Economic Consequences of Changes in the Lease Accounting Standard: Evidence from Japan

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Abstract
The purpose of this study is to investigate economic consequences of changes in the lease accounting standard in Japan. Especially, this study examines whether capitalization of finance leases have significant effects on firm behavior as to the choice of accounting treatment and the arrangement of leases. Our findings are twofold. First, firms with debt contracting incentives are more likely to choose the exceptional treatment that recognizes only finance leases that make contracts after the adoption of Statement No. 13, Accounting Standard for Lease Transactions. Second, firms choosing the exceptional treatment are more likely to transfer leases from finance leases to operating leases in response to the adoption of Statement No. 13. This study contributes to the literature on recognition versus disclosure and discussions of global convergence of accounting standards because this study focuses on the exceptional treatment of accounting rule.

Keywords: Economic Consequences, Lease Accounting, Recognition versus Disclosure, Exceptional Treatment
1. Introduction

In Japan, finance leases are recognized on lessees’ balance sheet, which is similar to International Financial Reporting Standards (IFRS) (IAS 17) and U.S. generally accepted accounting standard (GAAP) (ASC 840/SFAS 13). However, Japanese firms were basically allowed not to recognize a certain type of finance leases on their balance sheet until 2008. Almost all firms chose this accounting treatment (exceptional treatment). The Accounting Standards Board of Japan (ASBJ), which was established as a private standard setter in 2001, started deliberations on the repeal of the exceptional treatment. Finally, in March 2007, the ASBJ issued Statement No. 13, Accounting Standard for Lease Transactions, and repealed the exceptional treatment. Statement No. 13 was mandatorily adopted for fiscal years beginning on or after April 1, 2008.

When Statement No. 13 was issued, the ASBJ issued Guidance No. 16, Guidance on Accounting Standard for Lease Transactions. Statement No. 13 requires lessees to recognize all finance leases on their balance sheet retroactively. However, Guidance No. 16 permits an important exceptional treatment: Japanese firms are allowed not to recognize a certain type of finance leases that make contracts before the initial adoption of Statement No. 13 on their balance sheet.

Accordingly, there are two accounting treatments when Statement No. 13 was adopted. One is a principle treatment that requires lessees to recognize all finance leases on their balance sheet retroactively. The other is an exceptional treatment that permits lessees to recognize only finance leases that make contracts after the adoption of Statement No. 13. This study describes a firm choosing the principle treatment as “a fully adopted firm” and a firm choosing the exceptional treatment as “a partially adopted firm”.

Using this unique setting, we investigate economic consequences of changes in the lease accounting standard in Japan. Our findings on the economic consequences are twofold. First, firms with debt contracting incentives are more likely to choose the exceptional treatment that allows them to recognize only finance leases that make
contracts after the adoption of Statement No. 13. Second, partially adopted firms are more likely to arrange leases with lessors and transfer leases from finance leases to operating leases than fully adopted firms in response to capitalization of finance leases.

Previous studies show that firms alter their behavior in response to changes in accounting standards related to recognition rules (Abdel-Khalik, 1981; Imhoff and Thomas, 1988; Carter et al., 2007; Balsam et al., 2008; Choudhary et al., 2009; Zhang, 2009; Amir et al., 2010; Brown and Lee, 2011; Hayes et al., 2012; Skantz, 2012; Jones, 2013). One reason for this is that reported accounting numbers are frequently contained in explicit and/or implicit contracts. Explicit and/or implicit contracts are used to mitigate agency conflicts between managers and stakeholders (e.g., Watts and Zimmerman, 1986; Bushman and Smith, 2001; Armstrong et al., 2010; Kothari et al., 2010; Shivakumar, 2013).

Japanese firms also use reported accounting numbers in explicit and/or implicit contracts including debt contracts. In fact, recent empirical evidence on Japanese firms indicates that private debt contracts have used accounting-based covenants such as leverage covenants (Okabe, 2010; Inamura, 2012, 2013; Nakamura and Kochiyama, 2013). Furthermore, Japanese firms with higher leverage ratios set more restricted debt covenants when they issue bonds (Suda, 2004).

Capitalization of leases worsens financial ratios including leverage ratios because amounts of assets and liabilities become larger. Negative economic effects of financial ratios have significant impacts on debt contracts. To avoid these negative economic effects, Japanese firms would avoid capitalization of leases by choosing the exceptional treatment and transferring leases from finance leases to operating leases.

The first objective of our research is to investigate determinants of accounting policy choice in response to changes in the lease accounting standard. Japanese firms can choose either the principle treatment or the exceptional treatment. Capitalization of finance leases has significant impacts on reported accounting numbers. In fact, prior studies find substantial effects of capitalizing finance leases on key financial ratios
including leverage ratios (Nelson, 1963; Ashton, 1985; the Research Committee on the Effects of New Accounting Standard for Lease Transactions, 2006; Hu, 2007). It is expected that capitalizing finance leases has significant negative economic impacts on firms with debt contracting incentives. This study shows that firms with debt contracting incentives are more likely to choose the exceptional treatment that allows Japanese firms to recognize only finance leases that make contracts after the initial adoption of Statement No. 13.

After the adoption of Statement No. 13, new finance lease contracts have to be recognized on lessees’ balance sheet. Capitalization of finance leases has profound impacts on reported accounting numbers, thereby affecting contracts between managers and stakeholders. It is expected that rational managers choose off-balance sheet treatment to avoid such negative economic effects. In fact, prior studies show that managers arrange their lease contracts with lessors and transfer leases from finance leases to operating leases when SFAS 13 was adopted (Abdel-Khalik, 1981; Imhoff and Thomas, 1988). The second objective of our research is to investigate whether Japanese firms arrange their lease contracts to avoid the negative economic impacts of capitalization of finance leases in response to the adoption of Statement No. 13.

A few prior studies investigate whether Japanese firms choose off-balance sheet treatment when they are required to recognize finance leases on their balance sheet. Yamamoto (2010) and Arata (2012) suggest that Japanese firms transfer leases from finance leases to operating leases significantly in response to the adoption of Statement No. 13. These studies provide useful insight into Japanese managers’ behavior, but they do not examine the effects of the accounting policy choice on firm behavior. This study classifies the accounting treatment between the principle treatment and the exceptional treatment. According to this classification, our research investigates the determinants of accounting policy choice; besides, this study explores whether the accounting policy choice affects the arrangement of leases to avoid the negative economic impacts of capitalization of finance leases. When Statement No. 13 was adopted, Japanese firms
could choose the exceptional treatment and avoid the negative effects of capitalization of finance leases; however, some Japanese firms chose the principle treatment. Since fully adopted firms recognized all finance leases on their balance sheet, they did not avoid the negative impacts of capitalization of finance leases. Thus, it is expected that fully adopted firms are less likely to arrange leases than partially adopted firms in response to the adoption of Statement No. 13. This study reports that partially adopted firms are more likely to decrease new finance lease contracts and increase new operating lease contracts than fully adopted firms.

This study makes two contributions to the accounting literature and accounting standard setting. First, our research contributes to the literature on recognition versus disclosure. Previous studies show that new recognition rules lead to changes in firm behavior (Amir and Gordon, 1996; Johnston, 2006; Carter et al., 2007; Balsam et al., 2008; Choudhary et al., 2009; Zhang, 2009; Amir et al., 2010; Choudhary, 2011; Brown and Lee, 2011; Hayes et al., 2012; Skantz, 2012; Cheng and Smith, 2013; Jones, 2013). In particular, previous studies report that lessees transfer leases from finance leases to operating leases when they are required to recognize finance leases on their balance sheet (Abdel-Khalik, 1981; Imhoff and Thomas, 1988; Yamamoto, 2010; Arata, 2012). However, our results indicate that firms not only arrange leases with lessors, but also choose the accounting treatment that permits off-balance sheet treatment when capitalization of finance leases is required. This study investigates both accounting-based firm behavior (e.g., the choice of the exceptional treatment) and real-based firm behavior (e.g., the arrangement of leases). Consequently, this study complements prior studies that examine firm behavior in response to changes in accounting standards related to recognition rules.

