mean magnitudes of the estimated reputation loss based on the cumulative CAR (-2,2) loss are $63.7 million and $4.3 million for brand adoption firms and radical change firms, respectively. The magnitudes of the estimated reputation loss for the brand adoption firms are comparable to those estimated from firm-initiated disclosures of financial misrepresentation reported by Karpoff, Lee, and Martin (2006); their mean (median) estimated reputation loss are $64.7 million ($19.8 million).[14]

We now check the robustness of the estimated reputation loss. Instead of determining the book value of write-offs using the largest accounting adjustments after the name change, we use the largest accounting adjustments during the 60 months following the class period. The class period is typically the time frame during which the alleged fraud is believed to take place. Karpoff, Lee, and Martin (2006) suggest that the average enforcement period (the period from the trigger events such as self-disclosures of malfeasance, restatements, auditor departures, and unusual trading until the SEC settles enforcement proceeding and/or the private class actions are settled) exceeds 50 months. The mean (median) loss for no cooking the books is $190.6 million ($25.1 million) for brand adoption firms and $10.4 million ($6.5 million) for radical change firms, respectively. The corresponding mean (median)

[14] Their estimated reputation loss is based on average one-day market-adjusted returns on announcements related to the financial misconduct and related enforcement activities.

reputation loss is $810 million ($20.5) for brand adoption firms and $51.8 million ($6.9 million) for radical change firms, respectively. The mean (median) reputation losses differ significantly between brand adoption firms and radical change firms at *p*-value of 0.056 (0.086). We vary the estimation period following the class period and our overall conclusions are qualitatively unaffected. In sum, Table 7 suggests that a brand adoption firm suffers a substantial loss in brand-name capital when the financial misrepresentation is revealed.

For instances where the financial misrepresentation is not yet revealed, we turn to the analysts release of extreme downward earning forecast revisions, approximated by top 10%. This is because Burgstahler and Eames (2006) find that forecast revision is more negative for firm-year in the zero forecast-error category, suggesting that management guides forecast downward to avoid negative earnings surprise.

In addition to that management may guide forecast downward, the extreme downward forecast revisions may include anticipated sizable impairments. We therefore partition the total dollar loss on the announcement of forecast revisions into portions that can be attributed to impairment loss and reputation loss.

We obtain individual analyst earnings predictions from detail I/B/E/S. We focus on one-year-ahead, and two-year-ahead earnings forecast. EPS forecast revision (*FREVEPS*) is calculated as the current forecast minus the prior forecast, deflated by price ten trading days before the release of the revised forecasts. To ensure that the result is not affected by outdated forecasts, we require that both the current and a prior forecast be issued within the same year. To calculate the investors' reaction, we use a market model regression of firm stock returns on the CRSP equally weighted market index. The estimation window is (-260, -11), with day 0 being the release of forecast revisions. Because our sample contains multiple observations for each analyst, the cross-sectional dependence is addressed in the market model regression by clustering observations by firm using the cluster() option in STATA.

To transform the abnormal returns into dollar terms, each abnormal return is multiplied by the firm's market capitalization one day before the event day. Impairment loss is calculated by multiplying each firm's book value of write-offs by its industry median market-to-book assets ratio using two-digit SIC codes and is limited to be no greater than the cumulative CAR (-3,0)% loss. The book value of write-offs is the largest accounting adjustments defined as (negative one times) the sum of special items, accounting charges, and charge offs (Items 17, 183, and 349) during and beyond the forecasting period.

Table 8 reports the CAR (-3, 0) loss in dollar terms, impairment loss, and the reputation loss, categorized by the type of name change. Panel A shows the reputation loss based on the largest 10% downward EPS forecast revisions for the coming fiscal year. Both the current and a prior forecast are issued within the first year after name change (FREVEPS1_1st). The release of FREVEPS1_1st is associated with significant market loss of $14.7 million for brand adoption. Correspondingly, reputation loss is estimated at $5.5 million. Furthermore, the mean market loss and the associated mean reputation loss are significantly more serious for the brand adoption than for the radical change. The zero median reputation loss suggests that a significant portion of the extreme EPS forecast downward can be attributed to sizable impairments. Panel B shows the reputation loss based on the same forecasting period except that both the current and prior forecasts are issued within the second year after name change (FREVEPS1_2nd). Similarly, the FREVEPS1_2nd is associated with significant mean CAR (-3, 0) loss of $18.9 million for brand adoption. Correspondingly, reputation loss is estimated at $5.3 million. For the release of FREVEPS1_2nd, the market loss and the associated reputation loss are more serious for the brand adoption than for the radical change.

We perform a similar test on the two-year-ahead earnings forecast revisions. Panel C shows the reputation loss based on the largest 10% downward EPS forecast revisions for the fiscal year after the next. Both the current and prior forecasts are issued within the first year after name change (FREVEPS2_1st). Panel D uses the same forecasting period except that both the current and prior forecasts are issued within the second year after name change (FREVEPS2_2nd). The FREVEPS2_1st is associated with a mean reputation loss at $22.4 million for brand adoption. The FREVEPS2_2nd is associated with a mean reputation loss at $21.8 million for brand adoption. For FREVEPS2_1st and FREVEPS2_2nd, the reputation losses are more serious for the brand adoption than for the radical change. In sum, compared with financial misrepresentation in Table 7, similar but less negative patterns are observed for downward forecasts revisions.

We check the robustness of the estimated reputation loss. First, Stickel (1992) suggests that the result of Table 8 is robust to the identity of analysts. Second, the use of the largest 10% downward revisions may appear as a noisy measure. We have considered 5% and 7.5% cutoffs and the results are qualitatively unaffected. Finally, Table 8 fails to control for the magnitude of EPS forecast revisions (*FREVEPS*). In the unreported result, we employ the multivariate regressions, holding the magnitude

of EPS forecast revisions constant. Our prediction is that, compared to the radical change, investors react more negatively to downward forecasts revisions issued for brand adoption firms. The regression result is consistent with our prediction.

In sum, a brand-adoption firm with poor performances after name changes may possess incentives to inflate the accounting numbers or to guide analysts to downward forecasts to keep earning forecasts at a beatable level. Tables 7 and 8 suggest that such misconducts when revealed, results in a significant loss in brand name. This is consistent with Klein and Leffler (1981) and Shapiro (1983) that a loss of brand name capital when the brand is misused.

