July 1, 2015

Financial Accounting Standards Board  
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International Accounting Standards Board  
First Floor  
30 Cannon St.  
London EC4M 6XH  
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Re: Economic Impact of Proposed Accounting Standard Revision (Leases, Topic 842)

Dear Board Members and Staff:

Dr. Justin Adams and I undertook a study of the then-pending Exposure Draft on Leases in 2012 entitled, “The Economic Impact of the Current IASB and FASB Exposure Draft on Leases.” It has come to my attention that the Financial Accounting Foundation (FAF) has funded a paper by Prof. Robert Lipe at the University of South Carolina reviewing the study. Apparently this paper has not been published on the FASB or IASB websites or otherwise. As the paper contains several material errors, I request that this correspondence, which includes the paper as an Exhibit, be included in the comment file for the pending standard revision.

Since our study was published in February 2012, several publications appear to have validated our position that the proposed Leases standard, which as amended since 2012 still retains the most troubling provisions from an economic impact standpoint, will have negative consequences on an indeterminate number of U.S. companies, leading to an erosion of jobs and output throughout the U.S. economy. The Lipe paper does not address these publications. Instead, it is focused on four areas in which the author offers his opinions without resort to empirical data. I address each of the four points in what follows.

1. The paper asserts that currently off-balance sheet operating leases are already treated by many analysts as on-balance sheet liabilities, and infers from this that our analysis wrongly predicted that the proposed standard will induce changes in both borrowing costs and spending behavior. Prof. Lipe states that his inference is based on insights he has derived from his teaching, practice and secondary research of intermediate accounting textbooks and credit rating documents.

Despite Lipe’s speculations, industry is becoming more vocal about the negative impact that the proposed standard will have on business operations. See, e.g., “Lease Accounting Changes Jar Bank Covenants,” CFO.com, February 2014 (“Changes to financial statements of banks and their borrower customers would be vast”, quoting Dennis E. Dixon, President, International Bancshares Corp.). Dixon predicts the proposed Leases standard will “result in a de facto
increase in the regulatory capital requirements of financial institutions. This is especially troublesome because financial institutions are already subject to increased capital levels due to Dodd-Frank and the Basel III capital requirements.”

Dixon echoes the testimony of Francoise Flores, Chairman of the European Financial Reporting Advisory Group. “The proposals are also likely to impact financial ratios and debt covenants of entities,” according to Chairman Flores. “This may affect capital requirements based on local regulation and possibly increase the cost of capital for entities.”

Moreover, two recent studies further support our study’s prediction that the pending Leases standard may impact companies’ loans. As reported in the Wall Street Journal on September 2, 2014, Grant Thornton International surveyed more than 2,000 directors and C-level executives concerning the proposed changes. Fully 75 percent of the executives polled reported that their loans could be recalled if covenant violations are triggered by the standard, such as a specific debt-to-equity ratio, fixed-asset ratio or various earnings metrics. While approximately five percent thought that proposed changes would in fact negatively impact them, the CEO of Grant Thornton, Ed Nussbaum, believes the figure will be higher. “Many companies are in for a big surprise when this comes out and they have to go to the bank,” he said. “They need to start talking to their bankers.”

Morgan Stanley recently reported that retailers would be hit hard by the accounting change as well. Though the study focused on the Australian retail market, the points are telling for the US and other markets as well. “The impact on retailers will be ‘considerable,’ blowing out gearing levels and reducing return on capital employed,” they predict. Similarly, KPMG audit partner Patricia Stebbens expects that the proposed changes will boost leverage ratios, forcing some companies to renegotiate debt covenants with bankers. “They should be having that conversation earlier,” Ms. Stebbens said. (See “Retailers Face Multibillion-Dollar Hit from Proposed Lease Accounting Changes,” Sydney Morning Herald, April 22, 2015.)