Second, our results have implications on discussions of global convergence of accounting standards. Currently, global convergence of accounting standards has progressed worldwide. The IASB and the FASB have discussed lease accounting standard that requires lessees to recognize all leases including finance leases and
operating leases on their balance sheet (IASB, 2009, 2010, 2013). In response to global convergence of accounting standards, each country cannot ignore contextual factors including legal, historical, political, and economic environment (Perera and Baydoun, 2007; Baker et al., 2010; Hellmann et al., 2010; Heidhues and Patel, 2011; Tsunogaya et al., 2011). Through the processes of coordinating contextual factors, each country would permit exceptional treatments of accounting standards. These exceptional treatments would affect firm behavior. Given these contextual factors, it is necessary to investigate how exceptional treatments have effects on economic consequences. Investigating economic consequences of the exceptional treatment is extremely important because the exceptional treatment would be expected to reflect country-specific factors, but would not be supported by global standard setters to promote a single set of accounting standards worldwide.

The remainder of this paper is organized as follows. Section 2 summarizes accounting for leases in Japan, reviews prior research, and develops hypotheses. Section 3 explains our research design to examine economic consequences of capitalization of finance leases. Section 4 provides the reasons for selecting the samples and reports descriptive statistics of variables of this empirical research. Section 5 shows determinant of accounting policy choice for the exceptional treatment and firm behavior as to the arrangement of leases in response to the adoption of Statement No. 13. Section 6 summarizes the conclusions and limitations of this research.

2. Background and Hypothesis Development

2.1 Accounting for Leases in Japan

In June 1993, the Business Accounting Council (BAC) issued the lease accounting standard: Statement of Opinions on Accounting Standards for Lease Transactions. There were no official regulations regarding accounting for leases until this statement was issued; Japanese firms accounted for leases as off-balance sheet following the regulation described by corporation tax law. The number and amount of leases, which are very
similar to purchasing assets with debt financing in terms of the economic substance, increased significantly (BAC, 1993). This Statement was issued to represent faithfully the economic substance of leases on lessees’ financial statements.

The Statement classified leases as finance leases and operating leases, and it required the following accounting treatments: finance leases were recognized on lessees’ balance sheet, and operating leases were not recognized on their balance sheet. These classification and accounting treatments are similar to those of IFRS (IAS 17) and U.S. GAAP (ASC 840/SFAS 13). In Japan, finance leases are classified into two further categories: finance leases that transfer ownership to lessees (FLO) and finance leases that do not transfer ownership to lessees (FLNO).\(^1\) In principle, Japanese firms are required to recognize finance leases on their balance sheet. However, the BAC permitted Japanese firms not to recognize FLNO on their balance sheet if information equivalent to capitalization of finance leases is disclosed in the notes to their financial statements. To avoid the negative economic effects of capitalization of finance leases, almost all firms chose the exceptional treatment.\(^2\)

In 2002, the ASBJ started considering whether the exceptional treatment should be repealed to implement global convergence of accounting standards. The ASBJ deliberated on this issue for four years and finally issued Statement No. 13 in March 2007.\(^3\) Statement No. 13 requires lessees to recognize all finance leases, namely both FLO and FLNO, on their balance sheet as with IFRS (IAS 17) and U.S. GAAP (ASC 840/SFAS 13). Statement No. 13 was mandatorily adopted for fiscal years beginning on

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\(^1\) The Japanese Institute of Certified Public Accountants (JICPA) issued the implementation guidance, *Practical Guidelines on Accounting Standards for, and Disclosure of, Lease Transactions*, in January 1994. The JICPA stated the following criteria to classify leases as either finance leases or operating leases: (a) transfer of the ownership term, (b) grant of the right to purchase term, (c) custom-made or custom-built assets, (d) present value criterion, and (e) useful economic life criterion. When leases satisfy any of the above criteria, they are classified as finance leases. Furthermore, finance leases that satisfy any of the criteria indicated in (a), (b), or (c) are classified as FLO; they are classified as FLNO otherwise (JICPA, 1994).

\(^2\) The Japan Leasing Association (JAL) investigated Japanese listed companies in September 2002 and found that 99.7% of firms that prepared consolidated financial statements following Japanese GAAP chose the exceptional treatment when they accounted for finance leases (JAL, 2003).

\(^3\) More time was needed to issue Statement No. 13 because of strong opposition by a leasing industry and coordination between the lease accounting standard and tax rule (Okamoto, 2009; Kato, 2009).
or after April 1, 2008.\footnote{Early adoption of Statement No. 13 was permitted for fiscal years beginning on or after April 1, 2007.}

When Statement No. 13 was issued, the ASBJ also issued Guidance No. 16. Guidance No. 16, which is the guidance on Statement No. 13, describes an important exceptional treatment. If leases for which the inception of the leases predate the beginning of the initial adoption of Statement No. 13 are classified as FLNO, Guidance No. 16 allows Japanese firms not to recognize these finance leases on their balance sheet. In other words, in principle, Japanese firms are required to recognize all finance leases on their balance sheet retroactively; however, they can choose the exceptional treatment to avoid capitalization of finance leases.

Accordingly, there are two accounting treatments when Statement No. 13 was adopted. One is the principle treatment under which lessees recognize all finance leases on their balance sheet. The other is the exceptional treatment under which lessees recognize only finance leases that make contracts after the initial adoption of Statement No. 13. This exceptional treatment is one of unique accounting rules in Japan. Therefore, the exceptional treatment provides an important setting in investigating global convergence of accounting standards.

2.2 Prior Studies

2.2.1 Firm Behavior in Response to Changes in Accounting Standards

Previous studies show that changes in accounting standards lead firms to alter their behavior. In particular, when accounting rules change from disclosure in notes to recognition in financial statements, firms alter some types of transactions.

Previous studies report that firms conduct accrual-based (accounting-based) and real-based earnings management in response to changes in accounting standards related to recognition rule. For example, when the FASB requires firms to use the fair value method for employee stock options, firms understate fair value of stock options by adjusting option-pricing model assumptions including stock price volatility, dividend
yield, and risk-free interest rates, thereby managing stock option expenses (Johnston, 2006; Choudhary, 2011; Cheng and Smith, 2013). Furthermore, firms accelerate vesting periods of stock options to avoid recognizing existing unvested stock option grants at fair value and stock option expenses (Balsam et al., 2008; Choudhary et al., 2009).

In addition to accrual-based earnings management, firms conduct real-based earnings management in response to changes in recognition rules. For example, firms reduce stock option grants around the adoption of the fair value method (Carter et al., 2007; Brown and Lee, 2011; Hayes et al., 2012; Skantz, 2012). Besides, firms alter their risk management behavior when the derivative accounting rule changes. Zhang (2009) shows that risk exposures related to interest rate, foreign exchange rate, and commodity price significantly decreases for ineffective hedgers/speculators not for effective hedgers.

Firms conduct not only earnings management but also balance sheet management in response to changes in recognition rules. For instance, when the FASB requires firms to recognize postretirement obligations on their balance sheet, firms change actuarial assumptions, postretirement plans, and asset allocation for pension plans to manage balance sheet (Amir and Gordon, 1996; Amir et al., 2010; Jones, 2013). Especially, Jones (2013) finds that the funded status of pension plans improve due to changes in actuarial assumptions, plan amendments, and plan freeze. In addition, her results indicate that firms with debt contracting incentives have a larger increase in the funded status by changing actuarial assumptions. These results suggest that firms conduct not only accounting-based balance sheet management such as changing actuarial assumptions, but also real-based balance sheet management including amending and freezing the pension plans.