5. Conclusion

This paper goes beyond the existing cosmetic view of name change literature. This paper proposes that the form of name change (brand adoption versus radical change) bears implications of the economic nature of name change. This paper documents that over majority of the brand adoption form of name changes are economically motivated with a significant increase in capital expenditures, acquisitions, and long-term investments and an improvement in profitability, whereas over majority of the radical name change could be cosmetic in nature without improvement in profitability. Furthermore, radical name change firms without performances improvements have insignificant short-run effect and are followed by significant, negative post-event excess returns.

Furthermore, this paper expects that brand adoption name change provides an information role and a bonding role to the firm. Elevating the well-recognized brands to the overall firm reduces the information asymmetry and thus it reduces the cost of capital. In addition, brand adoption name changes have 'more to lose', relative to the radical name change, if the economic consequences turn out to be disappointing, brand adoption name changes guarantee good performances accompanying such name change. Consistent with our prediction, when controlling for the information environment, and economic activities accompanying name changes (nature of name change), this paper documents a lower cost of equity capital and a higher bond rating after the adoption of brand name.

Finally, this paper documents that the value of brand name suffers when the brand adoption is misused, measured by the class actions lawsuits because of cooking the books and the release of large downward earning forecast revisions for three years following brand name adoption.

Acknowledgements

The author is grateful for funding support from Taiwan, R.O.C., National Science Council Grant. I would like to thank seminar participants at National Central University, National Chiao Tung University, and National Chengchi University.

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Appendix A: Probit Analysis for the Choice between Brand Adoption and Radical Name Change.
For the dependent variable, Brand adoption equals one and the radical name change equals zero. *Bad Coverage* refers to the number of news reports on fraud, unreliable acts, and poor performances in the company news file of the Lexis-Nexis database and the Dow Jones Interactive database within three years prior to name changes. *Other Coverage* refers to the number of media coverage other than bad news in the same above sources over the same period. *Ticker* equals to one for firms that experience ticker symbol changes. *Brands* refer to the number of reported brand names that the firm owns from the Lexis-Nexis database (Directory of Corporate Affiliations file and business description item of the S&P Corporate Descriptions file), the products item of the Hoover Profiles database, and brand data from the Global Market Information database. *Physical Capital* is the natural log of net property, plant & equipment. *ln(1+Age Since IPO)* is the natural log of one plus the number of years between IPO and the announcement of the name change. *Bid/Ask Spread* is 100*(1-bid/ask). *Herfindahl* is the Herfindahl index. *P*-values (in parentheses) are based on White-corrected standard errors. Coefficients with *P*-values of .10 or lower are highlighted in bold face type. The *P*-value for the significance of the regression equation is less than 0.000.

	Brand Adoption vs. Radical Change
Intercept	**2.740**
	(0.000)
Panel A: Reputation Linked to Past Performance	
Tobin's Q	**0.019**
	(0.081)
IFIN/ln(caps)	**0.013**
	(0.008)
EFIN/ln(caps)	-0.023
	(0.154)
INV/ln(caps)	**0.055**
	(0.004)
Panel B: Reputation Linked to Publicity	
Bad Coverage	**0.022**
	(0.009)
Other Coverage	**-0.006**
	(0.062)
Panel C: Reputation Linked to Equity Market's Perception	
Ticker	-0.012
	(0.950)
Panel D: Intangible Capital and Physical Capital	
Brands	**0.033**
	(0.021)
Goodwill	0.150
	(0.758)
Physical Capital	**0.008**
	(0.096)
Panel E: Controls for Information Asymmetry, Industry Competitiveness, and Leverage	
ln(1+Age Since IPO)	0.088
	(0.584)
Bid/Ask Spread	**-0.042**
	(0.016)
ln(Analysts)	**3.937**
	(0.089)
Institution	0.019
	(0.000)
Herfindahl	0.361
	(0.638)
Leverage	**-0.486**
	(0.020)
Year fixed effect	Yes
Correct Prediction Rate (%) (CPR)	89.35
pseudo R^2	18.09
Sample Size	684

Table 1 Description of key analysis variables. We record as zero for each of the data items when they are combined with other items and discard the data when they are missing, with the exception of net changes in current debt (Compustat #301), which is set to zero, if missing (Bradshaw, Richardson, and Sloan (2006)).

Variables	Definitions
Cost of capital	
r_{PE}, **Easton (2004)**	$r_{PE} = EPS_1 / \mathrm{P}_0, EPS_1 > 0$
r_{PEG}, **Easton (2004)**	$r_{PEG} = \sqrt{(EPS_2 - EPS_1)/P_0}, EPS_2 > EPS_1$
r_{MPEG}, **Easton (2004)**	$r_{MPEG} = \sqrt{(EPS_2 + r_{MPEG} DPS_1 - EPS_1)/\mathrm{P}_0)}, EPS_2 > EPS_1$
r_{OJ}, **Gode and Mohanram(2003)**	$r_{OJ} = A + \sqrt{A^2 + (EPS_1/\mathrm{P}_0) * (growth_2 - (\gamma - 1)}, growth_2 = \frac{\mathrm{EPS}_2 - \mathrm{EPS}_1}{\mathrm{EPS}_1}$, $A = \frac{1}{2}((\gamma - 1) + \frac{DPS_1}{\mathrm{P}_0}), \gamma - 1 = \mathrm{r_f}$ -3%, where $\mathrm{r_f}$ is the yield on 10-year notes.
r_{RIV}, **Gebhardt, Lee and Swaminathan (2001)**	$P_0 = B_0 + \sum_{i=1}^{11} \frac{E_0[(ROE_i - r_{RIV})B_{i-1}]}{(1+r_{RIV})^i} + \frac{E_0[(ROE_{12} - r_{RIV})B_{11}]}{r_{RIV}(1+r_{RIV})^{11}}$
BR_Rating	1 if the bond rating is between SD (D) and B+, 2 if their bond rating is between BB- and BB+, as a 3 if their rating is between BBB- and BBB+ and finally we classify them as a 4 if their rating is between A- and AAA.
Economic nature of name change	
Tobin's Q	Market value of the assets/book value of the assets. (# 6 – #60 +#199*#25) /(#6)
IFIN	Internal financing. For firms reporting format codes 1, 2 and 3, it equals #123 + #124 + #125 + #126 + #106 + #213 + #217 + #218. For firms reporting format code 7, it equals #123 + #124 + #125 + #126 + #106 + #213 + #217 + #314.
EFIN	External financing which equals net equity financing plus net debt financing. Net equity financing equals the sale of common and preferred stock (#108) less purchase of common and preferred stock (#115) less payments for dividends (#127). Net debt financing equals the issuance of long-term debt (#111) less payments for long-term debt reductions (#114) less the net changes in current debt (#301).
INV	The aggregate investments are computed as follows. For firms reporting format codes 1 to 3, net investments are equal to #128 + #113 + #129 + #219 - #107 - #109. For format code 7, net investments are equal to #128 + #113 + #129 - #107 - #109 - #309 - #310.
Information environment	
Analysts	Number of equity analysts
Volume	Trading volume/the average of outstanding shares
Institution	Institutional ownership
Leverage	Ratio of debt over total assets
Bankdebt	1 for firms which have notes payable or bank debt (#206) and 0 otherwise.
Accounting-based intangible assets	
ADV	Advertising expenses/total operating expenses
R&D	R&D expense/total operating expenses
Goodwill	Balance sheet intangibles. Goodwill=(#204 +#33)/total assets

