ASC 842 and the net benefit of leasing in the retail industry

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ABSTRACT

This paper examines whether the new lease standard, ASC 842 - Leases impacts the lease vs. buy decision through a net advantage to leasing (NAL) model. The study employs OLS regression to compare the change in NAL under the new lease standard and the previous lease standard. Using a sample of publicly traded retail firms with the largest total future minimum operating lease payments in fiscal year 2019, we find that there is an increase in the net benefit of leasing when comparing the new lease standard to the previous standard. The net benefit of leasing is moderated by the effective tax rate and lease term. The results suggest that retail firms are likely to continue to lease rather than purchase assets with the implementation of ASC 842 and that firms subject to higher corporate tax rates and longer lease terms may experience a greater net benefit of leasing over purchasing relative to other firms. The results should inform future leasing decisions by retail managements.

Keywords: Leases, ASC 842, Topic 842, Net Advantage to Leasing

INTRODUCTION

The decision to acquire a fixed asset considers the optimal financing of that asset (Ford & Musser, 1994); in general, this means either lease financing or debt financing the asset. Leasing is a viable alternative to debt because leasing can accrue a net advantage to the lessee in the form of capital conservation for example (Abdullah & Chee, 2010; Cahill, 2006; Nath, 2001). However, recent changes to operating lease accounting rules in ASC 842 - Leases (or, "new standard") raise questions regarding leasing's net advantage (see e.g., Rhode, 2019). These questions arise because the new standard requires lessees to capitalize operating leases and to expense both the amortization of the leased asset and the corresponding interest on the lease liability. Under the previous standard, ASC 840 (or, "old standard"), operating leases were kept off the balance sheet and lease expenses consisted only of rent payments. The accounting rule change provides a unique opportunity to revisit leasing's net advantage. Specifically, in this paper, we ask how the new lease standard impacts leasing's net benefit for the lessee.

Finance literature advances that a standard model for evaluating the lease-purchase decision is a Net Advantage of Leasing (NAL) model (Miles et al., 2018). Here, NAL refers to the difference between the present value cost of ownership and the present value cost of leasing (Brigham & Daves, 2013). In other words, NAL is a net present value model that assists managers in determining "whether leasing provides a better financing alternative to that which would be employed if the asset were purchased (O'Brien & Nunnally, 1983, p. 30)." The decision criterion dictates that a firm should lease an asset if NAL is greater than zero (Smith & Harter, 2011). Research has established NAL's utility in the corporate lease-purchase decision (e.g., O'Brien & Nunnally, 1983; Mukherjeem, 1991). Our paper borrows from this research by examining whether ASC 842 engenders a more (less) favorable leasing environment over the previous lease standard through an NAL model. Specifically, we examine how the new standard impacts the net benefit of leasing by comparing the percentage change in NAL between the new standard and the old standard for sampled firms. A positive, significant change in NAL suggests that the new standard may induce retail managers towards more lease financing.

Our study compares two scenarios, including a scenario that determines NAL under the new standard and a scenario that determines NAL under the old standard. As a proxy for the value of the assets to be purchased under both scenarios, we use the value of a merchant's total reported future minimum operating lease commitments. This basket of lease commitments includes physical stores, equipment, distribution centers, and corporate facilities, among other assets. Predictor variables include effective corporate tax rates, weighted average discount rates, and weighted average lease terms. We control for firm size through a firm's market capitalization. We use data from fiscal year 2019 as all sampled firms adopted ASC 842 in their financial results for this fiscal year. We limit our study to retail because this industry is heavily reliant on operating leases (Shaked & Orelowitz, 2017) and is considered to be the most impacted by the new standard (BDO, 2016). We further refine our sample to publicly traded retailers, examining 38 merchants with the largest total future operating lease commitments; these 38 firms comprised 79% of the value of all future operating lease payments for publicly traded retailers in fiscal year 2019[1]. The study employs descriptive statistics, ANOVA, and linear regression to evaluate the extent to which ASC 842 impacts the net benefit of leasing.

[1] At the time of our data collection, there were 188 publicly traded merchants categorized as "Retail Trade" under Standard Industry Classification (SIC) group codes 52-59. The total future minimum operating lease payments (undiscounted) for all these firms in fiscal year 2019 were reported as $381.5 billion.

Other research has examined the expected impact of ASC 842. However, our study is novel and differs from earlier research in two important ways. First, considerable research has examined the expected impact of the new lease standard through a financial statement or financial ratio perspective (see e.g., Caster et al., 2018; Chatfield, et al., 2017; Fafatas & Fischer, 2016; Forbes & Gupta, 2019; Lee et al., 2014; Singh, 2012). In general, this body of literature concludes that ASC 842 adoption results in increased assets and liabilities, with corresponding weaker financial ratios including debt, capital, and profitability ratios[2]. In contrast, we have elected to examine ASC 842 from a net advantage to leasing perspective. We believe our approach is preferable because:

(a) it follows how lease-purchase decisions are actually made in business, both in general (Mukherjeem, 1991) and in retail, specifically (Eppli & Benjamin, 1994);
(b) it quantifies the discounted cash flow advantages (disadvantages) of the leasing decision, thereby capturing true value creation (extraction) rather than mere accounting effects; and
(c) it allows us to easily and expeditiously model the old and new lease standards' effects for decision makers in the retail industry.

Second, prior research evaluating the operating lease capitalization requirement in ASC 842 did so ex ante; few studies to date have focused on the new lease standard since its publication. To our knowledge, extant literature post-publication includes a capital market study by Milian & Lee (2021), and two behavioral studies: (1) a study by Binfarè et al. (2020) on the choice of discount factors used to value lease liabilities , and (2) a study by Yoon (2020) which looked at early adopters' decisions related to operating leases and capital expenditures. Contemporaneous with this emerging literature, our study is one of the first to review ASC 842 post publication, from a lease-purchase perspective.

Consistent with our expectations, the results of this study suggest that the new accounting standard contributes to increases in the net advantage of leasing over the previous standard, and that the increases in NAL are moderated by a firm's effective tax rate and weighted average lease term. Of the two, extending the lease term has a greater positive impact on the percentage change in the net advantage of leasing over a similar, incremental increase in a firm's effective tax rate. This finding is consistent with previous research (e.g., Hladik & Valenta, 2018; Singh, 2012) in that the NAL increase was attributable to the tax shield arising from differences in the timing of lease interest expense, right-of-use amortization, and rent deductions under the two leasing standards. However, contrary to expectations, the results suggest that a firm's weighted-average discount rate was not significant even though higher cost of funds should have amplified the favorable tax shield. Also contrary to expectations, market capitalization as a proxy for firm size was not significant.

We contribute to the literature by studying the relationship between several dimensions that inform the lease-buy decision including (a) changes in accounting regulations, (b) industry characteristics, and (c) NAL analysis. Our study is novel in using an NAL model to evaluate the impact of an accounting standard change on lease-buy decisions for an industry that relies extensively on leases in its business model. Based on our results, we conclude that the revisions to the lease accounting standards impacts retail industry NAL models and the related lease-buy decision. In summary, we find that the move to the new standard favorably impacts NAL outcomes, which may lead retail managements towards more lease financing.

[2] Considerable research has also reviewed IFRS 16, the international corollary to ASC 842, and finds similar results to the literature considering ASC 842.