In summary, previous studies provide evidence that the different treatments of recognition and disclosure have significant effects on firm behavior. We investigate these effects more comprehensively than previous studies because our research examines both accounting-based and real-based balance sheet management. Especially, this study finds determinants between accounting-based and real-based balance sheet management by
focusing on the exceptional treatment of the lease accounting standard.

2.2.2 Economic Consequences of Capitalization of Leases

Several prior studies investigate the impacts of capitalization of leases on reported accounting numbers (Nelson, 1963; Ashton, 1985; the Research Committee on the Effects of New Accounting Standard for Lease Transactions, 2006; Hu, 2007). When capitalization of leases has significant impacts on reported accounting numbers, it would affect contracts between managers and stakeholders. This assumption is supported by the fact that capitalization of leases increases the possibility of violating debt covenants. In fact, El-Gazzar (1993) shows that capitalization of finance leases has caused significant increases in the tightness of debt covenant restrictions. Therefore, it is expected that rational managers choose off-balance sheet treatment to avoid such economic impacts (El-Gazzar et al., 1989).

Abdel-Khalik (1981) indicates that managers arranged their lease contracts with lessors and transferred leases from finance leases to operating leases to avoid capitalization of finance leases when SFAS 13 was adopted. Similarly, Imhoff and Thomas (1988) examine capital structure changes in response to the adoption of SFAS 13 and find a systematic substitution from finance leases to operating leases and non-lease sources of financing. Especially, they show that U.S. firms with larger amounts of leases are more likely to decrease finance leases substantially and increase operating leases correspondingly to avoid the negative economic effects of capitalization of finance leases.


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5 More recent studies focus on capitalization of operating leases because the G4+1 proposed that not only finance leases but also non-cancelable operating leases should be recognized on lessees’ balance sheet (McGregor, 1996; Nailor and Lennard, 2000). Previous studies show that capitalization of operating leases has significant impacts on key financial ratios including leverage ratios (Beattie et al., 1998; Goodacre, 2003; Bennett and Bradbury, 2003; Fülbier et al., 2008; Durocher, 2008; Duke et al., 2009; Fitó et al., 2013). Barone et al. (2014) survey literature on impacts of capitalization of operating leases in more details.
However, their results do not show that firms tend to transfer leases from finance leases to operating leases in response to changes in the lease accounting standards.

In Japan, Yamamoto (2010) examines firm behavior in response to the adoption of Statement No. 13. He finds that Japanese listed manufacturing firms transfer leases from finance leases to operating leases significantly in the fiscal years ended March 31, 2008 and March 31, 2009. Arata (2012) also investigates whether Japanese firms change their investment behaviors when Statement No. 13 was adopted. Her findings indicate a systematic substitution from finance leases to operating leases after the adoption of Statement No. 13.

In summary, previous studies examine economic consequences of capitalization of finance leases including economic effects on reported accounting numbers and firm behavior. This study extends previous studies by focusing on the exceptional treatment of accounting rule to investigate firm behavior in response to capitalization of finance leases. In particular, this study shows firm behavior by analyzing accounting-based balance sheet management such as choosing the exceptional treatment, in addition to real-based balance sheet management including the arrangement of leases with lessors.

2.3 Hypothesis Development

Japanese firms can choose either the principle treatment or the exceptional treatment in response to the adoption of Statement No. 13. The principle treatment requires firms to recognize all finance leases retroactively, and the exceptional treatment allows firms to recognize only finance leases that make contracts after the initial adoption of Statement No. 13. Capitalization of finance leases would have significant impacts on reported accounting numbers and key financial ratios including leverage ratios (Nelson, 1963; Ashton, 1985; the Research Committee on the Effects of New Accounting Standard for Lease Transactions, 2006; Hu, 2007).

Capitalization of finance leases would affect explicit and/or implicit contracts between managers and stakeholders. For example, contracts include debt contracts
between lenders and shareholders (managers) (e.g., Smith and Warner, 1979; Leftwich, 1983). Reported accounting numbers including total assets, liabilities, equity, and net income are frequently used to confirm the implementation of these contract terms (Watts and Zimmerman, 1986). Capitalization of leases worsens financial ratios such as leverage ratios because the amounts of assets and liabilities become larger than the case of off-balance sheet financing. Accordingly, worsening financial ratios have substantial effects on debt contracts.

Japanese firms traditionally rely on borrowing from a large commercial bank (i.e., main bank) (Aoki and Sheard, 1994; Hoshi and Kashyap, 2001). Under the main bank system, a transaction between a firm and a main bank is a negotiated lending. However, the financial crisis in the 1990s happened in Japan changed this relationship significantly, thereby increasing a syndicated lending that provides money to a borrower by two or more banks. Private debt contracts including syndicated loan agreements need certain terms between borrowers and lenders, and then accounting-based covenants are used to monitor the contract (Dichev and Skinner, 2002; Ball et al., 2008; Armstrong et al., 2010; Christensen and Nikolaev, 2012; Taylor, 2013). Private debt contracts in Japanese firms also include accounting-based covenants such as leverage ratios (Okabe, 2010; Inamura, 2012, 2013; Nakamura and Kochiyama, 2013).

Furthermore, since January 1996 the abolition of “issue standards” that restrict Japanese firms to issue bonds has made it possible to set debt covenants freely. Public debt contracts in Japanese firms are more likely to include collateral-based covenants than accounting-based covenants (Suda, 2004). However, Suda (2004) shows that Japanese firms with higher leverage ratios set more restricted debt covenants when they issue bonds. In this case, it is assumed that debt contracts are statistically correlated with leverage ratios.

Given that capitalization of finance leases has significant impacts on financial ratios, the principle treatment is more likely to have the negative effects on contracts than the exceptional treatment. In particular, the principle treatment significantly has impacts on
firms with debt contracting incentives. Furthermore, capitalization of finance leases would have impacts on firms using larger amounts of finance leases. We predict that these firms would choose the exceptional treatment to avoid the negative economic impacts when Statement No. 13 was adopted. Therefore, we develop the following hypotheses to examine the choice of accounting treatment of finance leases (stated in the alternative form):

**Hypothesis 1(a):** Firms with debt contracting incentives are more likely to choose the exceptional treatment upon the initial adoption of Statement No. 13.

**Hypothesis 1(b):** Firms with larger amounts of finance leases are more likely to choose the exceptional treatment upon the initial adoption of Statement No. 13.

After Statement No. 13 was initially adopted, Japanese firms are required to recognize new financial contracts on their balance sheet. If capitalization of finance leases had significant impacts on financial ratios, rational managers would choose off-balance sheet treatment to avoid the negative economic effects (El-Gazzar et al., 1989). They would arrange their lease contracts with lessors and transfer leases from finance leases to operating leases (Abdel-Khalik, 1981; Imhoff and Thomas, 1988; Yamamoto, 2010; Arata, 2012).

Japanese firms could choose the exceptional treatment to avoid the negative effects of capitalization of finance leases in response to the adoption of Statement No. 13. Nevertheless, some Japanese firms chose the principle treatment and recognized all finance leases on their balance sheet retroactively. Firms choosing the principle treatment, namely fully adopted firms, would not have to avoid the negative effects of capitalization of finance leases when Statement No. 13 was adopted. It would be possible that fully adopted firms do not arrange leases to avoid the impacts of capitalizing finance leases after the adoption of Statement No. 13. On the other hand, firms choosing the exceptional treatment, namely partially adopted firms, would need to arrange leases to avoid the negative impacts of capitalization of new finance lease contracts in response to the adoption of Statement No. 13. Accordingly, partially adopted firms are more likely to
transfer leases from finance leases to operating leases after the adoption of Statement No. 13.

Thus, we predict that partially adopted firms are more likely to arrange leases than fully adopted firms in response to the adoption of Statement No. 13. Therefore, we develop the following hypotheses to examine firm behavior concerning the arrangement of leases (stated in the alternative form):

**Hypothesis 2:** Partially adopted firms are more likely to decrease new finance lease contracts than fully adopted firms in response to the adoption of Statement No. 13.