Table 2 Summary statistics of key analysis variables. Please refer to Table 1 for the definition of the variables. For the pre-name-change period, the variables are measured two years prior to name change. For the post-name-change period, the variables are measured two years following name changes. The first line in each cell is the mean (and the *p*-value to compare the matched paired means); the second line in each cell is the median (and the *p*-value of a Wilcoxon signed-rank test to compare the matched paired medians); the third line in each cell is the percent of the variables measured at the post-name-change period minus the pre-name-change period that are positive (and the *p*-value of a binomial sign test to determine if the percent is significantly greater than 50%); the fourth line in each cell is the number of observations. The last two columns show the *p*-value for differences in means (medians) between brand adoption and radical name changes. Statistics with *p*-values of .10 or lower are highlighted in bold face type.

	Brand Adoption			Radical Change			Brand Adoption vs. Radical Change	
	Before	After	*p*-paired	Before	After	*p*-paired	*p*-before	*p*-after
Panel A: Economic nature of name change								
Tobin's Q	1.797	1.960	**[0.042]**	1.630	1.539	[0.470]	[0.134]	**[0.000]**
	1.251	1.436	**[0.008]**	1.181	1.264	[0.703]	**[0.034]**	**[0.002]**
	53.8%		**[0.081]**	45.98%		[0.804]		
	(446)	(554)		(142)	(111)			
IFIN/ln(sales)	5.289	8.988	**[0.001]**	4.89	5.320	[0.809]	[0.768]	**[0.020]**
	0.947	2.269	**[0.045]**	0.522	0.969	[0.433]	[0.134]	**[0.074]**
	63.3%		**[0.000]**	48.2%		[0.670]		
	(548)	(491)		(139)	(106)			
EFIN/ln(caps)	0.984	1.150	[0.786]	2.508	-3.010	**[0.015]**	**[0.071]**	**[0.057]**
	0.257	0.192	[0.678]	0.232	-0.084	**[0.041]**	[0.841]	**[0.045]**
	46.4%		[0.929]	43.5%		[0.904]		
	(532)	(476)		(140)	(106)			
INV/ln(caps)	4.843	6.458	**[0.032]**	-1.744	-10.420	**[0.033]**	**[0.000]**	**[0.000]**
	0.469	0.684	**[0.071]**	0.203	0.210	[0.764]	**[0.000]**	**[0.001]**
	55.4%		**[0.022]**	48.2%		[0.670]		
	(519)	(462)		(137)	(106)			
Panel B: Information environment								
Analysts	0.258	5.420	**[0.000]**	0.083	2.404	**[0.000]**	[0.114]	**[0.000]**
	0.000	0.000	**[0.000]**	0.000	0.000	**[0.000]**	[0.755]	**[0.000]**
	85.2%		**[0.000]**	76.9%		**[0.000]**		
	(697)	[697)		(193)	(193)			
Volume	0.115	0.123	[0.325]	0.128	0.109	[0.525]	[0.587]	[0.487]
	0.074	0.079	[0.394]	0.056	0.050	[0.258]	**[0.006]**	**[0.000]**
	52.3%		[0.125]	47.0%		[0.812]		
	(681)	[692)		(185)	(190)			
Institution	24.66	26.36	[0.416]	19.62	17.100	[0.562]	[0.149]	**[0.006]**
	15.54	16.63	[0.725]	11.59	7.080	[0.608]	**[0.032]**	**[0.001]**
	56.5%		**[0.019]**	46.2%		[0.756]		
	(276)	[287)		(54)	(58)			
Leverage	0.258	0.283	**[0.076]**	0.284	0.333	[0.129]	[0.244]	**[0.065]**
	0.211	0.246	[0.166]	0.234	0.268	[0.230]	[0.449]	[0.141]
	51.7%		[0.206]	54.0%		[0.185]		
	(629)	(649)		(164)	(163)			
Panel C: Accounting-based intangible assets								
ADV	0.131	0.133	[0.357]	0.067	0.061	[0.962]	**[0.010]**	**[0.029]**
	0.035	0.045	[0.139]	0.033	0.031	[0.660]	[0.273]	[0.257]
	44.0%		[0.918]	42.9%		[0.788]		
	(203)	(184)		(49)	(27)			
R&D	0.146	0.154	[0.607]	0.133	0.157	[0.488]	[0.603]	[0.916]
	0.084	0.109	**[0.093]**	0.097	0.124	[0.385]	[0.452]	[0.343]
	40.0%		[0.996]	29.2%		[0.989]		
	(259)	(226)		(52)	(38)			
Goodwill	0.091	0.155	**[0.000]**	0.084	0.097	[0.611]	[0.185]	**[0.022]**
	0.003	0.020	**[0.004]**	0.000	0.009	**[0.040]**	**[0.009]**	**[0.012]**
	58.1%		**[0.001]**	44.3%		[0.880]		
	(561)	(498)		(143)	(108)			