Both the Grant Thornton and Morgan Stanley analyses suggest that the Leases standard will have not merely a theoretical effect but a real-world negative impact. It takes nothing away from this concern that it is difficult to precisely quantify these effects in advance. Our study establishes a range of outcomes to account for uncertainty.

2. The second part of Lipe’s review of our study presumes that the adoption of the Leases standard will be similar in effect to the adoption of SFAS 106 in the early 1990s. This is a classic example of begging the question. Based entirely on this unfounded assumption, Lipe purports to predict the impact of the proposed Leases standard by examining the borrowing cost and expenditures of AT&T and Chrysler after SFAS 106. Since neither AT&T nor Chrysler behaved in the manner our study predicts many corporations will respond to the Leases standard, he claims the study’s prediction must be wrong.

Lipe’s method, inasmuch as it is based entirely on fallacious logic, is to say the least unconventional. It necessarily produced a flawed generalization.
His assumption fails to account for other compounding factors which could either increase or decrease the companies’ cost of capital during the study time period. For example, factors such as increases and decreases in the overall borrowing rate are not included. For this reason, his approach does not sufficiently isolate the impact of SFAS 106.

This methodology of cherry-picking two companies and relying entirely on their experience during this period cannot be generalizable. Indeed, were we to generalize solely from the experiences of AT&T and Chrysler during this period, we would also conclude that increased balance sheet liabilities recognition leads to the reduction of interest rates and an increase of expenditures. This plainly illustrates why Lipe’s conclusions are an overreach based on a simplistic approach.

3. Lipe’s contention that our study should have discounted cash flows is simply in error. Please note that our study is a standard policy analysis and uses standard acceptable conventions of policy analysis. Organizations including the Congressional Budget Office regularly use constant dollar figures to report results of policy analyses. Also the analytical tool used for this purpose, the RIMS II jobs multipliers produced by the US Bureau of Economic Analysis, mandates the use of constant dollars in order to correctly apply the jobs multipliers. Discounting the dollars as described by Lipe to estimate jobs impacts would be a significant technical error leading to incorrect results.

4. Lipe does seem to understand that the Leases standard as proposed would result in at least some harm to the economy. He notes that “adoption of the new leasing guidance will undoubtedly affect some companies.” Unfortunately he makes no attempt to quantify the effect on jobs and GDP. Instead, he simply opines that it will “likely” be a “blip.” Such surmise does not provide policy makers reliable, evidence-based information they need to make decisions.

The Boards’ goal of improving the accounting presentation of leases is laudable. However, there is tremendous uncertainty and risk associated with imposing this particularly sweeping new accounting standard that will reclassify literally trillions of dollars on financial statements. Entering into this terra nova without any data on actual implementation costs and behavioral change is exceedingly risky business.

Because of the lack of empirical data, our study was forced to report on a very large range of potential outcomes. These ranged from a loss of 190,000 jobs (roughly equivalent to the amount of jobs that the US has gained every 20 days during the last year) to a loss of approximately 3.3 million jobs. We are concerned that the FASB and IASB have not used your considerable resources over the past three years since the release of our study to provide more clarity in the form of empirical data. Such data could be used to better evaluate the potential economic impact of the proposed changes, and to isolate those portions of the proposal that carry the greatest risk of negative economic impact and distortive behavioral change.

We would welcome, as I am certain the financial and business community generally would welcome, the development of such data for more sound analysis of the costs and benefits of the pending proposal. Instead, the paper by Prof. Lipe appears to represent an effort to trivialize the
real-world concerns that have been raised and to obscure rather than illuminate the issues. It is our hope that FASB and IASB choose to use the time remaining before promulgation of a Leases standard in final form to develop useable empirical data to inform the ultimate choices you will have to make in the standard.