**Hypothesis 3:** Partially adopted firms are more likely to increase new operating lease contracts than fully adopted firms in response to the adoption of Statement No. 13.

3. Research Models for Testing Hypotheses

3.1 Research Model for Hypothesis 1

To test Hypothesis 1, this study analyzes accounting policy choice upon the initial adoption of Statement No. 13. Thus, this research examines determinants of the exceptional treatment in the fiscal year when Statement No. 13 was adopted. Our study uses the following probit regression model to test Hypotheses 1(a) and 1(b):

\[
P(r(\text{PAF}_{t} = 1)) = \\
\alpha_0 + \alpha_1 \text{LEV}_{it-1} + \alpha_2 \text{RFL}_{it-1} + \alpha_3 \text{SIZE}_{it-1} + \alpha_4 \text{MTB}_{it-1} + \text{Industry dummy} + \varepsilon_{it},
\]

(1)

where PAF is an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise; RFL is the ratio of finance leases, which is finance lease obligations divided by the sum of tangible assets and finance lease obligations; LEV is debt divided by book value of equity; SIZE is the natural log of total assets; MTB is market value of equity divided by book value of equity; and Industry dummy is industry dummy variables.
Hypothesis 1(a) predicts that firms with debt contractive incentives are more likely to choose the exceptional treatment to avoid the negative effects of capitalization of finance leases when Statement No. 13 was initially adopted. Previous studies show that Japanese firms use leverage ratios in private debt contracts (Okabe, 2010; Inamura, 2012, 2013; Nakamura and Kochiyama, 2013). In addition, previous literature reports that debt contracts are correlated with the leverage ratio (Suda, 2004). This implies that the larger the leverage ratio (LEV) is, the more often firms will choose the exceptional treatment to avoid the negative effects of capitalizing finance leases on debt contracts. If firms with debt contractive incentives are more likely to choose the exceptional treatment, the sign of the coefficient in the regression model is expected to be positive ($\alpha_1 > 0$).

Hypothesis 1(b) predicts that firms with larger finance leases are more likely to choose the exceptional treatment to avoid the negative impacts of capitalization of finance leases when Statement No. 13 was initially adopted. This study uses the ratio of finance leases (RFL) as a proxy for the propensity to use finance leases. This is because the ratio is used as a criteria in which the amount of finance leases is considered to be immaterial or not in Japanese accounting rule. The larger RFL is, the more often firms will choose the exceptional treatment. Accordingly, the sign of the coefficient in the regression model is expected to be positive ($\alpha_2 > 0$). Besides, this study includes firm size (SIZE) and growth opportunity (MTB) as control variables for choosing the accounting treatment. If larger and higher growth firms are increasingly more profitable and can afford to choose the principle treatment, the signs of the coefficients in the regression model will be negative.\(^7\)

\(^6\) In principle, Japanese GAAP requires lessees to measure finance lease assets and obligations at the present value at the inception of lease terms. However, if the ratio of finance leases is less than 10%, Japanese firms are allowed to use a simplified treatment that substitutes the pre-discount amount of finance lease payments for the present value of finance lease assets and obligations.

\(^7\) This study also includes standard deviation of ROA for four years to control business risk. Unreported results show that including this control variable does not change our main results and the coefficients of the variable are not statistically significant. In order to maximize the number of useful observations, our research excludes this variable.
3.2 Research Models for Hypotheses 2 and 3

Hypotheses 2 and 3 predict that partially adopted firms are more likely to arrange leases than fully adopted firms in response to the adoption of Statement No. 13. This study expects that partially adopted firms are more likely to decrease new finance lease contracts and increase new operating lease contracts than fully adopted firms when Statement No. 13 was adopted. Using the difference-in-differences approach, this study employs the following equations to test Hypotheses 2 and 3:

\[
NewFL_{it} = \beta_0 + \beta_1 PAF + \beta_2 T + \beta_3 PAF \times T + \beta_4 LEV_{it-1} + \beta_5 SIZE_{it-1} + \beta_6 ROA_{it-1} + \beta_7 MTB_{it-1} + \beta_8 TAX_{it-1} + Industry \ dummy + \epsilon_{it},
\]

\[
NewOL_{it} = \gamma_0 + \gamma_1 PAF + \gamma_2 T + \gamma_3 PAF \times T + \gamma_4 LEV_{it-1} + \gamma_5 SIZE_{it-1} + \gamma_6 ROA_{it-1} + \gamma_7 MTB_{it-1} + \gamma_8 TAX_{it-1} + Industry \ dummy + \mu_{it},
\]

where NewFL is new finance lease contracts; NewOL is new operating lease contracts; PAF is an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise; T is an indicator variable that takes the value of 1 if a firm adopts Statement No. 13, and 0 otherwise; PAF × T is an interaction term between PAF and T; LEV is debt divided by book value of equity; SIZE is the natural log of total assets; ROA is business income divided by total assets; MTB is market value of equity divided by book value of equity; TAX is marginal tax rate; and Industry dummy is industry dummy variables.

We assume that partially adopted firms are more likely to arrange leases than fully adopted firms to avoid the negative economic effects of capitalization of finance leases in response to the adoption of Statement No. 13. If partially adopted firms are more likely to

\[8\] This study uses the pre-discount amounts for new lease contracts. When Japanese firms use a principle treatment that measures finance lease assets and obligations at the present value at the inception of lease term, this study estimates the pre-discount amounts of finance leases using the interest rates of finance leases disclosed in the supplementary statements or in the notes to financial statements.

\[9\] Following Graham (1996) and Suzuki (2002), this study uses the trichotomous variable for corporate tax rate. In calculating the marginal tax rate, this study uses net income before tax as proxy for taxable income.
decrease new finance lease contracts and increase new operating lease contracts than fully adopted firms when Statement No. 13 was adopted, the signs of the coefficients in the regression models are expected to be $\beta_3 < 0$ and $\gamma_3 > 0$, respectively.

On the other hand, even though Japanese firms were allowed to choose the exceptional treatment, some firms chose the principle treatment when Statement No. 13 was initially adopted. Fully adopted firms did not avoid the negative impacts of capitalization of finance leases through choosing the exceptional treatment. Thus, it is possible that fully adopted firms do not have incentives to arrange leases in response to the adoption of Statement No. 13. Accordingly, we do not predict the signs of the coefficients for fully adopted firms after the adoption of Statement No. 13.

We include control variables for arranging leases. Because previous studies report that leverage, firm size, performance, growth opportunities, tax rates, and asset type are correlated with lease contracts (e.g., Smith and Wakeman, 1985; Krishnan and Moyer, 1994; Sharpe and Nguyen, 1995; Graham et al., 1998; Eisfeldt and Rampini, 2009), our study use LEV, SIZE, performance (ROA), MTB, the marginal tax rate (TAX), and Industry dummy as control variables. Prior studies document that financially constrained firms are more likely to choose leases than debt financing (Krishnan and Moyer, 1994; Sharpe and Nguyen, 1995; Eisfeldt and Rampini, 2009). We expect that LEV will be positively correlated with NewFL and NewOL. Besides, larger firms are less likely to be financially constrained, and thus SIZE is expected to have negative coefficients in the regression models. In addition, since financially constrained firms are generally bad performance firms, these firms probably face higher funding cost and are more likely to choose leases. Accordingly, we predict that the sign of the coefficients of ROA in the regression models will be negative. Firms with growth opportunities are more likely to choose leases than debt financing. This is because these firms face agency problems of debt financing including asset substitution and underinvestment (Myers, 1977). Leases solve these problems since they are associated with specific assets (Krishnan and Moyer, 1994). Thus, the sign of the coefficients of MTB is expected to be
positive. In addition, prior studies describe that firms with low marginal tax rates are more likely to use leases than firms with high marginal tax rates (Smith and Wakeman, 1985; Graham et al., 1998), and thus it is predicted that MTR is positively associated with NewFL and NewOL. Lastly, Smith and Wakeman (1985) describe that the propensity to lease assets are related with asset type, and prior studies use dummy variables for industry as a proxy for asset type (Krishnan and Moyer, 1994; Sharpe and Nguyen, 1995; Graham et al., 1998). We include Industry dummy to control asset type.