Table 3. Announcement and post-announcement period excess returns

Real name change is defined as firms with improvements in IFIN/ln(sales) and cosmetic name change is defined as firms without improvements in IFIN/ln(sales). Note that some firms lack information on changes in IFIN/ln(sales). CAR(%) is calculated using a market model regression of firm stock returns on the CRSP equally weighted market index. The estimation window is (-260, -11), with day 0 being the name change announcement**.** ISBM (%) is calculated using a matched control firm for each sample firm. Sample firms are matched to a comparable company based on Fama French (1997) industry, market capitalization, book-to-market and momentum. Each sample firm is matched to a firm in the same industry that did not experience corporate name change during the previous two years. Within industry, matches are made based on the sum of the absolute deviations of size, book-to-market, and momentum rankings. If size, book-to-market, or momentum returns are missing, a match is made with a company in the same industry with missing size, book-to-market, or momentum returns. The Fama-French-Carhart four-factor model (Fama-French three factor plus momentum factor) is used to calculate calendar time portfolio excess returns. Observations with less than 10 returns are excluded. The implied 1-year AR= $[(I + alpha)^{12}-1]$, implied 2-year AR= $[(I + alpha)^{24}-1]$ etc. Securities are purchased or shorted on the month after announcement and held for one to two years. The long/short position is unwound after 12, or 24 months. Superscripts *, **, and *** indicate that the mean abnormal returns in Panels A and B and that alpha of the Fama-French-Carhart four-factor model in Panels C and D differ significantly from zero at the 10%, 5%, and 1% levels, respectively using two-tailed tests. *P*-values in square brackets are for two-tailed t-test for differences in means (medians) between brand adoption and radical name changes and for differences between real name change and cosmetic name change within a specific form of name change. Statistics with *p*-values of .10 or lower are highlighted in bold face type.

	Forms of name changes and nature of name changes					
	Brand Adoption			Radical Change		
	All	Real	Cosmetic	All	Real	Cosmetic
Panel A: Market-adjusted mean excess returns (%)						
CAR(-3,0)	2.696***	3.835***	2.249***	0.718	2.097*	-1.889
Test: Brand Adoption = Radical Change [*P*-value]	**[0.041]**	[0.143]	**[0.041]**			
Test: Real=Cosmetic [*P*-value]		**[0.039]**				**[0.057]**
(N)	(687)	(317)	(189)	(195)	(54)	(62)
Panel B: Mean excess buy-and-hold returns (%) relative to matched companies						
ISBM_Month (1,12)	12.005*	28.619**	0.260	-16.775**	-6.806	-20.395*
Test: Brand Adoption = Radical Change [*P*-value]	**[0.004]**	**[0.058]**	**[0.066]**			
Test: Real=Cosmetic [*P*-value]		**[0.076]**				[0.441]
(N)	(561)	(256)	(172)	(151)	(47)	(53)
ISBM_Month (1,24)	-6.244	30.80**	-35.60***	-21.843	-1.289	-37.370***
Test: Brand Adoption = Radical Change [*P*-value]	**[0.079]**	**[0.050]**	[0.916]			
Test: Real=Cosmetic [*P*-value]		**[0.000]**				**[0.096]**
(N)	(563)	(257)	(172)	(151)	(47)	(53)
Panel C: Equal weighted excess mean return of calendar time portfolios						
Alpha of Fama-French-Carhart_Month (1,12)	0.017***	0.029***	0.028***	0.012	0.045	-0.049
Implied 1-year AR *(%)*	23.012	40.286	39.899	15.780	69.471	-45.560
Test: Brand Adoption = Radical Change [*P*-value]	**[0.066]**	**[0.088]**	**[0.024]**			
Test: Real=Cosmetic [*P*-value]		[0.984]				[0.607]
(N)	(687)	(332)	(194)	(186)	(54)	(62)
Alpha of Fama-French-Carhart_Month (1,24)	0.018***	0.026***	0.007	0.009	0.014*	-0.036
Implied 2-year AR *(%)*	54.150	83.568	18.224	24.327	40.170	-58.581
Test: Brand Adoption = Radical Change [*P*-value]	**[0.077]**	**[0.054]**	[0.185]			
Test: Real=Cosmetic [*P*-value]		**[0.022]**				[0.172]
(N)	(687)	(332)	(194)	(186)	(54)	(62)
Panel D: Long brand adoption/short radical change equal weighted excess returns (%) of calendar time hedge portfolios						
Alpha of Long/Short Fama-French-Carhart_Month (1,12)	0.049***					
Implied 1-year AR *(%)*	13.187					
(N)	(479)					
Alpha of Long/Short Fama-French-Carhart_Month (1,24)	0.039***					
Implied 2-year AR *(%)*	21.618					
(N)	(479)					

Table 4 The estimated cost of equity and cost of long-term borrowing around name changes. We use I/B/E/S consensus forecast of EPS_1 (EPS for the coming fiscal year), EPS_2 (EPS for the fiscal year after the next coming fiscal year) and DPS_1 (dividends per share for the coming fiscal year) to estimate the implied cost of equity capital. In some cases consensus forecast of EPS_3 is also available. If not, we use the five-year long-term growth rate. For the pre-name-change period, the variables are the last annual figures before the name changes. For the post- name-change period, the variables are the third annual figures after the name changes. The first line in each cell is the mean (and the *p*-value to compare the matched paired means); the second line in each cell is the median (and the *p*-value of a Wilcoxon signed-rank test to compare the matched paired medians); the third line in each cell is the number of observations. The last two columns show the *p*-value for differences in means (medians) between brand adoption and radical name changes. Statistics with p-values of .10 or lower are highlighted in bold face type.