In the meantime, it would be extremely dangerous for the FASB and IASB to rely on Prof. Lipe’s surmise as to economic impact (or more particularly, his surmise that economic impacts can be safely ignored). If the Boards wish to resolve the question of whether his opinions are correct, then clearly the production of actual empirical data concerning cost of implementation and impacts on behavior is the answer. To my knowledge, that has yet to be done. I believe the FASB and IASB process would be strengthened by doing this.

Thank you for providing me this opportunity to comment on the Lipe paper. If you have any additional questions or comments, please feel free to contact me at andrew.chang@AChangLLC.com or 916-538-6091.

Sincerely,

Andrew Chang
Review of the Chang and Adams Leasing Study:
Are the Predicted Economic Effects Likely to Occur?

April 2015

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The research for this paper was funded by the Financial Accounting Foundation, the parent organization of the Financial Accounting Standards Board (FASB) and the Governmental Accounting Standards Board (GASB). The conclusions are solely those of the author.
This paper provides a review of a recent study (CA Study) regarding the likely economic effects of the FASB's proposal to require balance sheet recognition of lease assets and liabilities for all leases with terms exceeding one year. The CA Study attempts to measure how the change in accounting would affect U.S. jobs and GDP. My key findings are:

- The numerical analysis in the CA Study is dependent on the assumption that credit analysts and banks ignore the liabilities and assets implicit in off-balance sheet leases but then fully incorporate those liabilities and assets in their analyses once the proposed lease accounting standard is adopted. Insights from teaching, practice, and research related to credit analysis provide compelling evidence that off-balance sheet leases already are included by many analysts, so that the proposed change in lease accounting is unlikely to significantly change lending decisions. As a result, the numerical analysis in the CA Study overstates the job loss and GDP reduction associated with the FASB's proposal due to a problem with one of the study's underlying assumptions, and the overstatement is likely to be large.

- I apply the methods used in the CA Study to compute the economic effects of requiring AT&T and Chrysler to recognize additional liabilities from using accrual accounting for postretirement benefits other than pensions (the adoption of SFAS 106 in the early 1990s). The model in the CA Study predicts extreme economic effects, but none of the predictions materialized. The size of the predicted effects related to SFAS 106 suggests that the model in the CA Study is misspecified in a way that overstates the economic effects of mandated accounting changes.

- Because their analysis uses undiscounted cash flows, the CA Study overstates the assets and liabilities to be recognized under the FASB's proposal. This failure to discount future lease payments causes the predicted economic effects of the proposal to be overstated.

- The three factors mentioned above – the unrealistic assumption, the specification problem, and the failure to discount – have distinct effects. In other words, each factor likely causes additional overstatement beyond the effects of the other two factors. When the implications of these three factors are viewed in combination, the only possible conclusion is that the CA Study substantially overstates the loss of jobs and GDP reduction associated with the FASB's proposed lease accounting.

While not a focus of the numerical analysis in the CA Study, evidence reviewed in this paper suggests that the majority of lessees are unlikely to face significant negative consequences due to debt covenant violations. Research shows few companies report violations of debt covenants due to mandatory changes in accounting methods, in part because many debt covenants exclude the effects of mandatory accounting changes and in part because covenants within loans made to companies with significant operating leases are written in ways that are not sensitive to whether the lease assets and liabilities are capitalized or not.

Overall, the paper casts serious doubt as to the validity of the predictions made by the CA Study.
1. Introduction

A study titled *The Economic Impact of the Current IASB and FASB Exposure Draft on Leases* was released in 2012 by Chang and Adams Consulting (hereafter, the CA Study). The CA Study predicts substantial negative economic outcomes for the economy of the United States if the Financial Accounting Standards Board (FASB) adopts proposed changes to the accounting guidance for leases. Predictions are that the U.S. would suffer between 0.19 and 3.3 million lost jobs and a reduction in Gross Domestic Product between $27.5 billion to $478.6 billion annually.