We organize the remainder of this paper as follows. The next section reviews relevant accounting and finance literature, and clarifies lease accounting under the new and previous standard. After developing our hypothesis, we describe the methodology, sample and data collection process, our NAL model assumptions, and variables used. Finally, after discussing the empirical results, we note limitations, suggest opportunities for future research, and present practical implications of our study.

LITERATURE REVIEW

The decision to acquire a fixed asset considers the optimal financing of that asset (Ford & Musser, 1994); in general, this means a consideration of lease financing. A lease is "a contractual obligation that allows an asset owned by one person to be used by another over a period of time in exchange for consideration" (Weidner, 2017). Several studies have demonstrated high-levels of leasing in retail relative to other sectors (e.g., Finucane, 1988; Kostolansky & Stanko, 2011; Zhang, 2018).

In this section, we provide a brief overview of both the determinants and financial advantages of leasing. Then, we review literature related to a lessee's lease vs. buy decision. We organize our review around the work of Goela & Bisman (2003) who proposed that a lessee's lease-buy decision is multi-dimensional and includes four elements: (1) the availability of funds, (2) accounting regulations, (3) moderating variables such as industry characteristics or firm size, and (4) NAL analysis. Our study and review leverages the latter three dimensions; like Schallheim (1994), we assume that funds are available to the lessee and therefore exclude the first element. Notably in our review, we describe significant changes in accounting regulations arising from ASC 842 and delineate the second element 'industry characteristic' as the prevalence of operating leases in the retail industry. We close our literature review with our research question and hypothesis.

Why Lease? Determinants and Financial Advantages

Numerous reasons for leasing assets have been identified. Besides obvious identifiable tax-related factors (Miller & Upton, 1976; Sharpe & Nguyen, 1995), additional non-tax determinants advanced by Smith and Wakeman (1985) and validated by others (see, e.g., El-Gazzar et al., 1986; Erickson, 1993; Gavazza, 2010; Mehran et al., 1999) include: (1) asset values that are not susceptible to use and maintenance decisions; (2) the non-specific nature of assets; (3) usage periods that are short relative to the asset's useful life; (4) existing debt covenants; (5) management compensation contracts tied to return on invested capital results; (6) closely held firms; (7) lessor market power; and (8) lessor holds a comparative advantage in asset disposal. Relevant to this present study is literature that extends lease determinants to the retail industry. Here, additional reasons cited for this specific sector include the nature of the industry, the ability to minimize risk, and the substitutability of leasing for debt.

First, Beattie et al. (2000) suggest that merchants assume leases simply as a raison d'être in the retail trade. They write:

> ...retail assets are relatively standard (city-centre shops, out-of-town shopping developments, offices and the like), which makes them more suitable for leasing than the more specialised assets often used in other industries. Further, such non-

> specialised retail assets are especially suitable for financing using operating lease contracts. (p. 457)

In other words, the very nature of the industry is novel in that it is ensconced in others' assets, namely the shopping center (Tarlo, 1983). Lowry (1997) distinguishes 10 major types of shopping centers that retailers operate in, including neighborhood, community, regional, super-regional, factory outlet/off-price, megamall, festive/restoration, downtown, fashion, power center, and specialty retailing. While each type has unique attributes and reasons for selection, the bottom line is that the industry exists within an asset-intense environment that they don't own.

Second, the absence of ownership may help the retailer minimize risk. Benjamin et al. (1990) conjecture that some forms of retail leasing are popular for at least two reasons: (1) leasing transfers risk from tenants to landlords, and (2) leasing reduces cash flow volatility. These presumptions are still present today as the Covid-19 pandemic has accelerated retail's desire to minimize risk. For example, a recent article by Thomas (2021) cites increasingly shortened lease terms by retail firms as a way to slash costs and to stay flexible. In this case, landlords bear greater risk when they accept shorter lease terms because by permitting tenants to vacate more quickly, landlords increase their exposure with unproductive assets. Similarly, McElroy (2020) cites shifts in lease contracts in the UK from fixed payment leases to percentage-based leases which allow the retailer to conserve cash at the expense of the landlord who has fixed costs to cover. From these recent examples, it is evident that the retail industry continues to view leasing through the lens of risk minimization.

And third, leasing appears attractive as a replacement to debt financing in the retail industry. Singh (2013) cites evidence that leasing and long-term debt are substitutes in the retail and restaurant industry. Using a sample comprising 233 US firms (64 restaurant firms and 169 retail firms) and 699 firm-year observations from 2006 to 2008, he found that $1 of total leasing displaces approximately $0.50 of debt. A similar outcome was established by Beattie et al. (2000) who observed that in the United Kingdom, leasing and debt are at least partial substitutes, with £1 of leasing displacing approximately £0.23 of non-lease debt. Together, these findings suggest that operating leases provide flexibility in a retailer's financing strategies. They also support the aforementioned notion that the nature of the retail asset has some influence on the choice of financing.

Collectively, the determinants for leasing aid our comprehension of the importance of leasing in the retail industry. Yet financial advantages (outcomes) to leasing seemingly play an equally important role. The most prevalent benefit cited in the literature relates to taxes (see e.g., Bierman, 2003; Cahill, 2006; Heaton, 1986; Mnzava, 2008). The tax advantages stem from two sources, a reduction in taxes and lower financing costs (Brick et al., 1987). Literature also advocates that leasing can accrue a net advantage to the lessee in the form of cash conservation (Abdullah & Chee, 2010; Cahill, 2006; Nath, 2001). Leasing typically allows for nearly zero up-front costs, allowing firms to preserve capital for other uses. Finally, prior to the new accounting lease standard, certain types of lease activities allowed firms to keep lease agreements off-balance sheet, thereby improving financial ratios and enhancing their ability to adhere to debt covenant agreements.

Dimension #1: Lease Accounting Regulations

While the determinants and advantages of leasing are clear, leasing remains an economic activity (Damir & Aidar, 2015), requiring a proper accounting of that activity. Businesses previously accounted for leases under ASC 840. Under this previous lease accounting standard, lessees (users) accounted for leases in one of two ways, either as an operating lease or a capital lease. The classification determined whether the leased asset and its associated liability was reported on the balance sheet and how any lease expenses were recorded. A primary benefit of structuring a leasing arrangement as an operating lease meant that the lease was kept off the balance sheet; excluding a lease from the balance sheet enhances the perceived quality of a lessee's return on equity (ROE) (Easton et al., 2018). A second benefit is that a lessee is able to report higher net income in the early years of a leasing arrangement as lease expenses under operating leases are generally less than lease expenses under capital leases (Easton et al., 2018). In order to qualify for the favorable operating lease designation under the previous standard, firms had to avoid meeting four lease criteria, or bright-line rules; otherwise, the lease was designated a capital lease. Attempts to avoid the capital lease treatment criteria created an environment known as lease-structuring (Grossman and Grossman, 2010), whereby firms intentionally designed lease agreements to avoid the capital lease label. However, lease-structuring was viewed negatively and the Securities and Exchange Commission (SEC) (2003) shamed the practice by publicly stating that "lease structuring to meet various accounting, tax, and other goals, has become an industry unto itself in the last 30 years (p.63)." Weidner (2017) adds:

> The drafters [of the previous standard] probably never anticipated the extent to which companies would structure lease obligations specifically to flunk all four of the...tests for lease capitalization and thereby avoid recording lease liabilities on the balance sheet. Companies wanted lease obligations to be treated more like ordinary operating expenses, which are not included on the obligor's balance sheet. (p. 371)

In response to the SEC and other critics of the previous leasing standard (see e.g., the Group of Four Plus One[3]), the Financial Accounting Standards Board (FASB) formally updated its accounting codification by issuing ASU 2016-02 in 2016 (hereafter, ASC 842). With ASC 842, fundamentally all leases with lease terms of more than 12 months are capitalized through balance sheet recognition. While the lessee retains the ability to classify leases under one of two types, finance or operating, the new standard requires both types of leases to be recognized on the balance sheet. The primary difference now between classification lies in the nature of the lease contract; the finance classification assumes the lease contract essentially represents the sale of an asset while the operating classification represents a temporary rental agreement (Spiceland et al., 2020). From an accounting standpoint, the lessee is required to recognize a right-of-use asset and a corresponding lease liability regardless of classification. Specific to operating leases, lessees recognize lease expense in two components, a lease interest expense element and a right-of-use asset amortization element. FASB believes the new standard results in fewer opportunities to structure lease transactions, enhances lease disclosure, and improves investor's understanding

[3] The Group of Four Plus One, as discussed by Lipe (2001), was "a cooperative effort by national accounting standard setters from Australia, Canada, New Zealand, the United Kingdom, and the United States plus the International Accounting Standards Committee" (p. 299).

and comparability of lessees' financial commitments (FASB, n.d.). The new standard is effective for publicly-traded businesses in fiscal periods that begin after December 15, 2018[4].

Dimension #2: Industry Characteristics (Operating Lease Intensity in the Retail Sector)

As discussed, the way firms account for lease contracts depends on how the lease is classified - operating or finance (or, capital under the previous standard) (Spiceland et al., 2020). The preponderance of evidence suggests retailers use operating leases to a greater degree than finance leases (Fafatas & Fischer, 2016; Imhoff et al., 1997; Maurer, 2020; Pérez et al., 2014). Singh (2012) discovered that the value of retail operating leases post capitalization are approximately 25 times greater than that of capital leases. Similarly, Goodacre (2003) estimates that on average, the ratio of operating leases post capitalization to financial (capital) leases in the UK retail sector is 37:1. The prevalence of operating leases can be attributed to short lease terms relative to long economic lives of shopping centers (Altamuro et al., 2014; Chun et al., 2003). Additionally, in substance, store leases are more similar to rentals than financed asset purchases (Altamuro et al., 2014). Because of the dependency on operating leases, the retail industry is considered to be the most impacted by the new standard (BDO, 2016).

The relative reliance on operating leases within retail may actually be increasing. In an interesting study by Gray (2017) examining whether retailers de-leveraged their balance sheets prior to ASC 842 issuance, Gray finds support that in the years preceding the issuance of the new standard, firms reduced their debt levels relative to their operating lease commitments. Here, debt included both conventional and capital lease debt. From this, one can infer that firms were anticipating the economic effects of the new standard and potentially changing their leasing activities accordingly. In effect, retailers appeared to double-down on operating lease commitments, relative to capital leasing and conventional debt.

Dimension #3: Measuring the Advantage of Leasing through NAL Models

Having established the advantages of leasing, its associated accounting, and the prevalence of operating leases in the retail sector, the next issue to consider is how to measure a financial advantage to leasing. Finance literature advances that a standard model for evaluating the lease decision by a lessee is the NAL model (Miles et al., 2018). NAL refers to the difference between the present value cost of ownership and the present value cost of leasing (Brigham & Daves, 2013); in other words, an NAL model is a net present value model. Brigham & Ehrhardt (2014) equate NAL as:

$$\text{NAL} = \text{PV}_{\text{Leasing}} - \text{PV}_{\text{Owning}}$$

Ownership costs include after-tax loan payments, maintenance costs, residual values, and tax savings from maintenance and depreciation expenses while lease costs include lease payments and tax savings from lease deductions (Brigham & Daves, 2013). Considering both types of costs, an NAL model assists managers in determining "whether leasing provides a better financing alternative to that which would be employed if the asset were purchased (O'Brien & Nunnally, 1983, p. 30)." The decision criterion dictates that a firm should lease an asset if NAL is greater than zero (Smith & Harter, 2011). NAL models quantify the discounted cash flow advantages (disadvantages) of the leasing decision, thereby capturing true value creation

[4] For a more comprehensive review of lease accounting under ASC 842, see Casabona & Coville, 2018; Holzmann & Munter, 2016; Newhard, 2017; Porter, 2016; Rossi III, 2018, and Sliwoski, 2017.

(extraction) rather than mere accounting effects. To our knowledge, NAL models have not been previously empirically used to examine the new standard.

Variables associated with NAL analysis that influence the lease-buy decision include [market] interest rates and tax consequences (i.e., tax shields and tax rates) (Goela & Bisman, 2003), as well as assumptions around discount rates (i.e., after-tax cost of debt), lease terms, residual values, and the amount borrowed (Brigham & Daves, 2013).

Seminal work by O'Brien and Nunnally (1983) and Mukherjee (1991) solidified our early understanding of the application of the NAL model in the corporate setting. O'Brien and Nunnally's survey of 78 Fortune 500 firms found that respondents performed NAL analysis to a greater extent than other types of lease analysis (e.g., simple NPV analysis), and did so by discounting cash flow at the after-tax cost of debt. In similar fashion, Mukherjee's more extensive survey of 83 Fortune 500 firms found that an overwhelming number (88%) of firms considered leasing a financing decision and the plurality showed a preference for an NAL model using after-tax borrowing cost as the discount factor. The majority of surveyed firms perceived leasing to be a substitute for debt, and 75% of the firms did not perform a leasing analysis if the asset project was rejected during the capital budgeting stage. Follow-up research confirmed the relevancy of NAL in large and small firms (Bathala & Mukherjee, 1995), in situations involving corporate real estate (Redman & Tanner, 1991), and in shopping center lease analysis (Eppli & Benjamin, 1994). NAL models are also foundational pedagogy in today's financial textbooks.

Research Question & Hypothesis

Recapitulating our review of the literature, we recognize that there are advantages to leasing. We also acknowledge that the accounting for leases has changed, particularly for operating leases, and that literature both affirms that the retail industry relies heavily on operating leases and that we can quantify the advantages of leasing through NAL models. However, what is not presently well understood is the relationship between the multiple dimensions that inform the lease-buy decision. Goela & Bisman (2003) call for further research that is more efficient in handling the multi-dimensionality of lease decision-making and we believe we answer this call by examining the intersection of three of the primary dimensions: changes in accounting regulations, an industry that relies heavily on operating leases, and NAL model analysis. In short, our study provides a unique opportunity to revisit leasing, and to specifically ask whether changes in accounting lease standards engender a more (less) favorable leasing environment for retail lessees through an NAL model. As such, we hypothesize that there is no difference in the net advantage of leasing between the previous lease accounting standard and the new lease accounting standard in the retail sector.

METHODOLOGY

The purpose of this study is to examine how ASC 842 impacts the net advantage of leasing versus the previous standard, ASC 840. This objective is accomplished by comparing the percentage change in NAL between the new standard and the previous standard for a cross section of firms. A positive, significant change in NAL suggests that the new standard may induce retail managers towards more lease financing. Analysis is completed through the use of both descriptive statistics and inferential statistics, including ANOVA and ordinary least squares (OLS) regression. The criterion for statistical significance is 95%.