Cost of equity capital using analysts' forecasts and cost of borrowing using credit ratings		Brand Adoption			Radical Change			Brand Adoption vs. Radical Change	
		Before	After	*p*-paired	Before	After	*p*-paired	*p*-before	*p*-after
r_{PE}	$r_{PE} = EPS_1 / P_0, EPS_1 > 0$	6.393	5.606	[0.142]	6.610	7.231	[0.159]	[0.695]	[0.254]
		5.652	4.654	**[0.083]**	4.776	4.865	[0.668]	[0.863]	[0.795]
		(250)	(261)		(33)	(46)			
r_{PEG}	$r_{PEG} = \sqrt{(EPS_2 - EPS_1)/P_0}, EPS_2 > EPS_1$	17.038	14.245	**[0.058)**	17.422	18.960	[0.313]	[0.625]	**[0.048]**
		13.650	11.496	**[0.015]**	13.140	14.220	[0.664]	[0.378]	**[0.089]**
		(240)	(257)		(36)	(46)			
r_{MPEG}	$r_{MPEG} = \sqrt{(EPS_2 + r_{MPEG} DPS_1 - EPS_1)/P_0)}, EPS_2 > EPS_1$	15.739	13.340	**[0.005]**	19.000	22.345	[0.611]	[0.243]	**[0.039]**
		14.033	11.882	**[0.002]**	14.660	16.040	[0.604]	[0.500]	**[0.098]**
		(240)	(257)		(37)	(45)			
r_{OJ}	$r_{OJ} = A + \sqrt{A^2 + (EPS_1/P_0) * (growth_2 - (\gamma - 1))}, growth_2 = \frac{EPS_2 - EPS_1}{EPS_1}$, $A = \frac{1}{2}((\gamma - 1) + \frac{DPS_1}{P_0}), \gamma - 1 = r_f$-3%, where r_f is the yield on 10-year notes.	7.681	7.289	[0.324]	5.225	7.364	[0.440]	[0.574]	[0.854]
		8.263	6.268	**[0.069]**	4.470	6.802	[0.528]	[0.110]	[0.941]
		(230)	(263)		(39)	(46)			
r_{RIV}	$P_0 = B_0 + \sum_{i=1}^{11} \frac{E_0[(ROE_i - r_{RIV})B_{i-1}]}{(1 + r_{RIV})^i} + \frac{E_0[(ROE_{12} - r_{RIV})B_{11}]}{r_{RIV}(1 + r_{RIV})^{11}}$	9.354	6.787	**[0.050]**	11.392	14.642	**[0.006]**	[0.122]	**[0.041]**
		6.748	6.376	[0.425]	11.400	13.653	**[0.010]**	[0.114]	**[0.084]**
		(221)	(254)		(37)	(47)			
BR_Rating	1 if the bond rating is between SD (D) and B+, 2 if their bond rating is between BB- and BB+, as a 3 if their rating is between BBB- and BBB+ and finally we classify them as a 4 if their rating is between A- and AAA.	2.082	2.696	**[0.000]**	1.750	1.722	[0.922]	**[0.080]**	**[0.000]**
		2.000	3.000	**[0.000]**	1.000	1.000	[0.871]	**[0.090]**	**[0.000]**
		(140)	(158)		(31)	(36)			

Table 5 Intertemporal analysis of the influence of brand name adoption on cost of equity capital. The dependent variable is the estimated cost of equity capital adjusted for risk free rate. For the pre-name-change period, it is measured at year-end prior to the name changes. For the post-name-change period, it is measured at the end of third year after the name changes. *Post change* dummy equals one for the post-name-change period and zero for the pre-name-change period. *Adoption* equals one for the brand adoption firm and zero for the radical change firm. Other independent variables are measured two years prior to name change and two years following name changes. *Real* dummy equals one for firms with positive improvement in IFIN/ln(sales) and zero otherwise. *Bankdebt* equals one for firms which have notes payable or bank debt (#206) and 0 otherwise. *BR* equals one for firms with rated bonds and zero for firms with unrated bonds. *STD* is the standard deviation of monthly buy-and-hold market-adjusted return from the previous five year ending at the time measuring independent variable. *MAE of forecast earnings* is defined as the average mean absolute error of the preceding five annual I/B/E/S consensus forecasts ending at the time measuring independent variable. $Return_{-12}$ is the one year period buy-and-hold market-adjusted return. Please refer to Table 1 for the detailed definition of the rest of independent variables. Models (1)-(4) are the OLS regressions. Models (5)-(6) are the two-stage least-squares regressions (2SLS) in which we first estimate a probit model of the choice between brand adoption and radical changes, then we estimate a model of cost of equity capital using predicted value of the type of new name from the first model as one of the explanatory variables. In the last model, we use orthogonalized economic performances. *P*-values (in parentheses) are based on White-corrected standard errors. Coefficients with p-values of .10 or lower are highlighted in bold face type. For all regressions, the *P*-value for the significance of the regression equation is 0.000 or lower. — = not applicable.

	Expected Sign	OLS regression: Dep. Variable: r_{MPEG}-r_f (%)				2SLS: Dep. Variable: r_{MPEG}-r_f		Orthogonalized Economic performances
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept		-7.375	0.727	-8.099	0.329	1.628	2.902	-10.998
		(0.418)	(0.957)	(0.520)	(0.981)	(0.492)	(0.161)	(0.368)
Form of name change								
Post change (0,1)	-	-0.758	-0.844	-1.185	-1.198	-2.476	-1.603	-2.903
		(0.300)	(0.407)	(0.380)	(0.480)	(0.472)	(0.521)	(0.499)
Adoption (0,1)	-			**-0.894**	**-0.521**	—	—	**-1.122**
				(0.020)	**(0.023)**	—	—	**(0.020)**
Adoption (Predicted)	-			—	—	**-0.792**	-0.049	—
				—	—	**(0.086)**	(0.107)	—
Post change*Adoption	-			**-4.866**	**-1.836**	**-1.403**	**-3.869**	**-5.827**
				(0.038)	**(0.086)**	**(0.078)**	**(0.037)**	**(0.003)**
Economic performances (Nature of name change)								
Tobin's Q	-	**-1.406**	**-1.221**	**-1.222**	**-1.156**	**-0.183**	**-0.066**	**-1.483**
		(0.016)	**(0.084)**	**(0.047)**	**(0.043)**	**(0.073)**	**(0.087)**	**(0.092)**
IFIN/ln(sales)	-	**- 0.032**	**-0.094**	**-0.056**	**-0.102**	**-0.058**	**-0.045**	**-1.970**
		(0.063)	**(0.072)**	**(0.083)**	**(0.098)**	**(0.042)**	**(0.022)**	**(0.084)**
EFIN/ln(caps)	+	0.133	0.166	0.141	0.169	0.019	0.029	0.053
		(0.817)	(0.450)	(0.527)	(0.450)	(0.672)	(0.472)	(0.981)
INV/ln(caps)	+	**-0.326**	**-0.369**	**-0.352**	**-0.378**	-0.007	**-0.003**	**-0.373**
		(0.006)	**(0.085)**	**(0.022)**	**(0.087)**	(0.152)	**(0.099)**	**(0.029)**
Real (0,1)	-		**-0.598**		**-0.362**		-0.222	
			(0.068)		**(0.098)**		(0.117)	
Post change*Real	-		**-7.332**		**-7.377**		**-3.175**	
			(0.059)		**(0.060)**		**(0.081)**	
Accounting-based intangible assets								
ADV	-	-4.289	-1.678	-5.157	-2.102	1.199	1.278	-4.519
		(0.273)	(0.489)	(0.373)	(0.484)	(0.337)	(0.416)	(0.696)
R&D	-	-4.345	-4.112	-3.265	-3.457	-1.805	-3.187	-2.094
		(0.743)	(0.527)	(0.881)	(0.557)	(0.651)	(0.566)	(0.902)
Goodwill	-	**-6.734**	-8.873	-7.110	**-8.965**	-1.127	-1.122	-6.981
		(0.012)	(0.186)	(0.192)	**(0.088)**	(0.175)	(0.209)	(0.128)
Information environment								
ln(Analysts)	-	**-5.150**	**-5.646**	-5.013	**-5.584**	**-2.309**	**-1.491**	-5.002
		(0.090)	**(0.070)**	(0.113)	**(0.079)**	**(0.002)**	**(0.005)**	(0.113)
Volume	-	**-4.644**	**-8.843**	**-5.751**	**-9.147**	**-8.890**	**-9.785**	**-5.640**
		(0.073)	**(0.021)**	**(0.031)**	**(0.023)**	**(0.049)**	**(0.019)**	**(0.031)**
Institution	-	-0.077	-0.052	-0.072	-0.052	-0.015	-0.016	-0.021
		(0.758)	(0.563)	(0.434)	(0.579)	(0.548)	(0.753)	(0.450)
Leverage	+	14.578	12.069	6.979	13.041	**6.302**	**6.831**	**6.855**
		(0.206)	(0.474)	(0.342)	(0.468)	**(0.074)**	**(0.004)**	**(0.067)**
Bankdebt (0,1)	-	**14.406**	**12.139**	**14.219**	**12.131**	**8.541**	**5.397**	**13.220**