4. Sample Selection and Descriptive Statistics

The sample is selected from the period 2006–2009 using the following criteria:

(i) Firms that use Japanese GAAP are listed on stock exchanges in Japan.
(ii) Banks, securities firms, insurance, and other financial firms are deleted.
(iii) Fiscal year ends on March 31.
(iv) The accounting period has not changed during fiscal year.

In 2002, the ASBJ started considering whether the exceptional treatment to FLNO should be repealed, and deliberated on this issue for four years. In March 2004, the ASBJ issued the Interim Report that summarized the contents of discussions and recommended the suspension of the project. In December 2005, the ASBJ restarted the lease project to repeal the exceptional treatment. Finally, in March 2007, Statement No. 13 was issued and mandatorily adopted for fiscal years beginning on and after April 1, 2008. Considering these standard setting processes, this study’s sample period starts in 2006. In addition, since the global financial crisis had negative effects on Japanese firms, they might reduce investments including leases during this period. To mitigate the effects of the global financial crisis, we end the sample period in 2009.

Using the above four criteria, we obtain our initial sample of 8,763 observations of consolidated financial statement and share price data from the *Nikkei NEEDS Financial*
Our research requires the accounting data on both finance leases and operating leases. Both types of leases are available for a sample of 3,913 firm-year observations. We delete 627 observations that lack data on variables to test our hypotheses. In addition, we exclude 7 observations with negative total assets or a negative book value of equity at the beginning of the fiscal year. Our final sample consists of 3,279 firm-year observations. In order to control for outliers, we also trim continuous variables at the top and bottom 1% to test our hypotheses.

Table 1 presents the descriptive statistics for the variables used in this study. Panel A shows the descriptive statistics for the variables to test Hypothesis 1. The mean of partially adopted firms (PAF) is 0.8637. About 86% of sample firms in this study choose the exceptional treatment when Statement No. 13 was initially adopted. This result suggests that many managers consider that there are crucial differences between disclosure in notes and recognition in financial statements, and they avoid the negative effects of capitalizing finance leases by choosing the exceptional treatment. Panel B reports the descriptive statistics for the variables of Hypotheses 2 and 3. The mean (median) of NewFL, which is the amount of new finance lease contracts, is 0.0047 (0.0016). In addition, the mean (median) of NewOL, which is the amount of new operating lease contracts, is 0.0044 (0.0003).

Table 2 describes the correlation matrix for the variables used in this study. The upper right-hand area of the table reports the Spearman rank-order correlations, and lower left-hand area of the table reports Pearson correlations. Panel A reports the

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10 We exclude firm-year observations for finance institutions because they tend to be net lessors. In addition, firms in regulated industries may have different incentives to leases. Although we include utility firms in our sample, excluding them from our sample do not change our main results (unreported table).

11 We require that both finance lease obligations (the sum of future minimum lease payments under finance leases and finance lease debts) and future minimum lease payments under operating leases exceed zero. We set missing payment values to zero. We delete observations from our sample when finance lease obligations or future minimum lease payments under operating leases are zero at both the beginning and the end of the fiscal year.
correlation matrix for the variables to test Hypothesis 1. In both correlation analyses, the leverage ratio (LEV) is positively and significantly associated with PAF. Besides, in the Spearman correlation analysis, the rate of finance leases (RFL) is positively and marginally associated with PAF. These results suggest that firms with debt contractive incentives and larger amounts of finance leases are more likely to choose the exceptional treatment, as predicted. Panel B shows the correlation matrix for the variables of Hypotheses 2 and 3. In the Spearman correlation analysis, the coefficient of correlation between NewFL and the adoption period of Statement No. 13 (T) is negative and statistically significant. Furthermore, in the Pearson analysis, the correlation between NewOL and T are positively significant. These results indicate that Japanese firms transfer leases from finance leases to operating leases in response to the adoption of Statement No. 13. Most correlations between independent variables are relatively low.

5. Results
5.1 Main Results
First, this study analyzes the choice of accounting treatment upon the initial adoption of Statement No. 13 using the regression model (1). Table 3 reports the results of Hypotheses 1(a) and 1(b). Industry fixed effects are included but not tabulated. The table excludes 42 observations that are included in Panel A of Table 1 since fixed effects perfectly predict the choice of accounting treatment.\(^\text{12}\)

\[<\text{Insert Table 3}>\]

In column (1) of Table 3, the coefficient of LEV, 0.2038, is positive and statistically significant at the 1% level, as predicted. This result indicates that firms with debt contractive incentives are more likely to choose the exceptional treatment. Column (2)

\(^{12}\) This study defines industry using the Nikkei industry classification code (Nikkei gyosyu chu-bunrui). Firms in textile and apparel, petroleum, rubber, transportation equipment, marine transport, electric power, or gas industries are deleted from Panel A of Table 1. This study also excludes industry fixed effects from the regression model (1) and examines the choice of accounting treatment upon the initial adoption of Statement No. 13. Excluding industry fixed effects does not change our main results (unreported table).
reports that the coefficient of RFL is not consistent with expected sign, and not statistically significant. This result does not indicate that firms with larger amount of finance leases are more likely to choose the exceptional treatment. Column (3) shows the results when we include LEV and RFL in the regression model simultaneously; the coefficient of LEV is consistent with expected sign and statistically significant at the 1% level, but the coefficient of RFL is not statistically significant. This evidence shows that we support Hypothesis 1(a), but do not support Hypothesis 1(b).

Next, our research uses the equations (2) and (3) to investigate whether partially adopted firms, which choose the exceptional treatment, are more likely to arrange leases than fully adopted firms, which choose the principle treatment, in response to the adoption of Statement No. 13. Table 4 summarizes the results for regression models in testing Hypotheses 2 and 3.

<Insert Table 4>

In column (1) of Table 4, this study shows the result of Hypothesis 2. The coefficient of $PAF \times T$, -0.0018, is negative and statistically significant at the 1% level, as predicted. This result is in accordance with Hypothesis 2, suggesting that partially adopted firms are more likely to decrease new finance lease contracts than fully adopted firms in response to the adoption of Statement No. 13. The coefficient of T is positive and statistically significant at the 1% level. The result shows that fully adopted firms are more likely to increase new finance lease contracts when Statement No. 13 was adopted. Since fully adopted firms did not have to avoid the negative impacts of capitalization of finance leases through choosing the exceptional treatment, they are less likely to arrange leases in response to the adoption of Statement No. 13. Our results reports crucial different behavior between fully adopted firms and partially adopted firms with regard to finance leases.

Column (2) of Table 4 reports the result of Hypothesis 3. The coefficient of T is positive and statistically significant. The result indicates that fully adopted firms are more likely to increase new operating lease contracts when Statement No. 13 was
adopted. In addition, the coefficient of $PAF \times T$, 0.0019, is consistent with expected sign and statistically significant at the 1% level. This result supports Hypothesis 3, which partially adopted firms are more likely to increase new operating lease contracts than fully adopted firms in response to the adoption of Statement No. 13. Our results indicate that Japanese firms increase new operating lease contracts when Statement No. 13 was adopted, but the size of new operating lease contracts is substantially different between fully adopted firms and partially adopted firms. Partially adopted firms are more likely to avoid the negative effects of capitalization of finance leases.