Sample and Data Collection

While operating leases are found in multiple sectors such as transportation, public utility, and heavy construction (Trifts & Porter, 2017), we limit our study to retail because this industry is heavily reliant on leases (Shaked & Orelowitz, 2017) and is considered to be the most impacted by the new standard (BDO, 2016). Our criteria for determining a sample population of firms included:

1. An actively-traded US-based retailer that falls within one of eight major group codes under Standard Industry Classification (SIC) Division: G — Retail Trade. This classification hierarchy included Building Materials, Hardware, Garden Supply, and Mobile Home Dealers; General Merchandise Stores; Food Stores; Automotive Dealers and Gasoline Service Stations; Apparel and Accessory Stores; Home Furniture, Furnishings, and Equipment Stores; Eating and Drinking Places; and Miscellaneous Retail.
2. ASC 842 adoption in fiscal year 2019. The new standard is effective for publicly-traded businesses in fiscal periods that begin after December 15, 2018 and most firms adopted the standard through the optional transition method, which allowed for an expeditious prospective application of the standard.
3. A 2019 annual report that was available in the Securities and Exchange Commission's (SEC) Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) database for the firm. We elected to isolate our criteria to fiscal year 2019 because the extent to which Covid-19 impacted retail business operations in fiscal year 2020 is currently unresolved.

One hundred eighty-eight firms met the above criteria. Four firms did not report operating lease commitments in fiscal year 2019 and were subsequently excluded. The remaining firms were ranked according to the value of their future minimum operating lease payments, which were manually gathered from disclosure notes in the respective annual reports (10-Ks). The largest reported value was by Amazon.com ($32 billion), while the smallest value was reported by iMedia Brands Inc ($868,000). Collectively, the 184 firms reported future minimum operating lease payments of $381.5 billion. Similar to Fafatas and Fischer (2016), we further refined our sample by selecting the 40 merchants with the largest total future operating lease commitments; these 40 entities comprised 81% of the total value of all future operating lease payments for publicly traded retailers in fiscal year 2019.

In addition to operating lease commitments, we manually obtained weighted average remaining lease terms, weighted-average discount rates, and effective tax rates for each retailer by reviewing annual report disclosures in SEC EDGAR. This data was copied from the internet into a spreadsheet. Administrative errors were controlled by double checking values for accuracy. Five observations for the effective tax rate variable were not self-reported by an entity; we manually calculated the effective tax rate in these instances by dividing a firm's income tax expense by its pretax income.

Because of negative effective tax rates for L Brands, Inc. and Rite Aid Corporation in 2019, we elected to eliminate these 2 firms from our 40-firm sample as it was impossible to administer an NAL model with negative tax rates. The final convenience sample consisted of 38 firms; these 38 firms comprised 79% of the value of all future operating lease payments for publicly traded retailers in fiscal year 2019. **Table 1** provides a profile of the sampled retailers used in the study by SIC major group code.

Assumptions in Research Design and Estimating NAL

An NAL model requires a comparison of the present value cost of ownership with the present value cost of leasing. The following key assumptions are used to implement the NAL models used in this study:

1. We assume the equality of the purchase cost and the present value of the operating lease payments for each firm.
2. We assume 100% debt financing of the purchase cost.
3. We allow interest rates, effective tax rates, the amount borrowed, and loan maturities (terms) to vary by firm.
4. We define interest rates as the incremental borrowing rate, i.e., a merchant's weighted average discount rate for operating leases as reported in the annual report. We define loan maturities (terms) as the weighted average remaining lease terms in years as reported in a firm's annual report. In situations where the weighted average lease term was not a whole number, we rounded up the term to the next whole full year.
5. Consistent with Singh (2012), we assume that lease payments occur at the beginning of the year. However, consistent with common practice, we assume that debt payments for loan amortizations occur at the end of the year.
6. Consistent with Singh (2012), assets are depreciated/amortized on a straight-line basis and lease interest expense under the new standard is calculated using the effective interest method. For depreciation/amortization, we use the weighted average remaining lease terms as a proxy for useful life when allocating these expenses to a reporting period.
7. No residual values or maintenance costs are assumed.

Based on the above assumptions, we modeled the NAL for each firm under two scenarios. The first scenario determined the NAL under the new standard while the second scenario determined the NAL under the old standard. We recognized that the new lease standard requires lessees to expense both the amortization of the leased asset and the corresponding interest on the lease liability; in contrast, we recognized that the old lease standard requires lessees to record only lease payments. In both scenarios, the present value cost of ownership/leasing was determined using an after-tax cost of debt, which varied by firm.

A simple example using one of our sampled firms, Dave & Busters Entertainment Inc., illustrates the application of our NAL model. Dave & Busters Entertainment Inc. reported the following operating lease-related data in fiscal year 2019:

1. Future Minimum Operating Lease Payments: $2,023,656,000
2. Weighted Average Remaining Lease Term (n): 15.7 years (which we rounded to 16 years)
3. Weighted Average Discount Rate (i): 5.90%
4. Effective Tax Rate (r*): 21.10%

For both scenarios, we estimate the following ownership costs and present value cost of ownership, based on a loan amount ($C) of $2,023,656,000.

1. The annual loan payment (PMT) is $198,872,000 over 16 years, computed as:

$$\mathrm{PMT_t} = \$\mathrm{C}\left(\frac{\mathrm{i}(1+\mathrm{i})^{\mathrm{n}}}{(1+\mathrm{i})^{\mathrm{n}}-1}\right)$$

2. Annual tax savings (TS) arising from depreciation is $26,687,000, computed as:

$$\text{TS depreciation}_t = \frac{\$C}{n} \times r^*$$

3. Annual interest tax savings varies as interest expense is based on outstanding, declining principal (p) balances. We compute the annual tax shield as:

$$\text{TS interest}_t = p_t \times i \times r^*$$

4. The present value cost of ownership over 16 years, adjusted for the tax savings arising from depreciation and interest expense deductions, is $1,807,598,000, computed as:

$$\sum_{t=0}^{n-1} \frac{PMT_t - \left(TS_{interest_t} + TS_{depreciation_t}\right)}{\frac{1}{\left(1 + \left(i\,x\,(1 - r^*)\right)\right)^{n-1}}}$$

For the lease option under the old standard, we estimate the following leasing costs and present value cost of leasing:

1. The annual rent payment (R) is $187,792,000, computed as:

$$R_t = \$C\left(\frac{i}{1 - (1+i)^{-n}}\right) x \frac{1}{(1+i)}$$

2. Annual tax savings arising from rent payments is $39,624,000, calculated as:

$$TS_{rent_t} = R_t\,x\,r^*$$

3. The present value cost of leasing, adjusted for the tax savings arising from a rent expense deduction, is $1,722,594,000, derived as:

$$\sum_{t=0}^{n-1} \frac{R_t - TS_{rent_t}}{\frac{1}{\left(1 + \left(i\,x\,(1 - r^*)\right)\right)^{n-1}}}$$

For the lease option under the new standard, we estimate the following leasing costs and present value cost of leasing:

1. Similar to the old standard, the annual lease payment is $187,792,000.
2. Annual tax savings (TS) arising from the right-of-use amortization is $26,687,000, computed as:

$$\text{TS amortization}_t = \frac{\$C}{n} \times r^*$$

3. Annual interest tax savings varies as interest expense is based on the effective interest rate method and on declining outstanding lease balances (L). We compute the annual tax shield as:

$$\text{TS interest}_t = L_{t-1} \times i \times r^*$$

4. The present value cost of leasing, adjusted for the tax savings arising from amortization and interest expense deductions, is $1,713,395,000, derived as:

$$\sum_{t=0}^{n-1} \frac{R_t - \left(TS_{interest_t} + TS_{amortization_t}\right)}{\frac{1}{\left(1 + \left(i\,x\,(1 - r^*)\right)\right)^{n-1}}}$$

Using the present values of ownership and leasing for each scenario, respectively, we estimated a net advantage of leasing under the old standard of $85,004,000 and a net advantage of leasing under the new standard of $94,203,000, which represents a 10.8% increase in NAL over the old standard.