		(0.006)	**(0.026)**	**(0.008)**	**(0.028)**	**(0.020)**	**(0.022)**	**(0.008)**
BR (0,1)	**-**	**-2.589**	**-4.622**	**-2.172**	**-4.413**	**-0.867**	**-0.321**	**- 1.840**
		(0.053)	**(0.056)**	**(0.087)**	**(0.059)**	**(0.052)**	**(0.024)**	**(0.069)**
Volatility and price momentum								
STD	+	**43.433**	**28.932**	**27.746**	**27.186**	**49.951**	**43.304**	**37.746**
		(0.059)	**(0.097)**	**(0.083)**	**(0.045)**	**(0.000)**	**(0.000)**	**(0.078)**
MAE of forecast earnings	+	**7.864**	**2.658**	**1.722**	**1.834**	**1.235**	**1.532**	1.080
		(0.028)	**(0.095)**	**(0.079)**	**(0.079)**	**(0.000)**	**(0.034)**	(0.124)
$Return_{-12}$	+	**11.817**	**12.693**	**12.009**	**12.753**	**12.114**	**12.115**	**10.958**
		(0.027)	**(0.018)**	**(0.026)**	**(0.019)**	**(0.033)**	**(0.033)**	**(0.016)**
Year dummies		Yes	Yes	Yes	Yes	Yes	Yes	Yes
No.		202	202	202	202	202	202	202
R-squared (%)		58.14	61.04	59.77	65.21	62.81	66.65	58.38

Table 6 Intertemporal analysis of the influence of brand name adoption on bond rating. The dependant variable takes a value of four when the bond is rated between A- and AAA, 3 when it is rated between BBB- and BBB+, 2 when it is rated between BB- and BB+, and 1 for the rest. For the pre-name-change period, the bond rating is measured at year-end prior to the name changes. For the post-name-change period, it is measured at the end of third year after the name changes. *Post change* dummy equals one for the post-name-change period and zero for the pre-name-change period. *Adoption* equals one for the brand adoption firm and zero for the radical change firm. Other independent variables are measured two years prior to name change and two years following name changes. *Real* dummy equals one for firms with positive improvement in IFIN/ln(sales) and zero otherwise. *Bankdebt* equals one for firms which have notes payable or bank debt (#206) and 0 otherwise. *STD* is the standard deviation of monthly buy-and-hold market-adjusted return from the previous five year ending at the time measuring independent variable. *Zscore* is the Altman's (1968) Z-score for public firms. Please refer to Table 1 for the detailed definition of the rest of independent variables. Models (1)-(4) are the ordered probit regressions. Models (5)-(6) are the two-stage ordered probit regressions in which we first estimate a probit model of the choice between brand adoption and radical changes, then we estimate a model of bond rating using predicted value of the type of new name from the first model as one of the explanatory variables. In the last model, we use orthogonalized economic performances. *P*-values (in parentheses) are based on White-corrected standard errors. Coefficients with p-values of .10 or lower are highlighted in bold face type. For all regressions, the *P*-value for the significance of the regression equation is 0.000 or lower. — = not applicable.

