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The impact of the capitalization of operating leases: A guide for individual investors

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Abstract

We provide a brief explanation of the new Financial Accounting Standards Board (FASB) standard requiring firms to move their off-balance sheet operating leases onto the balance sheet beginning in 2019, and then discuss how the new rule might affect the stock and bond values in the largest 1,000 listed firms. In short, despite dramatic increases in on-balance sheet liabilities in several industries, we caution investors not to anticipate changes in their stock or bond valuations resulting from this change. Because asset values change in response to new information, and the information we present in this article regarding changes in total assets and debt ratios is currently available in the notes to the financial statements and from data providers such as Bloomberg, it is already being used by professionals to forecast asset values.

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1. Introduction

In February 2016, the Financial Accounting Standards Board (FASB) released a revised standard (FASB 2016) on the accounting for leases. The most notable impact of this new standard will be the required capitalization of almost all leases that are currently categorized as operating leases. That is, under current standards operating leases have been not been reported as liabilities on the sheet, but the new standards will bring these obligations onto the

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balance sheet. As we will show and discuss in this article, the impact on corporate balance sheets will range from minor to dramatic for U.S. companies. These changes will affect public companies in the United States beginning with their fiscal 2019 statements.[1] However, since U.S. Generally Accepted Accounting Principles (U.S. GAAP) and the SEC require the presentation of the prior year's historical balance sheet and two prior years of income statements and statements of cash flow, the impact of this new standard will be felt by U.S. corporations almost immediately.[2]

The purpose of this article is to detail the impact of this new standard on the top 1,000 largest firms and to provide insights for individual investors on the impact of this change. We focus on individual investors because they are most likely to be unfamiliar with the accounting for operating leases and with the impact of the pending change. Individuals who have been relying on corporate balance sheets to measure the debt levels of the companies in which they invest may be surprised by the sometimes dramatic changes in the apparent debt load of companies most affected by the new standards. In contrast, most professional investment researchers, starting with Graham and Dodd, 1934, have long been adjusting for the impact of off-balance sheet operating leases. For example, the curriculum of the Chartered Financial Analyst (CFA) program includes coverage of how to capitalize operating leases and restate the balance sheet for firm's utilizing off-balance sheet financing (see, e.g., CFA, 2012).

This article is organized as follows. We next provide a brief explanation of the change and how it will affect financial statements. We then discuss the literature regarding off-balance sheet accounting. In the following section, we discuss the data and methodology. We then discuss the impact of the change on all firms in the sample and then on specific subsets by industry. We then address key questions that may be on the mind of individual investors. We conclude with a brief summary and conclusion.

2. Changing standards for lease accounting

Under the existing standards, U.S. corporations have long accounted for leases by categorizing them as either financial leases (sometimes referred to as capital leases) or operating leases. The distinction between the two has been driven by four criteria set out under U.S. GAAP. Essentially, leases could be treated as operating as long as their lease term was (1) less than 75% of the assets life, there was (2) no free transfer of the asset to the lessee at lease end, no (3) bargain price transfer of the asset to the lessee at the end of the lease period, and (4) the present value of the contractual lease payments did not exceed 90% of the value of the assets at the inception of the lease. Firms are required to report operating leases in footnotes,[3] but by carefully structuring the terms of the lease contracts, companies have been able to acquire the use of a wide range of assets without the need to record any liability on their balance sheets.

Operating leases, which are typically long-term and non-cancellable, are liabilities that are the equivalent of debt, and the existing standard has systematically understated those liabilities on the balance sheet of companies utilizing these leases. The recognition of this problem is not new. For example, in a November 2003 speech by former SEC Chairman

Arthur Levitt, Jr. (Levitt, 2004) to the partners of the accounting firm KPMG, he noted that "billions of dollars of lease financing fail to show up on balance sheets." More recently, Katz (2016) noted that FASB technicians found approximately "north of a trillion [dollars] in undiscounted lease obligations that are reported in the footnotes."

Under the new standards, the distinction between financial and operating leases will be maintained, but both types of leases must be capitalized, eliminating most opportunities for off-balance sheet financing. The balance sheet treatment of both types of leases will be identical with the present value of lease payments being recorded as debt and the corresponding asset value recorded as an asset. The difference between the two types of leases will show up on the income statement. Finance leases, as they will now be called, will be expensed through a combination of depreciation of the asset and the amortization of the interest portion of the debt obligation with the total expense depending on both the implicit interest rate of the lease and the depreciation rate of the asset. In contrast, the periodic expenses of Operating leases will equal the lease payments. This treatment of operating leases will result in an expense stream essentially identical to the expenses for current operating leases.[4]

A major driver of this rule change has been the ongoing attempt of FASB and its international counterpart, the International Accounting Standards Board (IASB) to bring the two sets of standards closer together, commonly referred to as "convergence." This change in leasing standards will accomplish this but the two sets of standards will still not be identical. The IASB does require the capitalization of all operating leases except those that are truly short-term, defined as less than one year and without renewal options. However, the IASB does not differentiate between finance and operating leases like the FASB standards. While this will result in somewhat different expense recognition patterns for operating leases in the U.S., the balance sheet treatments will be essentially identical.

3. Literature

There is a voluminous literature on leases and lease accounting (e.g., see Wheeler Spencer & Webb, 2015) but we concentrate on two questions: How has the use of operating leases changed over time and why have companies chosen to use them?

