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Bringing leased assets onto the balance sheet

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ABSTRACT

Pending changes in lease accounting standards will require firms to recognize obligations that have historically been kept off-balance-sheet (OBS). We examine the implications of this accounting treatment for a host of common risk and performance metrics. Conventional leverage, Z-Score, levered beta, return on capital and other asset utilization measures underestimate risk and overstate performance of firms relying heavily on OBS leasing. The distortion affects relative rankings as well as average levels and has increased over time. Proposed changes in reporting standards aim to mitigate future distortion, but necessitate adjustments for time-series comparisons. Under current reporting standards, investors, analysts, and researchers can estimate leased asset value and adjust accounting-based metrics to better reflect these fixed costs.

1. Introduction

Off-balance-sheet (OBS) leases have historically allowed firms to make fixed-cost capital expenditures without recognizing them on the balance sheet.[3] However, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) are reforming accounting standards for lease financing. The expected result of this joint initiative is a change toward recognizing lease obligations on the balance sheet.

The implications of the proposed new accounting standards are wide-ranging from potential effects on debt covenants and regulatory capital metrics to compliance costs, employee compensation benchmarks, and IT systems.[4] The purpose of this paper is to measure the magnitude of the leased capital potentially brought onto corporate balance sheets and to demonstrate the implications of this pending change in accounting standards on commonly employed risk and performance metrics. We find that capitalizing leased assets alters both the cardinal measures and ordinal rankings of firms by the common metrics explored here. Investors, analysts, regulators, and empirical researchers will need to adjust these accounting measures in order to compare firms across time.

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[3] OBS leases are non-cancellable, long-term, fixed-cost claims with bankruptcy priority. These characteristics make OBS leases fundamentally equivalent to conventional debt obligations.
[4] FASB and IASB technical staff review a host of consequences in FASB Memo 123 dated January 2011.

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We first examine trends in U.S. corporations' use of operating leases and find that this source of fixed-cost financing increased 745% as a proportion of total debt from 1980 to 2007. We determine that the trend remains significant (at 1%) in a fixed-effect regression model controlling for changes in theoretical determinants such as firms' financial health, market-to-book, and marginal tax rates. Adding firm fixed effects to the leasing model of Graham et al. (1998) obtains unanticipated results: the coefficient on marginal tax rate changes sign.[5] Controlling for time-invariant effects, this model no longer provides unambiguous evidence supporting the hypothesis that low tax rate firms lease more than high tax rate firms. More important for our purpose, the trend remains significant in specifications with and without fixed effects.

Next, we estimate 'abnormal leasing' at the firm level to proxy for firms' perceived benefits of the current OBS accounting treatment.[6] We define abnormal leasing as the leasing activity beyond that predicted by the theoretical determinants. We employ our measure of abnormal leasing as an additional explanatory variable in Lemmon et al. (2008) capital structure models controlling for initial leverage or firm fixed effects.[7] We find that conventional debt ratios are significantly negatively related (at 1%) to abnormal OBS leasing suggesting that the perceived benefits of OBS leasing—which will be lost under new accounting rules—have historically been a significant factor in firms' capital structures. Rauh and Sufi (2012) explore in great detail the importance of leased assets in models of corporate capital structure. Our focus is the OBS accounting treatment and implications of the pending changes.

Finally, we adjust common accounting-based measures of risk and performance to reflect the fixed-cost lease obligations and find that each understates the risk or overstates the performance of the firms relying most heavily on OBS leasing. If leased assets were recognized on the balance sheet over our 27-year sample period, average debt-to-capital ratios would increase 15–29% and average levered equity betas increase by 18–33%. Because OBS leasing varies widely by firm, capitalizing leased assets affects *relative* comparisons as well as average levels. Capitalizing leased assets results in 12% of sample firm-years being reclassified into a riskier group according to Z-Scores. We find that the impact on *ROC* exhibits a leverage effect; *ROC* is increasing (decreasing) in OBS leasing for firms with positive (negative) operating income.

A rich accounting literature notwithstanding, recent appreciation for the financial implications of accounting rules among financial economists includes the study of historical cost accounting by Ellul et al. (2012) and the study of fair value accounting rules by Livne et al. (2011).[8] Other related empirical work documents the consequence of capitalizing OBS assets in other contexts. Franzen et al. (2007) document the impact of capitalizing research assets (R&D expense) on bankruptcy prediction models. Shivdasani and Stefanescu (2010) document the impact on financial leverage of capitalizing defined-benefit pension plans (which FASB enacted in 2006 with SFAS 158). We contribute to this literature by examining the time trend in lease financing and the implications of the (changing) OBS accounting treatment for a host of commonly employed risk and performance metrics.

The paper proceeds as follows. We explain current reporting requirements for leases in Section 2 and review related literature considering the motivation for lease financing in Section 3. We describe our data in Section 4 and discuss methodology and empirical results in Section 5. Section 6 concludes.

2. Financial reporting of leases

Generally Accepted Accounting Principles (GAAP) classifies lease obligations as a capital lease (recognized on the balance sheet) if the lease meets at least one of the four criteria identified in Accounting Standards Codification topic 840 (formerly FAS No. 13):

(1) the agreement specifies that ownership of the asset transfers to the lessee
(2) the agreement contains a bargain purchase option
(3) the lease term is equal to 75% or more of the expected economic life of the asset
(4) the present value of minimum payments equals or exceeds 90% of fair value.

At the inception of a *capital* lease, a firm recognizes the liability and a leased asset on the balance sheet. Like assets financed by conventional debt, firms depreciate this type of leased asset over its useful life while periodic interest accrual decreases the liability over time. However, if a contract does not meet any of the four criteria above, it qualifies as an *operating* lease and is not recognized on the balance sheet. Future contractual commitments under operating leases are disclosed in notes which accompany financial statements. Specifically, ASC topic 840 requires disclosure of future minimum payments in the aggregate and for each of five subsequent years.

[5] See Flannery and Rangan (2006) and Lemmon et al. (2008) regarding the importance of unobserved time-invariant firm-specific effects in models of capital structure.

[6] Aboody (1996), Altamuro (2006), Altamuro et al. (2008), Ahmed at al. (2009), Beatty et al. (2010) and Cornaggia et al. (2012) consider potential gains to OBS lease accounting treatment in greater detail.

[7] Our results are not sensitive to the choice of capital structure model. We are interested in the role of OBS accounting treatment rather than contributing to the debate over the partial adjustment process studied by Flannery and Rangan (2006) and Hovakimian and Li (2011).

[8] Early work by Imhoff et al. (1991) considers balance sheet effects of operating leases over a single period, assuming income statement effects are negligible. Imhoff et al. (1997) revisit income statement effects and advocate constructive capitalization. See Fields et al. (2001) for a thorough review of the empirical research on accounting choice.