	Expected Sign	Ordered Probit: Dep. Variable: BR_Rating				Two stage: Dep. Variable: BR_Rating		Orthogonalized Economic performances
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Form of name change								
Post change (0,1)	+	**1.073**	**1.359**	0.193	0.309	0.029	0.151	0.051
		(0.000)	**(0.000)**	(0.725)	(0.606)	(0.976)	(0.882)	(0.938)
Adoption (0,1)	+			0.027	0.054			0.182
				(0.714)	(0.914)			(0.698)
Adoption (Predicted)	+					0.175	0.164	
						(0.814)	(0.833)	
Post change*Adoption	+			**0.908**	**1.224**	**1.796**	**1.785**	**1.138**
				(0.000)	**(0.000)**	**(0.006)**	**(0.007)**	**(0.000)**
Economic performances (Nature of name change)								
Tobin's Q	+	**0.285**	**0.285**	0.270	0.257	0.118	0.139	0.254
		(0.096)	**(0.100)**	(0.116)	(0.145)	(0.155)	(0.123)	(0.225)
IFIN/ln(sales)	+	**0.005**	**0.005**	**0.004**	**0.005**	**0.044**	**0.006**	0.583
		(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
EFIN/ln(caps)	-	-0.068	0.001	0.001	0.001	0.002	0.002	0.047
		(0.578)	(0.240)	(0.255)	(0.161)	(0.216)	(0.198)	(0.283)
INV/ln(caps)	+	**0.263**	0.005	0.002	0.000	-0.001	-0.006	0.021
		(0.072)	(0.527)	(0.713)	(0.930)	(0.571)	(0.326)	(0.832)
Real	+		**0.033**		0.352		0.003	
			(0.073)		(0.147)		(0.240)	
Post change*Real	+		**0.275**		**0.353**		**0.818**	
			(0.089)		**(0.078)**		**(0.007)**	
Accounting-based intangible assets								
ADV	-	-0.578	-0.481	-0.118	-0.111	-0.033	-0.031	-0.209
		(0.556)	(0.823)	(0.792)	(0.914)	(0.432)	(0.432)	(0.375)
R&D	-	-0.072	-0.055	-0.008	-0.007	-0.009	-0.001	-0.0007
		(0.519)	(0.823)	(0.964)	(0.689)	(0.828)	(0.594)	(0.890)
Goodwill	-	-0.421	-0.297	-0.497	-0.364	-0.875	-0.819	-0.512
		(0.328)	(0.496)	(0.252)	(0.406)	(0.119)	(0.214)	(0.238)
Information environment								
Analysts	+	**0.016**	**0.020**	**0.098**	**0.164**	**0.106**	**0.165**	**0.015**
		(0.041)	**(0.010)**	**(0.029)**	**(0.058)**	**(0.095)**	**(0.058)**	**(0.045)**
Volume	+	**0.123**	0.050	0.269	0.010	1.329	0.190	0.013
		(0.094)	(0.195)	(0.868)	(0.995)	(0.754)	(0.632)	(0.993)
Institution	+	**0.005**	**0.005**	**0.006**	0.005	**0.005**	0.006	**0.006**
		(0.095)	**(0.042)**	**(0.071)**	(0.102)	**(0.084)**	(0.146)	**(0.057)**
Leverage	-	**-1.509**	**-1.500**	**-1.507**	**-1.518**	**-2.209**	**-2.259**	**-1.550**
		(0.004)	**(0.004)**	**(0.004)**	**(0.004)**	**(0.026)**	**(0.000)**	**(0.003)**
Bankdebt (0,1)	+	**0.328**	**0.349**	**0.358**	**0.384**	**0.829**	**0.820**	**0.342**
		(0.089)	**(0.073)**	**(0.062)**	**(0.048)**	**(0.019)**	**(0.020)**	**(0.077)**
Volatility and risk								
STD	-	**-11.218**	**-11.870**	**-10.491**	**-10.995**	**-5.487**	**-9.564**	**-10.256**
		(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**

Zscore	+	-0.003	0.020	-0.004	0.024	-0.030	0.039	-0.001
		(0.964)	(0.760)	(0.951)	(0.721)	(0.673)	(0.720)	(0.987)
Year dummies		Yes	Yes	Yes	Yes	Yes	Yes	Yes
No.		194	194	194	194	194	194	194
Pseudo R-squared (%)		44.45	40.54	48.66	48.53	51.88	58.94	48.87
Ord. logit cut-offs:								
Cut-off group 1		-0.955	-1.097	-0.958	-1.055	-0.927	-0.888	-1.016
Cut-off group 2		-0.015	-0.123	-0.008	-0.068	0.947	1.004	0.524
Cut-off group 3		1.647	1.588	1.658	1.664	3.223	3.315	2.120

Table 7. Estimated reputation loss following financial misrepresentation. For each firm in this sample, we search for the company news file of the Lexis-Nexis database, Lexis-Nexis FEDSEC: SECREL, and Lexis-Nexis FEDSEC: CASES for coverage on class actions lawsuits for three years following name change and for payments to shareholders to settle the class actions lawsuits. Class action lawsuits are shareholder lawsuits against the firm, officers, directors and other related parties, as a result of the financial reporting related charges named in federal enforcement actions. CAR(%) is calculated using a market model regression of firm stock returns on the CRSP equally weighted market index. The estimation window is (-260, -11), with day 0 being the announcement of class action lawsuits. To transform the abnormal returns into dollar terms, each abnormal return is multiplied by the firm's market capitalization one day before the event day. The cumulative CAR (-3,0)% loss is the dollar losses summed over all event days for a given firm. The loss for no cooking the books is calculated by multiplying each firm's book value of write-offs by its industry median market-to-book assets ratio using two-digit SIC codes. The book value of write-offs is the largest accounting adjustments defined as (negative one times) the sum of special items, accounting charges, and charge offs (Items 17, 183, and 349) after the name change. If the settlement consists of common stock of the defendant, the payment is valued at the settlement announcement date. There are 22 firms without information on the settlement payments, 3 firms in which the settlement is funded entirely by insurance policies, and 7 firms that the court announced dismissal of the class action lawsuit. *P*-values in square brackets are for two-tailed t-test (two-tailed Wilcoxon signed-rank test) that the mean (median) announcement return is equal to zero. The last two columns show the *p*-value for differences in means (medians) between brand adoption and radical name changes. Statistics with p-values of .10 or lower are highlighted in bold face type. — = not applicable.

	Brand Adoption		Radical Change		Brand Adoption vs. Radical Change	
	Mean	Median	Mean	Median	[*P*-value]	
Panel A: Reputation loss based on CAR (-3,0)						
Cumulative CAR (-3,0)% abnormal returns,	**-16.68%** **[0.000]** (34)	**-9.27%** **[0.048]** (34)	-11.240 [0.115] (5)	-12.27 [0.625] (5)	**[0.092]**	[0.905]
(1) Cumulative CAR (-3,0)% loss ($ millions)	**948.790** **[0.065]** (34)	**37.83** **[0.003]** (34)	60.111 (0.181) (5)	9.209 (0.375) (5)	**[0.096]**	[0.389]
(2) Loss if no cooking the books ($ millions)=(3)*(4)	**857.257** **[0.041]** (34)	**26.56** **[0.000]** (34)	43.842 [0.148] (5)	**27.34** **[0.063]** (5)	**[0.066]**	[0.660]
(3) Book value of write-offs	**571.437** **[0.039]** (34)	**18.94** **[0.000]** (34)	29.296 [0.156] (5)	**21.25** **[0.063]** (5)	**[0.064]**	[0.721]
(4) Industry median market-to-book assets	**1.429** **[0.000]** (34)	**1.372** **[0.000]** (34)	**1.470** **[0.000]** (5)	**1.451** **[0.063]** (5)	[0.777]	[0.644]
(5) Settlement payments of class action lawsuit ($ millions)	19.707 [0.240] (7)	**5.00** **[0.016]** (7)	— (0)	— (0)	—	—
Reputation Loss ($ Millions) =(1)-(2)-(5)	**87.476** **[0.023]** (34)	**16.270** **[0.090]** (34)	16.270 [0.190] (5)	6.389 [1.000] (5)	**[0.064]**	**[0.093]**
Panel B: Reputation loss based on CAR (-2,2)						
Cumulative CAR (-2,2)% abnormal returns,	**-15.41%** **[0.000]** (34)	**-11.70%** **[0.024]** (34)	-12.81% [0.154] (5)	-8.083% [0.125] (5)	**[0.075]**	[0.794]
(1)* Cumulative CAR (-2,2)% loss ($ millions)	**797.590** **[0.099]** (34)	**19.352** **[0.024]** (34)	**16.495** **[0.089]** (5)	17.19 [0.125] (5)	**[0.039]**	[0.887]
Reputation Loss ($ Millions) =(1)*-(2)-(5)	**63.724** **[0.069]** (34)	**12.42** **[0.073]** (34)	4.258 [0.625] (5)	8.890 [0.855] (5)	**[0.066]**	[0.476]