As we show in this study, operating leases are currently an important form of financing for many firms. The usage of these leases has grown over time. For example, Cornaggia, Franzen, and Simin (2013) tracked the use of leases for all firms in the merged CRSP-Compustat database (essentially all U.S.-listed public firms) excluding financial and utilities from 1980 to 2007. They document a dramatic increase in the use of operating leases (off-balance-sheet) compared with capital (on-balance-sheet) leases. Specifically, they compared the proportion of total debt represented by each lease type and document a 745% increase in the use of operating leases compared to (on-balance sheet) capital leases.

Why is there such a significant increase in the use of operating leases? While some companies are able to capture tax benefits through leasing versus buying, the tax benefits are not affected by whether a particular lease is classified as capital or operating. Beatty, Liao, and Weber (2010) find that companies with lower accounting quality tend to make higher use

of leases. This may reflect lenders' desires to maintain formal title to the assets when dealing with firms with lower accounting quality or a preference on the part of the companies to keep debt off-balance sheet with operating leases.

Perhaps the use of operating leases is driven by the belief that since these obligations do not appear on the balance sheets they are "free debt" and not recognized by lenders and investors. Bryan, Lilien, and Martin (2010) address this motivation, concluding that firms using operating leases count on "functional fixation," a term for market participants who blindly use only balance sheet and income statements, ignoring reporting in footnotes. This belief, if true, is misguided at least for lenders and professional investors. Beatty et al., (2010) note that bank monitoring, and access to private information from the firms to which they lend, substitute for the lower quality of accounting in these firms. Also, as noted earlier professional investors are well aware of the impact of operating leases and routinely make adjustments for this off-balance sheet debt when evaluating firms as potential investors. Certainly, neither of these groups are ignoring information reported in the notes to financial statements. It may be possible that individual investors have a higher propensity to display "functional fixation." Indeed, it is the purpose of this article to reduce this propensity by educating investors to the significance of off-balance sheet debt as well as the minor impact of the coming rules changes on securities prices.

4. Data and methodology

Data for the largest 1,000 firms by market capitalization (number of outstanding shares times price per share) was taken from Bloomberg in early May 2016. This time selection was based on the desire to have all firms with fiscal year ends in both December 2015 and January 2016 included with their most recent annual information. Under Security and Exchange Commission (SEC) reporting requirements, firms have 60 to 75 days, depending on size, from the end of their fiscal year to file their annual report (10k). Most retailers end their fiscal years at or near the end of January so all should have completed their filing by mid-April. We allowed about three weeks to ensure that our data sources would be complete and up to date.

To estimate the amount of off-balance sheet debt represented by operating leases, we calculated the estimated present value of the minimum rental obligations as provided by Bloomberg and taken from each firm's 10k. A detailed example using Urban Outfitters is included in the Appendix. Current reporting requirement for operating leases require firms to report the minimum operating lease payments for each of the next five years and lump all subsequent payments into one sum, labeled "thereafter" in the notes to the financial statements. To estimate the present value of these payments, two assumptions are required. First, one must make some assumption about how payments beyond year five will occur. We assumed that payments beyond year five would occur at the same rate as those in year five.

Second, a discount rate is required to calculate the present value of the series. Bloomberg provides an estimate of each firms after-tax cost of debt from its overall weighted average cost of capital (WACC). Of the 1,000 firms in the sample, 938 had values for this after-tax cost of debt provided. Because the discount rate is approximately the pretax cost of debt, we

estimated this value for each firm by dividing the after-tax cost by 0.65, or (1−0.35), assuming a marginal tax rate of 35%, the top marginal U.S. federal corporate tax rate.

Sixty two firms did not have cost of debt estimates provided by Bloomberg, requiring us to make other estimates. Seven of these firms had Standard and Poor's debt ratings provided by Bloomberg and, in these cases we used the average rates of other firms in the sample with the same rating as proxies for the cost of debt. Two additional firms had Moody's debt ratings, one provided by Bloomberg and the other reported on FactSet. In these cases, we matched the Moody's rating to its equivalent Standard and Poor's rating and followed the same process as above.[5]

We could find no direct indicator of credit risk for six of the firms. These ranged from the 238th largest firm by market capitalization, Sigma Aldrich, to the 990th firm, Kite Pharma. For these firms, we made the assumption that their credit rating would be the same as other firms with the same four-digit Standard Industrial Classification (SIC) code. Although this approach does not consider differences in leverage and profitability, it does take into consideration similarities in the business and industry.

For industry classifications, we used two digit Standard Industrial Classification (SIC) codes. We experimented with using three-digit codes, which provide more specific definitions but result in very small industry groups. For example, food stores fall under SIC Codes 54 and this group is further subdivided into codes 541 through 546 plus a miscellaneous category that distinguish between grocery stores (541), fish markets (542) and fruit and vegetable stores (543), and so forth. For purposes of examining the usage of operating leases, the two digit codes provide sufficient detail.