The NAL increase is attributable to the tax shield arising from differences in the timing of lease interest expense, right-of-use amortization, and rent deductions under the two leasing standards. While the tax shield over the entire 16-year analysis is the same under both lease standards, the new standard resulted in higher expenses but more favorable tax shield in the earlier years of the analysis and lower expenses with less favorable tax shield in the later years of the analysis when compared to the previous standard. This modelling outcome is expected and parallels the estimated financial statement impact demonstrated by Singh (2012) and, more recently, discussed by Hladika and Valenta (2018) as it relates to the transition from IAS 17 to IFRS 16:

> Effects on company's profit or loss ... will be caused by the implementation of new lease standard IFRS 16… That is because the total costs in each year of lease agreement would not be the same – in the first years total costs will be higher and they will decrease through years [sic]. So it can be concluded that profit and loss before tax will be lower in the first years of implementation of IFRS 16 in comparison to IAS 17, and in the last [sic] years it will be vice versa, but in total the effects on profit or loss will be levelled (p. 260-261).

Extending Hladika and Valenta's observations to the present tax shield conversation, higher total costs in the earlier years under IFRS 16 implies a larger tax shield while lower total costs in the later years implies a smaller tax shield.

In conclusion, we followed a similar modeling process to that described above for all firms in the sample. Data was aggregated in Excel, and loaded to SPSS for descriptive and inferential statistical analysis.

Variate

A regression model was used to evaluate the relationship between the percentage change in the net advantage to leasing from the previous standard to the new standard and three explanatory variables, effective corporate tax rate, weighted average discount rate, and weighted average lease term, as well as a control variable, market capitalization. The variate is:

$$\Delta NAL = \alpha + b_1 (Tax) + b_2 (Rate) + b_3 (Term) + b_4 (MktCap)$$

Where,

ΔNAL	percentage change in the net advantage to leasing by firm
Tax	effective corporate tax rate by firm
Rate	weighted average discount rate by firm
Term	weighted average lease term by firm
MktCap	market capitalization quartile for a firm
α	intercept term, and
b_i	the regression coefficients

The dependent variable is derived from the NAL models and is calculated for each firm as the difference in the net advantage to leasing under the new standard less the net advantage to leasing under the old standard, divided by the net advantage to leasing under the old standard. Predictor variables include the effective corporate tax rate, weighted average discount rate, and weighted average lease term. We elected these explanatory variables because they represent

three fundamental determinants in lease versus buy decisions, namely the tax effect, the incremental borrowing rate, and the length of the lease agreement (Brigham & Daves, 2013; Goela & Bisman, 2003). As is customary, we included the variable market capitalization to control for firm size; each firm's market capitalization is drawn from publicly available sources on the close of their annual report date and is assigned to a specific quartile within the sample.

RESULTS

Descriptive Statistics

We began our analysis with an evaluation of the descriptive statistics in Table 1. First, the sample of 38 firms was segregated by specific standard industry classifications within the retail sector, and a comparison was made of the means between individual shopping centers. Our initial observation suggested that the independent variables displayed mean variations between lease commitments, lease terms, average discount rates, tax rates, and market capitalization indicating that differences between industry classification may have a moderating effect to the degree that firms experience an increase or decrease in NAL. For example, the mean lease term for general merchandise retailers was 14.09 years which was more than twice that of home furniture & equipment stores of 5.95.

Second, we ran T-tests for both dependent and independent variables which were all significant ($p = .000$) as presented in Table 2, indicating that our selection of independent variables may have predictive power in determining the percentage change in the NAL. Next, we further evaluated the means using a one-way ANOVA which was prepared for each of the four independent variables, Effective Tax Rate, Weighted-Average Lease Term, Weighted-Average Discount Rate, and Market Cap Quartile, versus the dependent variable, Percent Change in NAL, with the results displayed in Table 3. On one hand, the Effective Tax Rate and Weighted-Average Lease terms were both significant ($p = .000$), demonstrated by large F-Stats of 14.492 and 32.522, respectively. Conversely, the Weighted-Average Discount Rate and Market Cap Quartile did not display means that were significantly different when comparing groups based on Percentage Change in NAL as evidenced by low F-Stats and p-values that were greater than .050. Based on the ANOVA results, we expected the Effective Tax Rate and Weighted-Average Lease Term to provide the greatest predictive value for the dependent variable, Percentage Change in NAL.

Empirical Findings

OLS Regression was used as our primary, inferential statistic to build our model to determine how ASC 842 impacts the net advantage of leasing versus the previous standard, ASC 840. Our model compares the percentage change in NAL between the new standard and the previous standard for a cross section of firms ($n = 38$). Based on our model results, we observed a positive, significant change in NAL between the old and new accounting standard. The model summary indicated a high degree of explanatory power based on the $R^2 = .882$ and Adjusted $R^2 = .868$ (Table 4), and the overall model fit the data as indicated by the ANOVA which was significant ($p = .000$) with a large F-Stat of 61.804 (Table 5). Evaluation of the coefficients revealed that both the Weighted-Average Discount Rate and Market Cap Quartile coefficients were not significant in their contribution toward the model's predictive power with p-values of .340 and .116, respectively. However, evaluation of the coefficients reveals that both the

Effective Tax Rate and Weighted-Average Lease Term were significant with p-values significant at the .001 level as indicated in Table 6. In addition to their significance, both variables exhibited a positive coefficient indicating that they were positively correlated with an increased percentage change in NAL between the new standard relative to the previous standard. Based on these results, the model suggests that the new standard may induce retail managers towards more lease financing. We can reject our null hypothesis that there is no difference in the net advantage of leasing between the previous lease accounting standard and the new lease accounting standard in the retail sector.

Sensitivity Analysis

While the model displays a positive relationship between the Percentage Change in NAL when the independent variables, Effective Tax Rate and Weighted Average Lease Term, are increased, the Standardized Coefficients suggests that Weighted Average Lease Term has a greater impact in predicting increase in Percentage Change in NAL relative to the Effective Tax Rate. The Standardized Coefficients for Weighted Average Lease Term and Effective Tax Rate are .696 and .597, respectively. In other words, extending the lease term has a greater positive impact on the Percentage Change in NAL than a similar, incremental increase in the firm's tax rate.