Table 8. Estimated reputation loss for the analysts' extreme downward earnings forecast revisions after name change. We require that both the current and a prior forecast be issued within the same year. FREVEPS1_1st refers to the largest 10% downward EPS forecast revisions for the coming fiscal year. Both the current and prior forecasts are issued within the first year after name change. FREVEPS1_2nd refers to the largest 10% downward EPS forecast revisions for the coming fiscal year. Both the current and prior forecasts are issued within the second year after name change. FREVEPS2_1st refers to the largest 10% downward EPS forecast revisions for the fiscal year after the next. Both the current and prior forecasts are issued within the first year after name change. FREVEPS2_2nd refers to the top 10% downward EPS forecast revisions for the fiscal year after the next. Both the current and prior forecasts are issued within the second year after name change. CAR(%) is calculated using a market model regression of firm stock returns on the CRSP equally weighted market index and observations are clustered by firm using the cluster() option in STATA. The estimation window is (-260, -11), with day 0 being the release of forecast revisions. To transform the abnormal returns into dollar terms, each abnormal return is multiplied by the firm's market capitalization one day before the event day. The cumulative CAR (-3,0)% loss is the dollar losses summed over all event days for a given firm. Impairment loss is calculated by multiplying each firm's book value of write-offs by its industry median market-to-book assets ratio using two-digit SIC codes and is limited to be no greater than the cumulative CAR (-3,0)% loss. The book value of write-offs is the largest accounting adjustments defined as (negative one times) the sum of special items, accounting charges, and charge offs (Items 17, 183, and 349) during or beyond the forecasting period. *P*-values in square brackets are for two-tailed t-test (two-tailed Wilcoxon signed-rank test) that the mean (median) announcement return is equal to zero. The last two columns show the *p*-value for differences in means (medians) between brand adoption and radical name changes. Statistics with p-values of .10 or lower are highlighted in bold face type. — = not applicable.

	Brand Adoption		Radical Change		Brand Adoption vs. Radical Change	
	Mean	Median	Mean	Median	[*P*-value]	
Panel A: Reputation loss based on the release of FREVEPS1_1st						
(1) Cumulative CAR (-3,0)% loss ($ millions)	**14.689** **[0.000]** (339)	**3.143** **[0.000]** (339)	10.820 [0.215] (36)	1.914 [0.168] (36)	**[0.072]**	[0.348]
(2) Impairments	**7.308** **[0.005]** (339)	**0.083** **[0.001]** (339)	3.601 [0.532] (36)	0.000 [1.000] (36)	**[0.057]**	[0.608]
Reputation Loss ($ Millions) =(1)-(2)	**5.457** **[0.000]** (339)	**0.000** **[0.000]** (339)	**3.351** **[0.076]** (36)	**0.000** **[0.000]** (36)	**[0.095]**	[0.299]
Panel B: Reputation loss based on the release of FREVEPS1_2nd						
(1) Cumulative CAR (-3,0)% loss ($ millions)	**18.897** **[0.001]** (313)	**3.259** **[0.000]** (313)	2.873 [0.820] (31)	**5.132** **[0.029]** (31)	**[0.049]**	**[0.097]**
(2) Impairments	3.232 [0.353] (313)	**0.239** **[0.003]** (313)	1.708 [0.892] (31)	**2.289** **[0.061]** (31)	[0.907]	[0.562]
Reputation Loss ($ Millions) =(1)-(2)	**5.265** **[0.000]** (313)	**0.000** **[0.000]** (313)	0.437 [0.161] (31)	0.000 [0.500] (31)	**[0.000]**	**[0.014]**
Panel C: Reputation loss based on the release of FREVEPS2_1st						
(1) Cumulative CAR (-3,0)% loss ($ millions)	**27.468** **[0.000]** (235)	**5.975** **[0.000]** (235)	15.414 [0.139] (29)	3.942 [0.458] (29)	[0. 093]	[0.527]
(2) Impairments	4.428 [0.208] (235)	**0.977** **[0.002]** (235)	1.262 [0.811] (29)	0.000 [1.000] (29)	[0.616]	[0.248]
Reputation Loss ($ Millions) =(1)-(2)	**22.403** **[0.000]** (235)	**0.000** **[0.000]** (235)	**15.849** **[0.071]** (29)	**0.000** **[0.004]** (29)	**[0. 094]**	[0.896]
Panel D: Reputation loss based on the release of FREVEPS2_2nd						
(1) Cumulative CAR (-3,0)% loss ($ millions)	**31.889** **[0.000]** (228)	**3.501** **[0.000]** (228)	**17.003** **[0.045]** (22)	2.503 [0.134] (22)	**[0.053]**	[0.537]
(2) Impairments	**6.366** **[0.021]** (228)	**0.000** **[0.016]** (228)	**16.849** **[0.047]** (22)	2.306 [0.189] (22)	[0.226]	**[0.016]**
Reputation Loss ($ Millions) =(1)-(2)	**21.788** **[0.000]** (228)	**0.000** **[0.000]** (228)	0.062 [0.162] (22)	0.000 [0.500] (22)	**[0.000]**	**[0.044]**