For each company, we estimated the dollar value of off-balance sheet operating leases. We also looked at the impact of capitalizing this off-balance sheet debt on three metrics. First, we examined the change in total assets that results from the recognition of the assets acquired through operating leases. Second, since operating leases represent hidden debt, we examined the impact on two debt-related metrics, Book Value Debt to Total Assets and Book Value Debt to Total Capital. This last metric is calculated as the book value of short and long term debt to the sum of the book value of short and long term debt plus the market value of the equity. This is not a perfect measure of firms' market value debt ratios but substituting the market value of equity results in a measure that more closely approximates true effective leverage than the book value measure.

5. Impact of the new leasing standards

To examine the potential impact of the new standards on financial reporting, we focused on how the largest 1,000 firms' financial statements would have been different if the standards had been in place for fiscal 2015. The total amount of off-balance sheet financing utilized by the 1,000 largest companies is estimated to be $742 billion, almost three quarters of a trillion dollars. The largest amount of off-balance sheet operating leases were held by Walgreens Boots Alliance with $30.8 billion, followed by AT&T ($25.7 billion), CVS Health ($23.8 billion), Wal-Mart ($18.9 billion), and United Continental Holdings ($16.4

billion). Of the 1,000 firms included in our analysis, only 18 reported no material operating leases.

Table 1 shows the value of off balance sheet financing for the 25 industries most affected. The number one industry by dollar value of operating leases is air transportation. Most airlines use operating leases to acquire at least a portion of their fleets. However, even within this industry, the usage of operating leases varies significantly. United Continental, as previously noted, is in the top five largest users of operating leases while its smaller rival Allegiant has only $33.1 million. Part of this difference is certainly the difference in size of the two airlines but may also reflect differences in business practices. For example, Allegiant's business model relies heavily on acquiring older aircraft that may be more difficult to structure as operating leases. Retailers are also heavily represented in this listing. From drug stores to restaurants to hardware discounters to grocery stores, these companies tend to be heavy users of operating leases. For most of these companies, the bulk of their operating leases are on their stores.

While the above numbers are large, their relative importance of operating leases for each company must be gauged relative to its size. To do this, we examined the percentage change in total assets that would result from the inclusion of off-balance sheet operating leases. For the 1,000 firms in total, the median change in total assets is only 2.6% and the average is only 7.3%. Taken alone, these values might suggest that the pending change to the new standards is only a minor adjustment best left for the accountants to worry about. However, the median and average reflect the wide differences that occur between companies and across industries. Firms in some industries tend to use operating leases much more aggressively and the degree of operating lease usage differs even within specific industries. For example, four firms had off-balance sheet assets and corresponding debt that exceeded the total of assets shown in their fiscal 2015 balance sheets. Whole Foods' total assets are 125.3% greater (i.e., 2.25 times) when the impact of operating leases are included. The other three exceeding the 100% level are Chipotle Mexican Grill (110.8%), Jack in the Box (104.0%), and Regal Entertainment Group (101.3%). This suggests that investors must look at specific industries and companies when considering the impact of operating leases, because average market statistics can be misleading.

Table 2 shows the percentage change in total assets that would result from the capitalization of operating leases. The top three industries and five of the top eight industries are in retail. However, even within this industry, there are wide variations in the use of operating leases as a percentage of total assets. The group with the largest overall change is Retail Trade–Apparel and Accessory stores with an average of 63.3% overall. However, there is still a wide range with Urban Outfitters with 97.1% of additional assets off-balance sheet while Under Armour shows only a 22.5% increase.

One of the most important results of the new standard will be to make the balance sheet more reflective of the true debt usage of the firm. To examine the impact of including operating leases as debt, we estimated the change in each firm's book value debt ratio, defined as total liabilities divided by total assets. While this measure may not be as important as the market value measures of leverage that will be discussed shortly, it is the measure that can be directly computed from a firm's balance sheet. For the entire 1,000 firms, the average change in debt ratio was 3.9% and the median change was 1.6%. As with the change in total

Table 1 Value of off-balance sheet operating leases
Largest 25 divisions, by two-digit SIC codes 2015 fiscal year