DISCUSSION

Our study results are consistent with Sing (2012) and Hladika and Valenta (2018) in that the NAL increase was primarily due to the tax shield arising from differences in timing of lease interest expense, right-of-use amortization, and rent deductions under the two leasing standards as evidenced by the significance and positive relationship between the percentage change in NAL and the Effective Tax Rate and Weighted Average Lease Term independent variables. As previously discussed, the new standard, ASC 842, results in higher expenses and tax shields in the earlier years relative to the previous standard, ASC 840. As a result, the present value of the tax shield is greater under the new standard in comparison to the old standard.

However, we would have expected the Weighted-Average Discount Rate to be significant in predicting the Percentage Change in NAL. We allowed the discount rate, or cost of funds, to vary between firms. Since higher cost of funds should have amplified the favorable tax shield arising from differences in timing of lease interest expense, the Percentage Change in NAL should have risen with the discount rate. While the Weighted-Average Discount Rate did not contribute to the predictive power of the model, the positive coefficient is consistent with our expectation that higher costs of funds result in an increase in the Percentage Change in NAL.

We controlled for differences in market capitalization for each of the firms in our sample. Our assumption was that larger firms should have the ability to negotiate more favorable lease terms related to pricing and financing relative to smaller firms. Since interest and amortization expenses would be lower for larger firms, we would expect a decrease in the Percentage Change in NAL. While the market capitalization variable was negatively correlated to the Percentage Change in NAL, it did not have any predictive ability.

STUDY LIMITATIONS AND FUTURE RESEARCH

We observed an increase in the percentage change in NAL based upon differences between the old and new leasing standard, but our results were limited by several factors. First, the sample size (n = 38) is not large enough to provide a very precise estimate of the strength of the relationship. In addition to size, the results are specific to retail firms. Second, our sample did not account for the possibility of future impairments such as damage to the leased asset or declines in fair market value. Third, we assumed that the asset useful life was equivalent to the weighted average lease terms which ignores early termination of lease contracts. As we discussed earlier, the percentage change in NAL is sensitive to fluctuations in the lease term. Fourth, we did not control for both foreseeable and unforeseeable risks such as changes in business conditions, technology, or consumer demand. Finally, we limited the sample to pre-Covid-19 which may not reflect current lease activity as noted by Azih (2020):

> The current economic landscape is driving companies to make significant decisions regarding their costs and leases. For some companies, the reduction of overall leases stems from workplace transitioning to more remote work; for others, decreasing real estate leases comes as a result of the shutdown of physical storefronts and lack of customers due to social distancing guidelines (p. 17).

There are several opportunities for future extension of our research. First, the retail segment could be stratified into a cross-sectional analysis of industry classification. While our study focuses on the retail industry as a whole because this industry extensively uses leases, our descriptive statistics in Table 1 suggest that variations in lease terms exist between industry groups. Since the percentage increase or decrease in the NAL is sensitive to fluctuations in the lease terms, the change to the new standard does not necessarily impact all industry group classifications the same. Second, the sample of retail firms could be segmented by tax bracket to evaluate the degree of sensitivity in the effective tax rate and the related tax shield. Those firms in lower tax brackets or with net operating losses may not experience an increase in NAL between standards. Finally, the sample used in the study could be modified to evaluate the impact in the NAL between the old and new standard for the years following the beginning of the Covid-19 pandemic in order to quantify the impact of the work-from-home trend and shift to on-line shopping.

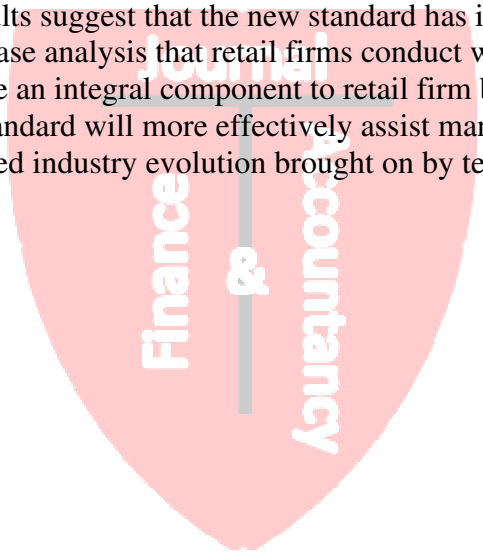
IMPLICATIONS AND CONCLUSIONS

This research adds to the existing literature by studying the relationship between the change from the old standard, ASC 840, to the new standard, ASC 842 and the lease-buy decision process using an NAL model to evaluate multi-dimensional factors. Previous research that evaluated the impact of changes in standard have focused on comparisons of financial statement results by requiring assets that had previously been structured and accounted for as operating leases to be re-classified as capital leases with inclusion on the balance sheet. Our study is novel in that it uses an NAL model to evaluate the impact of the change in standard on lease-buy decisions by moderating the relationship between the factors of tax rates, lease terms, and borrowing rates while controlling for differences in firm sizes using market capitalization as a proxy. Based upon our results, we concluded that the change in leasing standards impacts the

NAL model and related lease-buy decision. Specifically, we concluded that the variations in tax rates and lease terms were significant to the lease-buy decision since they were positively correlated with increases in the present value of the tax shield under the new standard in comparison to the old standard. In addition, our results indicated that interest rates associated with financing assets through borrowing and lease contracts are not significant to lease-buy decisions. In addition, the overall firm size did not appear to moderate the impact on the net advantage of leasing.

The retail industry uses leases extensively in their business model to take advantage of the flexibility of right-of-use versus ownership as well as optimization of favorable finance terms associated with those assets. As a result, retail firms must understand multi-dimensional factors impacting NAL Models and lease purchase decisions. As we stated earlier, Goela & Bisman (2003) call for further research that is more efficient in handling the multi-dimensionality of lease decision-making.

In summary, our research found that the move to ASC 842 favorably impacted NAL models used in lease-purchase decisions. The multi-dimensional factors of lease term and tax rates appear to have the greatest influence on NAL Models brought on by the changes in the accounting standard. Our results suggest that the new standard has improved transparency and brought clarity to lease-purchase analysis that retail firms conduct within the ordinary course of business. Given that leases are an integral component to retail firm business models, improved transparency from the new standard will more effectively assist managers in making better decisions as they face increased industry evolution brought on by technology and consumer demand.



REFERENCES

Abdullah, D. V., & Chee, K. (2010). Chapter 09: FINANCING (BASED ON LEASING). Marshall Cavendish International (Asia) Pte Ltd.

Altamuro, J., Johnston, R., Pandit, S. S., & Zhang, H. H. (2014). Operating leases and credit assessments. Contemporary Accounting Research, 31(2), 551–580. https://doi.org/10.1111/1911-3846.12033.

Azih, G. (2020). Lease accounting takes on new importance during the COVID-19 pandemic. CPA Journal, 17–18.

Bathala, C. T. & Mukherjee, T. K. (1995). A survey of leasing in small firms. Journal of Small Business Finance, 4(2/3), 113-127.

BDO. (2016). New lease accounting standard causes concern. Retrieved from: https://www.bdo.com/insights/industries/retail-consumer-products/new-lease-accounting-standard-causes-concern.

Beattie, V., Goodacre, A., & Thomson, S. (2000). Operating leases and the assessment of lease–debt substitutability. Journal of Banking & Finance, 24(3), 427-470. https://doi.org/10.1016/S0378-4266(99)00045-X.