In summary, firms with debt contractive incentives are more likely to choose the exceptional treatment to avoid the negative effects of capitalizing finance leases upon the initial adoption of Statement No. 13. In addition, to avoid these negative effects, firms choosing the exceptional treatment, namely partially adopted firms, are more likely to arrange leases than fully adopted firms in response to capitalization of finance leases. Our results show that Japanese firms largely conduct not only accounting-based balance sheet management such as choosing the exceptional treatment, but also real-based balance sheet management including arranging leases with lessors to avoid the negative impacts of capitalizing finance leases on debt contracts.

5.2 Robustness Test

In the previous subsection, this study found that firms with debt contracting incentives were more likely to choose the exceptional treatment, and these firms were more likely to arrange leases than fully adopted firms in response to the adoption of Statement No. 13. This subsection describes the analysis conducted to determine the robustness of our findings.

Table 5 reports the results of Hypothesis 1 by adding the ratio of operating leases (ROL). It is expected that the amounts of operating leases would have effects on the choice of accounting treatment. If firms with debt contractive incentives and larger
amounts of finance leases are more likely to conduct operating leases, these firms are more likely to choose the exceptional treatment upon the initial adoption of Statement No. 13. In column (1) of Table 5, the coefficient of LEV is consistent with expected sign and statistically significant at the 1% level. On the other hand, column (2) reports that the coefficient of RFL is not consistent with expected sign, and not statistically significant. Column (3) also shows that the coefficient of LEV is consistent with expected sign and statistically significant at the 1% level, but the coefficient of RFL is not statistically significant. In columns (1)–(3), the coefficients of ROL are consistent with expected sign, but not statistically significant. These results show that firms with debt contractive incentives are more likely to choose the exceptional treatment. Besides, we analyze the choice of accounting treatment upon the first mandatory adoption year of Statement No. 13. Unreported results show that the coefficients of LEV are positive and statistically significant; however, the coefficients of RFL are not consistent with expected sign, and not statistically significant. Overall, we support Hypothesis 1(a), but do not support Hypothesis 1(b) again.

In addition, we retest Hypotheses 2 and 3 by considering the interaction between finance leases and operating leases. Estimating the residuals by using the equations (2) and (3), we include the residual estimated by the equation (3) into the equation (2), vice versa. Unreported results show that the coefficients of $PAF \times T$ are statistically significant. We also analyze the correlation between each residual and find that the coefficients of each residual are statistically significant. This unreported result suggests that firms decide finance leases and operating leases simultaneously.

Besides, we make a new dependent variable, which subtracts NewFL from NewOL, to investigate whether lessees transfer leases from finance leases to operating leases. We analyze the arrangement of leases by using the above dependent variable and the same independent variables in the equations (2) and (3). If the coefficient of $PAF \times T$ is positive and statistically significant, this result indicates that partially adopted firms are more likely to arrange leases than fully adopted firms in response to the adoption of
Statement No. 13. Unreported result reports that the coefficient of $PAF \times T$ is positive and statistically significant, as predicted.

Furthermore, we correct endogenous problem to test Hypotheses 2 and 3. Firms would choose either the principle treatment or the exceptional treatment and conduct the arrangement of leases: the accounting policy choice affects the arrangement of leases. Since the choice of accounting treatment is endogenous, it is necessary to correct selection bias (Tucker, 2010; Lennox et al., 2012). Accordingly, we use the treatment effects model to correct the selection bias. For the sample period 2006–2009, we estimate the inverse Mills' ratio (MILLS), or the hazard using the equation (1) that excludes RFL. We include MILLS into the equations (2) and (3) that exclude some control variables.

Table 6 reports the results of Hypotheses 2 and 3 by using the treatment effects model. In column (1) of Table 6, this study shows the result of Hypothesis 2. The coefficient of $PAF \times T$ is consistent with expected sign and statistically significant at the 1% level. Column (2) reports the result of Hypothesis 3. The coefficient of $PAF \times T$, 0.0022, is positive and statistically significant at the 1% level, as predicted. These results suggest that partially adopted firms are more likely to decrease finance leases and increase operating leases than fully adopted firms in response to capitalization of finance leases. We support Hypotheses 2 and 3 again.

In Summary, we conduct several robustness tests including correcting endogenous problem, and the results do not change our main results. Overall, these results confirm the robustness of our findings.

6. Concluding Remarks
This study investigated economic consequences of changes in the lease accounting standard in Japan. Our research highlighted whether capitalization of finance leases had significant effects on firm behavior as to the choice of accounting treatment and the arrangement of leases. This study provided deeper insights into the controversial debate.
on lease accounting internationally, as follows.

First, this study examined the choice of accounting treatment in response to capitalization of finance leases. Japanese firms could choose either the principle treatment or the exceptional treatment upon the initial adoption of Statement No. 13. Our findings showed that firms with debt contracting incentives were more likely to choose the exceptional treatment. This result indicates that firms chose the exceptional treatment to avoid the negative effects of capitalization of finance leases.

Next, this study investigated whether partially adopted firms were more likely to arrange leases than fully adopted firms in response to the adoption of Statement No. 13. Since fully adopted firms recognize all finance leases on their balance sheet retroactively upon the initial adoption of Statement No. 13, they are less likely to arrange leases with lessors than partially adopted firms choosing the exceptional treatment. This study found that partially adopted firms were more likely to decrease new finance lease contracts and increase new operating lease contracts than fully adopted firms in response to the adoption of Statement No. 13. These results suggest that partially adopted firms arranged leases more actively than fully adopted firms to avoid the negative effects of capitalization of finance leases.

Overall, this study found that firms with debt contracting incentives were more likely to choose the exceptional treatment, and these firms were more likely to arrange leases than fully adopted firms in response to the adoption of Statement No. 13. These results documented that Japanese firms mostly conducted both accounting-based and real-based balance sheet management to avoid the negative effects of capitalizing finance leases on debt contracts.

Despite the sharper insights with regard to firm behavior facing changes in the lease accounting standard in Japan, this study has several limitations. For instance, this study did not examine economic consequences of changes in the lease accounting standard for a long-term. In particular, this study did not investigate the difference of economic consequences between fully adopted firms and partially adopted firms after the adoption
of Statement No. 13. Although fully adopted firms would incur more costs when they adopted Statement No. 13 and capitalized all finance leases retroactively, they would expect certain benefits from choosing the principle treatment. It is a unique research question to investigate these consequences and motivations of Japanese managers to select the principle treatment. Such an examination would provide a more comprehensive understanding of economic consequences of changes in accounting standards.
References


Hoshi, T., and A. Kashyap (2001), Corporate Financing and Governance in Japan: The Road to the Future, MIT Press.
International Accounting Standards Board: IASB (2009), Discussion Paper, Leases – Preliminary Views, IASB.
International Accounting Standards Board: IASB (2010), Exposure Draft, Leases, IASB.
International Accounting Standards Board: IASB (2013), Exposure Draft, Leases, IASB.
International Accounting Standards Committee: IASC (1982), International Accounting Standards (IAS) No. 17, Leases, IASC.