Division	SIC	Firms	Division mean ($mil)	Firms with largest least obligations		Firms with smallest least obligations	
Transport & Public Utility–Transportation by Air	45	10	$6,241.28	$16,406.40	United Continental Holdings	$33.105	Allegiant Travel Co
Retail Trade–Miscellaneous Retail	59	19	$4,471.02	$30,788.64	Walgreens Boots Alliance Inc	$35.778	Vista Outdoor Inc
Retail Trade–General Merchandise Stores	53	12	$3,965.64	$18,893.05	Wal-Mart Stores Inc	$3.235	Casey's General Stores Inc
Retail Trade–Food Stores	54	5	$3,380.12	$7,402.34	Kroger Co	$536.398	GNC Holdings Inc-Class A
Retail Trade–Apparel & Accessory Stores	56	11	$3,016.94	$7,376.97	TJX Companies Inc	$645.646	Under Armour Inc–Class A
Retail Trade–Building Materials, Hardware, Garden Supply and Mobile Home Dealers	52	5	$2,988.13	$6,534.38	Home Depot Inc	$287.913	Fastenal Co
Transport & Public Utility–Communications	48	30	$2,873.21	$25,722.36	AT&T Inc	$0.000	CBS Corp–Class A voting
Retail Trade–Eating & Drinking Places	58	14	$2,245.19	$10,678.50	McDonalds Corp	$440.352	Brinker International Inc
Retail trade–Home Furniture, Furnishing, & Equipment Stores	57	4	$2,178.23	$3,143.99	Best Buy Co Inc	$995.251	Gamestop Corp-Class A
Services–Motion Pictures	78	8	$1,561.10	$3,351.89	AMC Entertainment Hlds-Class A	$99.212	Lions Gate Entertainment Corp
Manufacturing–Petroleum Refining and Related Industries	29	14	$1,402.21	$4,644.51	Exxon Mobil Corp	$91.792	Murphy USA Inc
Retail Trade–Automotive Dealers and Gasoline Service Stations	55	10	$1,310.44	$4,155.92	Penske Automotive Group	$138.842	Copart Inc
Fin Ins and Real Estate–Insurance Agents, Brokers and Service	64	5	$1,173.49	$2,110.98	Marsh & McLennan Cos	$180.774	Brown & Brown Inc
Manufacturing–Apparel, and other Finished Products Made from Fabric and Similar Materials	23	8	$1,120.38	$2,021.85	Burlington Stores Inc	$311.878	Columbia Sportswear Co
Manufacturing–Leather and Leather Products	31	2	$1,088.87	$1,220.70	Coach Inc	$957.044	Skechers USA Inc–Class A
Agriculture–Agricultural Services	07	1	$996.18	$996.18	VCA Inc	$996.177	VCA Inc
Transport & Public Utility–Railroad Transportation	40	6	$896.75	$3,089.81	Union Pacific Corp	$283.778	Kansas city Southern
Services–Social Services	83	1	$717.07	$717.07	Bright Horizons Family Solutions	$717.070	Bright Horizons Family Solutions
Services–Health Services	80	16	$698.81	$2,621.46	Davita Healthcare Partners Inc	$73.948	Chemed Corp
Manufacturing–Rubber and Miscellaneous Plastic Products	30	7	$606.91	$2,642.65	Nike Inc-Class B	$22.867	Armstrong World Industries
Transport & Public Utility–Transportation Services	47	6	$564.05	$1,898.52	XPO Logistics Inc	$125.232	Expeditors Intl Wash Inc
Services–Amusement and Recreation Services	79	4	$549.24	$1,801.06	Live Nation Entertainment Inc	$35.137	Churchhill Downs Inc
Construction–Heavy Construction other than Building Construction Contractors	16	2	$538.42	$819.74	Jacobs Engineering Group Inc	$257.104	Fluor Corp
Manufacturing–Industrial and Commercial Machinery and Computer Equipment	35	53	$502.13	$5,714.80	Apple Inc	$9.645	BWX Technologies Inc
Services–Hotels, Rooming Houses, Camps, and Other Lodging Places	70	12	$498.12	$1,949.17	Hilton Worldwide Holdings Inc	$57.176	Extended Stay America Inc

Table 2 Change in total assets
If proposed changes were applied to 2015 fiscal year largest 25 divisions, by two-digit SIC codes

Division	SIC	Firms	Division average change	Largest change in division		Smallest change in division	
Retail Trade–Apparel & Accessory Stores	56	11	63.3%	97.1%	Urban Outfitters Inc	22.5%	Under Armour Inc-Class A
Retail Trade–Food Stores	54	5	53.8%	125.3%	Whole Foods Market Inc	18.7%	Dunkin' Brands Group Inc
Retail Trade–Eating & Drinking Places	58	14	51.5%	110.8%	Chipotle Mexican Grill Inc	4.8%	Aramark
Agriculture–Agricultural Services	07	1	39.7%	39.7%	VCA Inc	39.7%	VCA Inc
Retail Trade–Home Furniture, Furnishing & Equipment Stores	57	4	39.5%	66.1%	Williams-Sonoma Inc	23.0%	Gamestop Corp-Class A
Manufacturing–Leather and Leather Products	31	2	36.5%	46.7%	Skechers USA Inc-Class A	26.2%	Coach Inc
Services–Social Services	83	1	33.3%	33.3%	Bright Horizons Family Solutions	33.3%	Bright Horizons Family Solutions
Retail Trade–Miscellaneous Retail	59	19	31.8%	95.8%	Dick's Sporting Goods Inc	0.5%	Express Scripts Holding Co
Manufacturing–Apparel, and other Finished Products Made from Fabric and Similar Materials	23	8	30.5%	78.4%	Burlington Stores Inc	6.6%	Hanesbrands Inc
Building Materials, Hardware, Garden Supply and Mobile Home Dealers	52	5	30.1%	86.0%	Tractor Supply Company	11.4%	Fastenal Co
Services–Motion Pictures	78	8	28.6%	101.3%	Regal Entertainment Group-A	1.8%	Time Warner Inc
Transport & Public Utility–Transportation by Air	45	10	26.3%	55.8%	Spirit Airlines Inc	2.4%	Allegiant Travel Co
Retail Trade–General Merchandise Stores	53	12	21.3%	56.6%	Dollar General Corp	0.1%	Casey's General Stores Inc
Retail Trade = Automotive Dealers and Gasoline Service Stations	55	10	18.3%	51.8%	Penske Automotive Group Inc	2.7%	Carmax Inc
Services–Amusement and Recreation Services	79	4	11.3%	29.3%	Live Nation Entertainment In	1.5%	Churchill Downs Inc
Services–Educational Services	82	2	10.8%	12.8%	Graham Holdings Co-Class B	8.9%	Houghton Mifflin Harcourt Co
Transport & Public Utility–Transportation Services	47	6	7.2%	15.0%	XPO Logistics Inc	2.4%	Priceline Group Inc/The
Construction–Heavy Construction other than Building Construction Contractors	16	2	6.9%	10.5%	Jacobs Engineering Group Inc	3.4%	Fluor Corp
Fin Ins and Real Estate–Insurance Agents, Brokers and Service	64	5	6.7%	11.6%	Marsh & Mclennan Cos	3.6%	Brown & Brown Inc
Services–Health Services	80	16	6.7%	26.0%	Brookdale Senior Living Inc	2.1%	Mednax Inc
Wholesale Trade–Durable Goods	50	20	6.6%	17.6%	Airgas Inc	1.7%	Arrow Electronics Inc
Services–Business Services	73	120	6.5%	36.6%	Tableau Software Inc-Class A	0.0%	Verisign Inc
Services–Engineering, Accounting, Research, Management and Related Services	87	13	6.4%	13.6%	Parexel International Corp	0.5%	Servicemaster Global Holding
Wholesale Trade–Non-durable Goods	51	14	6.1%	31.9%	Domino's Pizza Inc	0.5%	Pinnacle Foods Inc
Services–Hotel, Rooming Houses, Camps, and other Lodging Places	70	12	5.8%	13.8%	Marriott International- Class A	0.5%	Las Vegas Sands Corp