Benjamin, J. D., Boyle, G. W., & Sirmans, C. F. (1990). Retail leasing: The determinants of shopping center rents. Real Estate Economics, 18(3), 302-312.

Bierman H. (2003) Leasing as a Method of Financing. In: The Capital Structure Decision. Springer, Boston, MA. https://doi.org/10.1007/978-1-4615-1037-6_12.

Binfare, M., Connolly, R. A., Grigoris, F., & Liu, C. H. (2020). A new lease on firm behavior. Available at SSRN 3672699.

Brick, I. E., Fung, W., & Subrahmanyam, M. (1987). Leasing and financial intermediation: Comparative tax advantages. Financial Management, 16(1), 55-59.

Brigham, E. F., & Daves, P. R. (2013). Intermediate Financial Management (11th ed.). Cengage.

Brigham, E. F., & Ehrhardt, M. C. (2014). Financial Management: Theory and Practice (14th ed.). Cengage.

Cahill, D. (2006). The advantages of leasing: Long Term Management Care. Nursing Homes, 55(7), 8-9.

Casabona, P. A., & Coville, T. G. (2018). FASB's new accounting standard on leases: Overview of some key requirements for lessees and implementation considerations. Review of Business, 38(1), 59–73.

Caster, P., Scheraga, C. A., and Olynick, M. J. (2018), "The impact of lease accounting standards on airlines with operating leases: Implications for benchmarking and financial analysis", Journal of Transportation Management, 28(1), 15-23.

Chatfield, H. K., Chatfield, R. E., & Poon, P. (2017). Is the hospitality industry ready for the new lease accounting standards?. The Journal of Hospitality Financial Management, 25(2), 101-111.

Chun, G. H., Eppli, M. J., & Shilling, J. D. (2003). The effect of firm characteristics on the use of percentage retail leases. The Journal of Real Estate Finance and Economics, 27(1), 25–37. https://doi.org/10.1023/A:1023655328856.

Damir, R. V., & Aidar, Z. (2015). Leasing as a factor of economic growth. Procedia Economics and Finance, 23, 839-845.

Easton, P. D., Halsey, R. F., McAnally, M. L., Hartgraves, A. L., & Morse, W. J. (2018). Financial & Managerial Accounting for MBAs (5th ed.). Cambridge Business Publishers: Westmont, IL.

El-Gazzar, S., Lilien, S., & Pastena, V. (1986). Accounting for leases by lessees. Journal of Accounting and Economics, 8(3), 217-237.

Eppli, M., & Benjamin, J. (1994). The evolution of shopping center research: a review and analysis. Journal of Real Estate Research, 9(1), 5-32.

Erickson, S. M. (1993). An empirical investigation of the cross sectional determinants of lease use. Journal of Economics and Finance, 17(3), 17-28.

Fafatas, S., & Fischer, D. (2016). The effect of the new lease accounting rules on profitability analysis in the retail industry. Journal of Corporate Accounting & Finance, 28(1), 19-31.

Financial Accounting Standards Board (FASB). (n.d.). Accounting Standards Update No. 2016-02, Leases (Topic 842). Retrieved from https://www.fasb.org/cs/Satellite?c=FASBContent_C&cid=1176167904031&pagename=FASB%2FFASBContent_C%2FCompletedProjectPage.

Finucane, T. J. (1988). Some empirical evidence on the use of financial leases. Journal of Financial Research, 11(4), 321. https://doi.org/10.1111/j.1475-6803.1988.tb00092.x.

Forbes, R., & Gupta, G. (2019). New accounting standards for leases and their possible impacts on financial analyses and valuation. Journal of Forensic and Investigative Accounting, 11(3), 484-493.

Ford, S. A., & Musser, W. N. (1994). The lease-purchase decision for agricultural assets. American Journal of Agricultural Economics, 76(2), 277-285.

Gavazza, A. (2010). Asset liquidity and financial contracts: Evidence from aircraft leases. Journal of Financial Economics, 95(1), 62-84.

Goodacre, A. (2003). Operating lease finance in the UK retail sector. The International Review of Retail, Distribution and Consumer Research, 13(1), 99–125. https://doi.org/10.1080/0959396032000065373.

Goela, N., & Bisman, J. (2003). Rethinking the Australian lease decision making research agenda. 24. https://researchoutput.csu.edu.au/ws/portalfiles/portal/9664026/PID8183.pdf.

Gray, D. L. (2017). Three studies on lease accounting: Linking applied and pedagogical accounting research (Order No. 10934365). Available from ProQuest Dissertations & Theses Global. (2115542692).

Grossman, A. M., & Grossman, S. D. (2010). Capitalizing lease payments. CPA Journal, 80(5), 6-11.

Heaton, H. (1986). Corporate taxation and leasing. Journal of Financial and Quantitative Analysis, 21(3), 351-359.

Hladika, M., & Valenta, I. (2018). Analysis of the effects of applying the new IFRS 16 leases on the financial statements. In R. Veselica, G. Dukic, & K. Hammes (Eds.), Economic and Social Development: Book of Proceedings, 255-263.

Holzmann, O. J., & Munter, P. (2016). Leases to be recognized on lessee balance sheets. Journal of Corporate Accounting & Finance, 27(6), 97–101.

Imhoff Jr., E. A., Lipe, R. C., & Wright, D. W. (1997). Operating leases: Income effects of constructive capitalization. Accounting Horizons, 11(2), 12–32.

Kostolansky, J., & Stanko, B. (2011). The joint FASB/IASB lease project: Discussion and industry implications. Journal of Business & Economics Research, 9(9), 29–36. https://doi.org/10.19030/jber.v9i9.5633

Lee, B., Gyung Paik, D., & Yoon, S. W. (2014). The effect of capitalizing operating leases on the immediacy to debt covenant violations. Journal of Accounting & Finance, 14(6), 44-70.

Lipe, R. C. (2001, September). Lease Accounting Research and the G4+1 Proposal. Accounting Horizons, 15(3), 299.

Lowry, J. R. (1997). The life cycle of shopping centers. Business Horizons, 40(1), 77-87.

Mehran, H., Taggart, R. A., & Yermack, D. (1999). CEO ownership, leasing, and debt financing. Financial Management, 28(2), 5-14.

Maurer, M. (2020, January 28). Lease-accounting rules may have hurt companies' valuations, study says. Wall Street Journal. https://www.wsj.com/articles/lease-accounting-rules-may-have-hurt-companies-valuations-study-says-11580169715.

McElroy, C. (2020, September 30). Turning over a new lease: COVID-19 hastens shift to new retail leasing model. https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/turning-over-a-new-lease-covid-19-hastens-shift-to-new-retail-leasing-model-60522277.

Miles, J. A., Ezzell, J. R., & Vora, P. P. (2018). Revisiting the standard lease valuation model: new results. Journal of Economics and Finance, 42(2), 409-420.

Milian, J. A., & Lee, E. J. (2020). Did the Recognition of Operating Leases Cause a Decline in Equity Valuations?. Available at SSRN 3509373.

Miller, M. H., & Upton, C. W. (1976). Leasing, buying, and the cost of capital services. The Journal of Finance, 31(3), 761-786.

Mnzava, I. D. (2008). The significance of tax as a determinant of leasing: Evidence from UK tax changes. Asia Pacific Business Review, 4(1), 3-16.

Mukherjee, T. K. (1991). A survey of corporate leasing analysis. Financial Management, 20(3), 96–107. https://doi.org/10.2307/3665754.