Table 1: Descriptive Statistics

Panel A: Hypothesis 1

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<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
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<th>Median</th>
<th>p75</th>
<th>Max</th>
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<td>0.3433</td>
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<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
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<td>0.0001</td>
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<td>0.0262</td>
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</tbody>
</table>

Notes:
All continuous variables are trimmed at the top and bottom 1%.
PAF = an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise.
LEV = debt divided by book value of equity.
RFL = finance lease obligations (future minimum lease payments under finance leases) divided by the sum of tangible assets and finance lease obligations.
SIZE = natural log of total assets.
MTB = market value of equity divided by book value of equity.
Table 1: Descriptive Statistics (Continued)

Panel B: Hypotheses 2 and 3

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<th>Mean</th>
<th>SD</th>
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<th>p25</th>
<th>Median</th>
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Notes:
All continuous variables are trimmed by year at the top and bottom 1%.
NewFL = the changes in pre-discounted finance lease obligations (the sum of future minimum lease payments under finance leases and finance lease debts) summed by previous year’s short-term pre-discounted finance lease obligations
NewOL = the changes in future minimum lease payments under operating leases summed by previous year’s short-term future minimum lease payments under operating leases
PAF = an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise
T = an indicator variable that takes the value of 1 if a firm adopts Statement No. 13, and 0 otherwise
LEV = debt divided by book value of equity
SIZE = natural log of total assets
ROA = business income, which sums operating income and financial income (interest income, discount income, and interest on securities), divided by total assets
MTB = market value of equity divided by book value of equity
TAX = statutory tax rate (40.69%) if a firm has neither net operating loss carryforward at the beginning of the fiscal year nor negative net income before tax; one-half of statutory tax rate (20.345%) if the firm has either net operating loss carryforward at the beginning of the fiscal year or negative net income before tax, but not both; 0 if the firm has both net operating loss carryforward at the beginning of the fiscal year and negative net income before tax
NewFL and NewOL are deflated by total assets without financial lease debts at the beginning of the fiscal year.
Table 2: Correlation Matrix

Panel A: Hypothesis 1

<table>
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<tr>
<th></th>
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<th>LEV</th>
<th>RFL</th>
<th>SIZE</th>
<th>MTB</th>
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Notes:
Pearson (Spearman) correlations are below (above) the diagonal.
All continuous variables are trimmed at the top and bottom 1%.
PAF = an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise.
LEV = debt divided by book value of equity.
RFL = finance lease obligations (future minimum lease payments under finance leases) divided by the sum of tangible assets and finance lease obligations.
SIZE = natural log of total assets.
MTB = market value of equity divided by book value of equity.
*p-values for correlation coefficients are reported in parentheses.
Table 2: Correlation Matrix (Continued)

Panel B: Hypotheses 2 and 3

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<td>SIZE</td>
<td>-0.1363</td>
<td>-0.0233</td>
<td>-0.1295</td>
<td>-0.0061</td>
<td>0.1224</td>
<td>1.0000</td>
<td>0.0373</td>
<td>0.2967</td>
<td>-0.0742</td>
</tr>
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<td></td>
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<tr>
<td>ROA</td>
<td>-0.0321</td>
<td>0.0221</td>
<td>-0.0551</td>
<td>0.0282</td>
<td>-0.3045</td>
<td>0.0288</td>
<td>1.0000</td>
<td>0.4390</td>
<td>0.1824</td>
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<tr>
<td>MTB</td>
<td>0.0685</td>
<td>-0.0082</td>
<td>-0.0561</td>
<td>-0.2838</td>
<td>0.1928</td>
<td>0.1950</td>
<td>0.3680</td>
<td>1.0000</td>
<td>-0.0368</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAX</td>
<td>-0.0331</td>
<td>-0.0049</td>
<td>-0.0409</td>
<td>0.0049</td>
<td>-0.2264</td>
<td>-0.0589</td>
<td>0.2074</td>
<td>-0.0456</td>
<td>1.0000</td>
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<td></td>
</tr>
</tbody>
</table>

Notes:
Pearson (Spearman) correlations are below (above) the diagonal.
All continuous variables are trimmed by year at the top and bottom 1%.
NewFL = the changes in pre-discounted finance lease obligations (the sum of future minimum lease payments under finance leases and finance lease debts) summed by previous year’s short-term pre-discounted finance lease obligations.
NewOL = the changes in future minimum lease payments under operating leases summed by previous year’s short-term future minimum lease payments under.
operating leases

PAF = an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise
T = an indicator variable that takes the value of 1 if a firm adopts Statement No. 13, and 0 otherwise
LEV = debt divided by book value of equity
SIZE = natural log of total assets
ROA = business income, which sums operating income and financial income (interest income, discount income, and interest on securities), divided by total assets
MTB = market value of equity divided by book value of equity
TAX = statutory tax rate (40.69%) if a firm has neither net operating loss carryforward at the beginning of the fiscal year nor negative net income before tax; one-half of statutory tax rate (20.345%) if the firm has either net operating loss carryforward at the beginning of the fiscal year or negative net income before tax, but not both; 0 if the firm has both net operating loss carryforward at the beginning of the fiscal year and negative net income before tax
NewFL and NewOL are deflated by total assets without financial lease debts at the beginning of the fiscal year.

p-values for correlation coefficients are reported in parentheses.
Table 3: Accounting Policy Choice upon the Initial Adoption of Statement No. 13

<table>
<thead>
<tr>
<th>Expected Sign</th>
<th>Expected Sign</th>
<th>Expected Sign</th>
<th>(1) Coefficient</th>
<th>(2) Coefficient</th>
<th>(3) Coefficient</th>
<th>(1) Z-value</th>
<th>(2) Z-value</th>
<th>(3) Z-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>Constant</td>
<td>Constant</td>
<td>2.8083***</td>
<td>2.8994***</td>
<td>2.8906***</td>
<td>(5.4788)</td>
<td>(5.7980)</td>
<td>(5.6158)</td>
</tr>
<tr>
<td>LEV</td>
<td>LEV</td>
<td>LEV</td>
<td>0.2038***</td>
<td>0.2070***</td>
<td></td>
<td>(2.7865)</td>
<td></td>
<td>(2.7840)</td>
</tr>
<tr>
<td>RFL</td>
<td>RFL</td>
<td>RFL</td>
<td>-0.4948</td>
<td>-0.6261</td>
<td></td>
<td>(-0.5014)</td>
<td></td>
<td>(-0.6367)</td>
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<tr>
<td>SIZE</td>
<td>SIZE</td>
<td>SIZE</td>
<td>-0.1658***</td>
<td>-0.1617***</td>
<td>-0.1713***</td>
<td>(-4.0882)</td>
<td>(-4.1003)</td>
<td>(-4.2311)</td>
</tr>
<tr>
<td>MTB</td>
<td>MTB</td>
<td>MTB</td>
<td>-0.0976</td>
<td>-0.0905</td>
<td>-0.0924</td>
<td>(-1.1330)</td>
<td>(-1.0608)</td>
<td>(-1.0734)</td>
</tr>
<tr>
<td>Industry dummy</td>
<td>Industry dummy</td>
<td>Industry dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>Log Likelihood</td>
<td>Log Likelihood</td>
<td>-344.8685</td>
<td>-348.0474</td>
<td>-344.6155</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>N</td>
<td>N</td>
<td>N</td>
<td>912</td>
<td>912</td>
<td>912</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>Pseudo R²</td>
<td>Pseudo R²</td>
<td>0.0767</td>
<td>0.0682</td>
<td>0.0774</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
All continuous variables are trimmed at the top and bottom 1%.
LEV = debt divided by book value of equity
RFL = finance lease obligations (future minimum lease payments under finance leases) divided by the sum of tangible assets and finance lease obligations
SIZE = natural log of total assets
MTB = market value of equity divided by book value of equity
Z values are reported in parentheses. We estimate standard errors using the Huber-White sandwich estimators.
*** Statistically significant at the 0.01 level of significance using a two-tailed Z test
** Statistically significant at the 0.05 level of significance using a two-tailed Z test
* Statistically significant at the 0.10 level of significance using a two-tailed Z test
### Table 4: Arranging Leases in Response to Capitalizing Finance Leases

<table>
<thead>
<tr>
<th>Expected Sign</th>
<th>NewFL Coefficient</th>
<th>NewOL Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant</strong></td>
<td>0.0129***</td>
<td>0.0021</td>
</tr>
<tr>
<td><code>-/+</code></td>
<td>-0.0018***</td>
<td>0.0019***</td>
</tr>
<tr>
<td><code>+</code></td>
<td>0.0006***</td>
<td>-0.0001</td>
</tr>
<tr>
<td><code>-</code></td>
<td>-0.0008***</td>
<td>0.0000</td>
</tr>
<tr>
<td><code>-/+</code></td>
<td>-0.0130**</td>
<td>0.0092*</td>
</tr>
<tr>
<td><code>+</code></td>
<td>0.0009***</td>
<td>0.0001</td>
</tr>
<tr>
<td><code>-</code></td>
<td>-0.0010</td>
<td>-0.0029</td>
</tr>
<tr>
<td><code>+</code></td>
<td>0.0009***</td>
<td>0.0001</td>
</tr>
<tr>
<td><code>-</code></td>
<td>-0.0010</td>
<td>-0.0029</td>
</tr>
<tr>
<td>Industry dummy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>2,964</td>
<td>2,964</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.106</td>
<td>0.092</td>
</tr>
</tbody>
</table>

**Notes:**

All continuous variables are trimmed by year at the top and bottom 1%.