assets, these relatively small values might suggest that the capitalization of operating leases is a relatively unimportant issue as the change in leverage is small. However, as before, these overall statistics mask the wide range of values across the entire sample. For example, the firm showing the largest change in their debt ratio is Whole Foods that shows a debt ratio of 1.1% without operating leases and 56.1% with the inclusion of the off-balance sheet debt. Second is Chipotle (0% before, 52.6% after inclusion), Dick's Sporting Goods (0.2% to 49.0%), and American Eagle Outfitters (0% to 47.8%). The magnitude of these differences illustrates an important point about analyzing financial statements. Investors who relied on the unadjusted balance sheets to assess financial risk would logically assess the above firms as having no financial risk because they each carry effectively no debt. However, in reality, these firms have debt equal to about half of the book value of their total assets.

Table 3 shows the changes in ratio of book value of debt to total assets by industry group. The retail industry is highly represented among those companies with the greatest change. However, as with other metrics, a key result is that there is substantial variation even within industry segments. For example, the segment with the largest change in debt ratio is Retail Trade–Apparel and Accessory Stores. On average, retailers in this segment show debt ratios that are 30.9 percentage points higher when operating leases are capitalized. However, American Eagle Outfitters debt ratio rises 47.8 percentage points while L Brands ratio increases only by 10.8 percentage points. While potential investors would be wise to be suspicious of the impact of operating leases on the debt loads of all retailers, they also need to carefully look at differences across firms, not just rely on industry averages. Even industries that tend to use relatively few operating leases can have wide ranges of metrics across firms. Consider the Services–Business Services segment near the bottom of Table 3. Across the 120 firms in this segment, the average change in book value debt ratio is only 4.4%. This relatively low number might lead some investors to not worry about off-balance sheet debt for firms in this segment. However, Tableau Software does make substantial use of operating leases and their debt ratio is 26.8 percentage points higher when those leases are capitalized.

The capitalization of leases adds debt to the balance sheet and thus increases the debt ratio for almost all firms. However, it is possible that book value debt ratios could actually improve with the inclusion of capitalized operating leases. For example, in the Retail Trade–Miscellaneous Retail segment, note that Michaels Company shows a change in the debt ratio of −17.2 percentage points. This results because the company has total debt that exceeds the book value of its total assets (i.e., negative equity). In this unusual case, adding the present value of the operating leases to both the firm's debt and total assets actually decreases the debt ratio. This anomaly was seen in four additional firms: Choice Hotels, SBA Communications, Cablevision Systems NY, and Domino's Pizza.

While book value measures of leverage are frequently reported, market value measures more accurately portray the true leverage position of firms. To examine this, we calculated each firm's debt to total capital ratio, defined as (book value) total short and long-term debt divided by the sum of total short and long-term debt plus the market value of equity. Ideally the market value of debt should be used in this ratio, but this value is unobtainable for most firms. Furthermore, unless a firm's default rate has changed dramatically or interest rates have moved dramatically, the book value of debt will closely approximate its market value.

Table 3 Change in book value of debt to total assets
If proposed changes were applied to 2015 fiscal year largest 25 divisions, by two-digit SIC codes