Nath, R. (2001). Lease finance. International Financial Law Review, 67-71.

Newhard, J. J. (2017). Lease accounting: 842 wake-up call. Pennsylvania CPA Journal, 88(2), 32–36.

O'Brien, T. J., & Nunnally Jr, B. H. (1983). A 1982 survey of corporate leasing analysis. Financial Management, 12(2), 30-36.

Pérez, F. P., Inchausti, B. G., & Ortega, R. C. (2014). Operating leases: An analysis of the economic reasons and the impact of capitalization on Ibex 35 companies. Accessed June, 10, 2021 from http://www.aeca1.org/xviiicongresoaeca/cd/55a.pdf.

Porter, J. C. (2016). A refresher on accounting for leases. CPA Journal, 86(1), 24–33.

Redman, A. L., & Tanner, J. R. (1991). The financing of corporate real estate: A survey. The Journal of Real Estate Research, 6(2), 217–240.

Rhodes, K. (2019, September 24). Voices - Operating vs. finance leases: The impact of the new standard. Retrieved from: https://www.accountingtoday.com/opinion/operating-vs-finance-leases-how-businesses-are-impacted-under-the-new-standard.

Rossi III, J. D. (2018). Lease modifications. Pennsylvania CPA Journal, 1–2.

Securities and Exchange Commission. (2003). Report and Recommendations Pursuant to Section 401(c) of the Sarbanes-Oxley Act of 2002 On Arrangements with Off-Balance Sheet Implications, Special Purpose Entities, and Transparency of Filings by Issuers. Retrieved from https://www.sec.gov/news/studies/soxoffbalancerpt.pdf.

Shaked, I., & Orelowitz, B. (2017). Understanding retail bankruptcy. American Bankruptcy Institute Journal, 36(11), 20-73.

Schallheim, J. S. (1994). Lease or Buy? Principles for Sound Decision Making. Harvard Business School Press: Boston, MA.

Sharpe, S. A., & Nguyen, H. H. (1995). Capital market imperfections and the incentive to lease. Journal of Financial Economics, 39(2-3), 271-294.

Singh, A. (2012). Proposed Lease Accounting Changes: Implications for the Restaurant and Retail Industries. Journal of Hospitality & Tourism Research, 36(3), 335–365.

Singh, A. (2013). Is Leasing a Substitute or Complement to Debt?: Evidence from the Restaurant and Retail Industry. Journal of Hospitality & Tourism Research, 37(2), 155–183. https://doi.org/10.1177/1096348011425501.

Sliwoski, L. J. (2017). Understanding the new lease accounting guidance. Journal of Corporate Accounting & Finance, 28(4), 48–52. https://doi.org/10.1002/jcaf.22273.

Smith, C. W., & Wakeman, L. M. (1985). Determinants of Corporate Leasing Policy. The Journal of Finance, 40(3), 895–908. https://doi.org/10.1111/j.1540-6261.1985.tb05016.x.

Smith, W. S., & Harter, C. (2011). A simple option-theoretical approach to the lease versus purchase decision. Research in Finance, 27, 195-222.

Spiceland, J. D., Nelson, M. W., & Thomas, W. B. (2020). Intermediate Accounting (10th ed.). McGraw Hill: New York.

Tarlo, H. H. (1983). The great shop lease controversy. University of Queensland Law Journal, 13(1), 7-27.

Thomas, L. (2021, February 26). As store owners sign more short-term leases, landlords are taking a risky bet on the future of retail. CNBC. https://www.cnbc.com/2021/02/26/retailers-sign-more-short-term-leases-in-a-risky-bet-for-mall-owners.html.

Trifts, J., & Porter, G. E. (2017). The impact of the capitalization of operating leases: A guide for individual investors. Financial Services Review, 26(2), 205–220.

Weidner, D. J. (2017). New FASB rules on accounting for leases: A Sarbanes-Oxley promise delivered. The Business Lawyer, 72(2), 367-404.

Yoon, Y. (2020). Capitalization versus disclosure: The balance sheet effects of capitalization on operating lease activity. http://hdl.handle.net/10125/70536.

Zhang, N. (2018). Leasing, legal environments, and growth: Evidence from 76 countries. Journal of Economics and Finance, 42, 746–764. https://doi.org/10.1007/s12197-017-9419-5.

List of Tables

Table 1: Descriptive Statistics

	Total Sample	Building Mat., Hardware, Garden Supply, & Mobile Home Dealers	General Merch. Stores	Food Stores	Auto Dealers & Gas Service Stations	Apparel & Access. Stores	Home Furn. & Equip. Stores	Eating & Drink Places	Misc. Retail
No. of Firms	38	2	9	2	5	5	2	8	5
Minimum Operating Lease Commitments ($000)									
M	$7,897,890	$6,171,000	$7,727,088	$9,747,700	$3,535,439	$5,799,456	$2,936,328	$6,124,274	$19,439,457
SD	$8,254,038	$719,835	$7,393,444	$831,982	$1,139,884	$3,155,354	$174,899	$5,904,794	$15,186,042
Weighted Average Remaining Lease Term (years)									
M	12.22	10.13	14.09	14.05	14.12	8.78	5.95	14.13	10.00
SD	5.01	0.18	6.18	2.76	6.75	1.57	0.92	4.30	2.97
Weighted Average Discount Rates (%)									
M	4.96%	3.60%	5.11%	6.15%	5.45%	4.24%	4.75%	5.20%	4.66%
SD	1.67%	0.71%	1.74%	2.62%	2.37%	1.01%	2.05%	1.78%	1.27%
Effective Tax Rates									
M	24.44%	23.75%	22.94%	22.93%	21.15%	27.30%	21.22%	25.01%	28.82%
SD	9.88%	0.21%	1.51%	1.09%	5.71%	3.86%	2.09%	19.43%	11.36%
Market Capitalization ($ Billions)									
M	$76	$186	$83	$14	$44	$25	$16	$38	$213
SD	$159	$89	$38	$10	$56	$30	$13	$55	$397

Table 2: T-tests

	t-stat	p-value
Weighted-Average Remaining Lease Term	15.052	0.000
Weighted-average Discount Rate	18.357	0.000
Effective Tax Rate	15.245	0.000
Market Capitalization Quartile	13.324	0.000
Percentage Change in Net Advantage of Leasing	4.203	0.000

Table 3: One-Way ANOVA

	F-Stat	Significance
Weighted-Average Remaining Lease Term	14.492	0.004
Weighted-average Discount Rate	32.522	0.001
Effective Tax Rate	0.641	0.824
Market Capitalization Quartile	0.991	0.760

*Dependent Variable: Percentage Change in Net Advantage

Table 4: Model Summary

	R	R Square	Adjusted R Square	Std. Error of the Estimate
Model	0.939	0.882	0.868	0.045

Table 5: Model ANOVA

	F-Stat	Significance
ANOVA Model Fit	61.804	0.000

Table 6: Model Coefficients

	Unstandardized Beta	Significance
(Constant)	-0.304	0.000
Weighted-Average Remaining Lease Term	0.748	0.000
Weighted-average Discount Rate	0.017	0.001
Effective Tax Rate	0.538	0.340
Market Capitalization Quartile	-0.012	0.116

*Dependent Variable: Percentage Change in Net Advantage