NewFL = the changes in pre-discounted finance lease obligations (the sum of future minimum lease payments under finance leases and finance lease debts) summed by previous year’s short-term pre-discounted finance lease obligations

NewOL = the changes in future minimum lease payments under operating leases summed by previous year’s short-term future minimum lease payments under operating leases

PAF = an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise

T = an indicator variable that takes the value of 1 if a firm adopts Statement No. 13, and 0 otherwise

PAF*T = an interaction term between PAF and T

LEV = debt divided by book value of equity

SIZE = natural log of total assets

ROA = business income, which sums operating income and financial income (interest income, discount income, and interest on securities), divided by total assets

MTB = market value of equity divided by book value of equity

TAX = statutory tax rate (40.69%) if a firm has neither net operating loss carryforward at the beginning of the fiscal year nor negative net income before tax; one-half of statutory tax rate (20.34%) if the firm has either net operating loss carryforward at the beginning of the fiscal year or negative net income before tax, but not both; 0 if the firm has both net operating loss carryforward at the beginning of the fiscal year and negative net income before tax.
year and negative net income before tax
NewFL and NewOL are deflated by total assets without financial lease debts at the beginning of the fiscal year.

$t$ statistics are reported in parentheses. Standard errors are clustered by firm and year.

*** Statistically significant at the 0.01 level of significance using a two-tailed t test
** Statistically significant at the 0.05 level of significance using a two-tailed t test
* Statistically significant at the 0.10 level of significance using a two-tailed t test
Table 5: Accounting Policy Choice upon the Initial Adoption of Statement No. 13

<table>
<thead>
<tr>
<th>Expected Sign</th>
<th>(1) Coefficient (Z-value)</th>
<th>(2) Coefficient (Z-value)</th>
<th>(3) Coefficient (Z-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.8211*** (5.4813)</td>
<td>2.9352*** (5.8603)</td>
<td>2.9267*** (5.6771)</td>
</tr>
<tr>
<td>LEV +</td>
<td>0.2027*** (2.7847)</td>
<td></td>
<td>0.2062*** (2.7897)</td>
</tr>
<tr>
<td>RFL +</td>
<td></td>
<td>-0.6042 (-0.6171)</td>
<td>-0.7414 (-0.7572)</td>
</tr>
<tr>
<td>ROL +</td>
<td>0.3652 (0.3838)</td>
<td>0.5345 (0.5849)</td>
<td>0.5446 (0.5991)</td>
</tr>
<tr>
<td>SIZE -</td>
<td>-0.1668*** (-4.0915)</td>
<td>-0.1647*** (-4.1681)</td>
<td>-0.1742*** (-4.2942)</td>
</tr>
<tr>
<td>MTB -</td>
<td>-0.1016 (-1.1811)</td>
<td>-0.0921 (-1.0817)</td>
<td>-0.0956 (-1.1122)</td>
</tr>
<tr>
<td>Industry dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-344.0590</td>
<td>-347.1512</td>
<td>-343.7262</td>
</tr>
<tr>
<td>N</td>
<td>905</td>
<td>905</td>
<td>905</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.0762</td>
<td>0.0679</td>
<td>0.0771</td>
</tr>
</tbody>
</table>

Notes:
- All continuous variables are trimmed at the top and bottom 1%.
- LEV = debt divided by book value of equity
- RFL = finance lease obligations (future minimum lease payments under finance leases) divided by the sum of tangible assets and finance lease obligations
- ROL = future minimum lease payments under operating leases divided by the sum of tangible assets, finance lease obligations, and future minimum lease payments under operating leases
- SIZE = natural log of total assets
- MTB = market value of equity divided by book value of equity
- Z values are reported in parentheses. We estimate standard errors using the Huber-White sandwich estimators.

*** Statistically significant at the 0.01 level of significance using a two-tailed Z test
** Statistically significant at the 0.05 level of significance using a two-tailed Z test
* Statistically significant at the 0.10 level of significance using a two-tailed Z test
Table 6: Arranging Leases in Response to Capitalizing Finance Leases using the Treatment Effects Model

<table>
<thead>
<tr>
<th>Expected Sign</th>
<th>NewFL Coefficient (t-value)</th>
<th>NewOL Coefficient (t-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.0091*** (-3.2007)</td>
<td>0.0039* (1.7912)</td>
</tr>
<tr>
<td>PAF</td>
<td>0.0166*** (4.6093)</td>
<td>-0.0017 (-0.4815)</td>
</tr>
<tr>
<td>T</td>
<td>0.0018*** (10.2253)</td>
<td>0.0027*** (6.6091)</td>
</tr>
<tr>
<td>PAF*T</td>
<td>-0.0016*** (-2.8721)</td>
<td>0.0022*** (3.9789)</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.0132** (-2.1154)</td>
<td>0.0110*** (2.9222)</td>
</tr>
<tr>
<td>MTB</td>
<td>0.0011*** (5.4099)</td>
<td>0.0001 (0.2817)</td>
</tr>
<tr>
<td>TAX</td>
<td>-0.0005 (-0.2275)</td>
<td>-0.0028 (-1.1549)</td>
</tr>
<tr>
<td>MILLS</td>
<td>-0.0091*** (-4.1346)</td>
<td>0.0011 (0.5003)</td>
</tr>
<tr>
<td>Industry dummy</td>
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<td>Yes</td>
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<tr>
<td>N</td>
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<td>2,819</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.103</td>
<td>0.088</td>
</tr>
</tbody>
</table>

Notes:
- All continuous variables are trimmed by year at the top and bottom 1%.
- NewFL = the changes in pre-discounted finance lease obligations (the sum of future minimum lease payments under finance leases and finance lease debts) summed by previous year's short-term pre-discounted finance lease obligations.
- NewOL = the changes in future minimum lease payments under operating leases summed by previous year's short-term future minimum lease payments under operating leases.
- PAF = an indicator variable that takes the value of 1 if a firm chooses the exceptional treatment when Statement No. 13 is adopted, and 0 otherwise.
- T = an indicator variable that takes the value of 1 if a firm adopts Statement No. 13, and 0 otherwise.
- PAF*T = an interaction term between PAF and T.
- LEV = debt divided by book value of equity.
- SIZE = natural log of total assets.
- ROA = business income, which sums operating income and financial income (interest income, discount income, and interest on securities), divided by total assets.
- MTB = market value of equity divided by book value of equity.
- TAX = statutory tax rate (40.69%) if a firm has neither net operating loss carryforward at the beginning of the fiscal year nor negative net income before tax; one-half of statutory tax rate (20.345%) if the firm has either net operating loss carryforward at the beginning of the fiscal year or negative net income before tax, but not both: 0 if the firm has both net operating loss carryforward at the beginning of the fiscal year and negative net income before tax.
NewFL and NewOL are deflated by total assets without financial lease debts at the beginning of the fiscal year. 

$t$ statistics are reported in parentheses. Standard errors are clustered by firm and year.

*** Statistically significant at the 0.01 level of significance using a two-tailed t test

** Statistically significant at the 0.05 level of significance using a two-tailed t test

* Statistically significant at the 0.10 level of significance using a two-tailed t test