Division	SIC	Firms	Division average change	Largest change in each division		Smallest change in each division	
Retail Trade–Apparel & Accessory Stores	56	11	30.9%	47.8%	American Eagle Outfitters	10.8%	L Brands Inc
Retail Trade–Home Furniture, Furnishing, & Equipment Stores	57	4	24.4%	39.8%	Williams-Sonoma Inc	16.4%	Best Buy Co Inc
Manufacturing–Leather and Leather Products	31	2	23.7%	30.5%	Skechers USA-Class A	16.8%	Coach Inc
Retail Trade–Food Stores	54	5	22.7%	55.0%	Whole Foods Market Inc	3.7%	Dunkin' Brands Group Inc
Retail Trade–Eating & Drinking Places	58	14	22.7%	52.6%	Chipotle Mexican Grill Inc	2.2%	Aramark
Agriculture–Agricultural Services	07	1	18.5%	18.5%	VCA Inc	18.5%	VCA Inc
Manufacturing–Apparel, and other Finished Products Made from Fabric and Similar Materials	23	8	15.8%	26.9%	Lululemon Athletica Inc	3.3%	Hanesbrands Inc
Building Materials, Hardware, Garden Supply and Mobile Home Dealers	52	5	15.7%	43.0%	Tractor Supply Company	6.6%	Home Depot Inc
Transport & Public Utility–Transportation by Air	45	10	14.9%	26.7%	Spirit Airlines Inc	1.3%	Allegiant Travel Co
Services–Social Services	83	1	14.1%	14.1%	Bright Horizons Family Solutions	14.1%	Bright Horizons Family Solutions
Retail Trade–Miscellaneous Retail	59	19	13.1%	48.8%	Dick's Sporting Goods Inc	−17.2%	Michaels Cos Inc/The
Retail Trade–General Merchandise Stores	53	12	11.3%	33.5%	Big Lots Inc	0.1%	Casey's General Stores
Retail Trade–Automotive Dealers and Gasoline Service Stations	55	10	8.5%	22.4%	Advance Auto Parts Inc	0.7%	Carmax Inc
Services–Educational Services	82	2	8.2%	10.3%	Grahm Holdings Co-Class B	6.1%	Houghton Mifflin Harcourt Co
Services–Motion Pictures	78	8	7.7%	23.8%	AMC Entertainment Hlds-CL A	1.1%	Time Warner Inc
Services–Amusement and Recreation Services	79	4	6.0%	15.1%	Live Nation Entertainment Inc	1.0%	Churchill Downs Inc
Construction–Heavy Construction other than Building Construction Contractors	16	2	5.8%	8.8%	Jacobs Engineering Group Inc	2.8%	Fluor Corp
Transport & Public Utility–Transportation Services	47	6	4.9%	8.3%	Tripadvisor Inc	1.5%	Priceline Group Inc/The
Fin Ins and Real Estate–Insurance Agents, Brokers and Service	64	5	4.9%	7.9%	Marsh & McLennan Cos	2.7%	Brown & Brown Inc
Services–Business Services	73	120	4.4%	26.8%	Tableau Software Inc-CL A	0.0%	Verisign Inc
Wholesale Trade–Durable Goods	50	20	4.4%	9.4%	Pool Corp	1.3%	Arrow Electronics Inc
Construction–Special Trade Contractors	17	3	4.0%	5.4%	EMCOR Group Inc	2.8%	Chicago Bridge & Iron Co NV
Services–Personal Services	72	3	3.8%	9.3%	H&R Block Inc	0.6%	Service Corp International
Services–Engineering, Accounting, Research, Management and Related Services	87	13	3.7%	9.7%	Parexel International Corp	0.2%	Servicemaster Global Holding
Manufacturing–Rubber and Miscellaneous Plastic Products	30	7	3.4%	10.3%	Nike Inc-Class B	0.5%	Armstrong World Industries

In contrast, the market value of equity typically will exceed a firm's book value of equity by a substantial margin.

Table 4 shows the changes in firms' debt to total capital ratio. Overall, the results are very similar to those shown in Table 3. Eight of the top ten industries in Table 4 are in the top 10 of Table 3, the other two ranking in the top 15. In most cases, the impact of including the capitalized operating leases is less dramatic in Table 4. Consider, for example, the top segment in Table 4, Retail Trade–Home Furniture, Furnishings and Equipment Stores. The firm with the largest change was Williams-Sonoma that showed an increase in its debt to capital ratio of 22.7 percentage points, compared with a 39.8 percentage point change in its debt to (book value) total assets, as shown in Table 3.

For 80% of the firms in top 1,000, their leverage as measured by the book value debt to total asset ratio is higher than when measured by the debt to total capital ratio that uses the market value of equity. However, for 200 of the firms the result is opposite with their debt to total capital ratio falling below their book value debt ratio. This occurs because of differences in how the metrics are calculated and differences in the use of operating liabilities across firms. For example, without including operating leases Best Buy's debt ratio is 12.83 and its debt to total capital ratio is 14.20. Best Buy's market value of equity, used in the debt to total capital ratio is $10.476 billion, $6.098 larger than its book value of equity. The firm's total capital includes $1.734 billion of debt, making its total capital $12.210 billion. However, the firm's total book value of assets is $13.519 billion resulting in a lower book value debt ratio. This result occurs because total assets include those financed both with capital (equity plus interest bearing debt) and with operating liabilities, $6.530 billion of working capital liabilities in Best Buy's case. Because the firm's operating liabilities exceed the difference between its book and market values of equities, the Debt to Total Capital ratio is less than its book value debt ratio. This result is also reflected in the values after including the firm's operating leases, valued at $3.144 billion. Its book value debt ratio is then 29.27 compared with a higher debt to capital ratio of 31.77.

6. Implications for investors

For individual investors, two things should be clear from the discussion so far. First, firms have been allowed to keep massive amounts of debt off-balance sheet through the use of operating leases. Second, the changes that have been announced by FASB will correct this situation and make unadjusted leverage metrics based on the balance sheet much more representative of the true leverage of the firm. However, as noted, these changes will not appear until 2019 so, in the interim, individual investors should either learn how to adjust leverage measures for operating leases or rely on a data source, such as Bloomberg, that does that for them.

However, this pending change is likely to raise other questions. For example, will stock and bond prices be affected when this large amount of previously hidden debt comes onto balance sheets? Will firms suddenly violate their debt covenants when high amounts of off-balance sheet debt appear on their balance sheet, pushing them into default? Will estimates of future cash flows increase when income statements reveal an increase in

Table 4 Change in value of debt to total capital
If proposed changes were applied to 2015 fiscal year largest 25 divisions, by two-digit SIC codes

Division	SIC	Firms	Division average change	Largest change by division		Smallest change	
Retail Trade–Home Furniture, Furnishing, & Equipment Stores	57	4	20.0%	22.7%	Williams-Sonoma Inc	17.6%	Best Buy Co Inc
Retail Trade–Apparel & Accessory Stores	56	11	18.1%	34.0%	American Eagle Outfitters	3.1%	Under Armour Inc-Class A
Retail Trade–Food Stores	54	5	16.7%	41.3%	Whole Foods Market Inc	5.1%	Dunkin' Brands Group Inc
Transport & Public Utility–Transportation by Air	45	10	13.2%	21.4%	United Continental Holdings	0.7%	Allegiant Travel Co
Manufacturing–Leather and Leather Products	31	2	12.8%	16.9%	Skechers USA Inc-Class A	8.7%	Coach Inc
Retail Trade–Eating & Drinking Places	58	14	12.6%	26.3%	Cheesecake Factory Inc/The	2.1%	Aramark
Agriculture–Agricultural Services	07	1	12.4%	12.4%	VCA Inc	12.4%	VCA Inc
Retail Trade–Miscellaneous Retail	59	19	10.7%	39.0%	Dick's Sporting Goods Inc	0.3%	Express Scripts Holding Co
Services–Social Services	83	1	10.4%	10.4%	Bright Horizons Family Solutions	10.4%	Bright Horizons Family Solution
Services–Educational Services	82	2	9.6%	13.3%	Graham Holdings Co-Class B	5.9%	Houghton Mifflin Harcourt Co
Manufacturing–Apparel, and other Finished Products Made from Fabric and Similar Materials	23	8	9.5%	20.6%	Burlington Stores Inc	2.2%	Hanesbrands Inc
Retail Trade–General Merchandise Stores	53	12	8.9%	26.3%	Big Lots Inc	0.1%	Casey's General Stores Inc
Services–Motion Pictures	78	8	8.5%	23.6%	AMC Entertainment Hlds-Class A	0.8%	Netflix Inc
Construction–Heavy Construction other than Building Construction Contractors	16	2	6.9%	11.2%	Jacobs Engineering Group Inc	2.6%	Fluor Corp
Retail Trade–Automotive Dealers and Gasoline Service Stations	55	10	6.2%	16.5%	Advance Auto Parts Inc	0.9%	Carmax Inc
Building Materials, Hardware, Garden Supply and Mobile Home Dealers	52	5	5.6%	14.2%	Tractor Supply Company	2.0%	Fastenal Co
Services–Amusement and Recreation Services	79	4	5.1%	14.8%	Live Nation Entertainment In	0.8%	Churchill Downs Inc
Construction–Special Trade Contractors	17	3	4.5%	5.8%	Emcor Group Inc	3.3%	Chicago Bridge & Iron Co Nv
Fin Ins and Real Estate–Insurance Agents, Brokers and Service	64	5	4.0%	4.8%	Marsh & Mclennan Cos	2.3%	Brown & Brown Inc
Wholesale Trade–Durable Goods	50	20	3.3%	6.3%	Airgas Inc	0.9%	WW Grainger Inc
Manufacturing–Petroleum Refining and Related Industries	29	14	3.2%	7.4%	Tesoro Corp	0.5%	Marathon Oil Corp
Services–Personal Services	72	3	3.0%	7.6%	H&R Block Inc	0.7%	Service Corp International
Manufacturing–Printing, Publishing and Allied Industries	27	9	2.9%	12.3%	News Corp-Class A	0.0%	Cimpress NV
Transport & Public Utility–Communications	48	30	2.5%	11.1%	US Cellular Corp	0.0%	CBS Corp-Class A Voting
Services–Health Services	80	16	2.5%	7.2%	Brookdale Senior Living Inc	1.0%	Mednax Inc

expenses related to these leases? Fortunately, for investors, the answer to each of these questions is "probably not."

The primary reason for this optimism is that significant revaluations in stock prices occur in response to new information and while the impact of off-balance sheet leases may be news to some individual investors, it is not news to the professional investment community. Furthermore, none of the information we have reported is "hidden." As discussed earlier, that data are reported in footnotes and analysts have long been estimating the value of off-balance sheet debt and revising reported balance sheets with this information. As a result, metrics used to provide valuation estimates for the stocks of these firms already reflect this information.

Debt covenants may be affected by this new standard and in some cases companies and their lenders will have to renegotiate existing covenants to adjust for the newly reported on-balance sheet debt. In a 2011 survey by Deloitte of 178 executives of firms with operating leases, 44% of respondents reported that the new standards would likely affect their companies' existing debt covenants. They note that "this may lead to renegotiation of outstanding debt instruments, which could provide a potential opportunity to exact more concessions from lenders or borrowers, depending on the condition" (Deloitte 2011). However, the impact of this is also likely to be small as Paik et al., (2015) notes that lenders to companies with significant operating leases already tend to focus on income statement based coverage ratios rather than balance sheet ratios in their covenants. Because the income statements of these companies will be essentially unchanged, the impact on these covenants should be small.

Overall, it is likely that the impact of this change on security prices will be small and insignificant. The market value of a company can be estimated in a number of ways. Discounted cash flow models estimate the present value of future free cash flows at a discount rate that is appropriate for the firm's business and financial risk. Values can also be estimated based on various multiples, including sales and EBITDA. The capitalization of operating leases will not affect the cash flows to the firm and professional investors have already been including the impact of operating leases in their estimations of leverage and cost of capital. While companies will now provide estimates of the present value of their operating leases that may be somewhat more accurate than those previously done by analysts based on footnote disclosures, there is no reason to think that these values will be consistently higher or lower and therefore any impact is likely to be small and random.[6]

7. Conclusion

This article discusses the new FASB standard that will require firms to capitalize their operating leases beginning in 2019, and the implications to investors. We provide a brief explanation of the new standard and how it will affect financial statements, and we reveal which of the largest 1,000 firms and industries will be impacted significantly by the change. We then ask, "What impact will this have on the stock and bond value of these firms?" In short, while firms that are taking advantage of the current standard, those in the retail trade being the heaviest users for example, will show dramatic increases in liabilities and expenses

as a result of moving their operating leases onto their balance sheets, we caution investors not to anticipate changes in their stock or bond valuations resulting from this change. Asset values change in response to new information, and the information we present in this article regarding changes in total assets and debt ratios is currently available from data providers such as Bloomberg, and is already being used by professionals to forecast asset values and future cash flows.

Notes

1 Specifically, public companies will be required to meet the new standards beginning with financial statements for periods that begin after December 15, 2018.
2 Lessees will be required "to apply a modified retrospective transition approach to each lease that existed at the beginning of the earliest comparative period presented in the financial statements, as well as leases entered into after that date." (PricewaterhouseCoopers, 2016) Consistent with accounting standard ASC 250, companies will report the effect of the change on prior periods and the cumulative effect on balance sheet accounts.
3 See the Appendix for an example from Urban Outfitters.
4 The criteria for determining a lease's status is more subjective under the new standards. For example, a lease may be considered a finance lease if its term is for the "major part" of the assets remaining economic live or its present value exceeds "substantially all" of the fair value of the asset. (Spiceland et al, 2017).
5 For the remaining 53 firms, we next searched Value Line for each firm's "Financial Strength" rating and used this as a proxy for the firm's debt rating. Value Line (2008) notes that their "Financial Strength ratings take into account a lot of the same information used by the major credit rating agencies. Our analysis focuses on net income, cash flow, the amount of debt outstanding, and the outlook for profits, and the stability of the industry and the individual company returns. Other factors also enter into the equation." Using this indicator as a proxy for debt credit ratings, we estimated the cost of debt for an additional 47 firms.
6 Boatsman and Dong (2011) and Altamuro et al. (2014) provide evidence that off-balance sheet leases are priced by investors.

Appendix: The reporting and valuation of operating leases

Shown below is Note 13 from Urban Outfitters Annual Report for the 12 months ending January 31, 2016. To estimate the present value, we assumed that after 2021, the remaining $772,226 will be paid at the same annual rate as in 2021. That is, the estimated lease payments in 2022, 2023 and 2024 will be $199,685 per year leaving a remainder of $173,171 in 2025. Discounted at the firm's estimated pretax cost of debt of 2.39%, the present value of the firm's operating leases is estimated to be $1,780,113.

13. Commitments and contingencies

Leases

The Company leases its stores, certain fulfillment and distribution facilities, and offices under non-cancelable operating leases. The following is a schedule by year of the future minimum lease payments for operating leases with original terms in excess of one year:

Fiscal year	
2017	$272,255
2018	263,876
2019	246,043
2020	228,091
2021	199,685
Thereafter	772,226
Total minimum lease payments	$1,982,176

Amounts noted above include commitments for 37 executed leases for stores not opened as of January 31, 2016. The majority of our leases allow for renewal options between five and ten years upon expiration of the initial lease term. The store leases generally provide for payment of direct operating costs including real estate taxes. Certain store leases provide for contingent rentals when sales exceed specified levels, in lieu of a fixed minimum rent, that are not reflected in the above table. Additionally, the Company has entered into store leases that require a percentage of total sales to be paid to landlords in lieu of minimum rent.

Rent expense consisted of the following:

	Fiscal year ended January 31		
	2016	2015	2014
Minimum and percentage rentals	$245,474	$234,982	$205,759
Contingent rentals	2,704	3,901	5,542
Total	$248,178	$238,883	$211,301

The Company also has commitments for unfulfilled purchase orders for merchandise ordered from our vendors in the normal course of business, which are satisfied within twelve months, of $407,833. The majority of the Company's merchandise commitments are cancellable with no or limited recourse available to the vendor until the merchandise shipping date. The Company also has commitments related to contracts with construction contractors, fully satisfied upon the completion of construction, which is typically within twelve months, of $1,535.

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