The conclusions in the CA Study are based on two premises: (a) financial accounting information is used by decision makers and (b) the decision makers do not distinguish between financial outcomes driven by mandated accounting changes versus changes in the fundamental economics of the reporting entity. The first premise is very reasonable. The second is unlikely to hold in general, and it is less likely to hold in the specific case of lease accounting because financial statement users often adjust financial statements for off-balance sheet leases.

Accounting and financial reporting are important to the orderly functioning of an economy and a prosperous society. If the fundamental economics of a company – selling prices for its output, costs of labor, etc. – change, then its reported financial results also should change. The change in reported financial results alerts financial statement users to a shift in the company's fundamentals. Investors may change their decisions to buy, hold, or sell company shares when they see financial results changing over time. Creditors often use financial information to determine the price to charge for a loan, and they monitor changes in reported financial results during the term of the loan to judge the health of the borrower. Accounting information also helps suppliers, regulators, employees, and others to make informed decisions. All of this supports the first premise in the CA Study.

However, some changes in financial results over time are the result of changes in the accounting methods used to prepare the reports rather than changes in the company's fundamentals. Some of these changes in methods are voluntary choices by the company. Other changes in accounting methods are mandated by a standard setter or a regulator. In section 2 of this paper, I discuss whether financial statement users should be expected to alter their assessments of a company if the FASB requires companies to record liabilities and assets for all long-term leases. Because the numerical analysis in the CA Study focuses on how increased leverage will affect the cost and/or usage of borrowing, section 2 specifically addresses adjustments made by credit analysts. Academic accounting texts, public statements by credit rating agencies, and large sample empirical evidence about the determinants of interest rates charged in commercial loans combine to provide compelling evidence that many lenders and their analysts already include adjustments for the impact of off-balance sheet leases in their lending decisions.

This seriously undermines the second premise in the CA Study that lenders will respond to the recognition of lease assets and liabilities as new information about the fundamentals of the company. Moving information about leases from the financial statement footnotes to the balance sheet is unlikely to cause a large change in the lessees' cost of borrowing, and in the numerical model in the CA Study, if borrowing costs do not increase, then jobs and GDP are unaffected.

A different approach to evaluating an economic model is to apply the model to a prior event where the outcomes are known. Section 3 illustrates the predictions of the CA Study in the context of the FASB's mandate that companies accrue liabilities for postretirement benefits other than pensions. Specifically, I examine one company that mimics what the CA Study refers to as the “best case scenario” and another that mimics the “worst case scenario.” The model in the CA Study predicts a 10-fold increase in interest rates for one company, and a large reduction in capital expenditures for another.

Actual results for these companies go in the directions opposite to those predicted. But more importantly, the analysis shows that the model leads to unrealistically large predicted effects in the case of postretirement benefits other than pensions. The result suggests that the model in the CA Study overstates the economic impacts of mandated accounting changes in general, and given the discussion in section 2 that many users already adjust for the effects of off-balance sheet leases, the overstatement will be even larger for the FASB's proposed change in lease accounting.

The paper concludes with several other observations about the CA Study and the proposed change in lease accounting. In particular, a failure to discount future lease cash flows causes an overstatement on the order of 25% in their predictions in addition to the overstatements mentioned above. The analysis leads me to conclude that the changes in the cost and usage of borrowing predicted by the CA Study are substantially overstated. While adoption of new leasing guidance will undoubtedly affect some companies, the net effect on jobs and GDP will likely be a tiny blip.
2. What Might Change if the Proposed Lease Accounting Is Adopted?

2.a. Brief Background on Lease Accounting and the CA Study Numerical Analysis

Under current U.S. Generally Accepted Accounting Principles (GAAP), a company (lessee) that leases an asset from another company (lessor) applies either the capital or the operating lease method, and GAAP contains some explicit rules for determining which method is applied based on the characteristics of the arrangement. If the arrangement is deemed a capital lease, the lessee records an asset and a liability equal to the present value of future minimum lease payments at the inception of the lease. Under the operating lease method, the lessee may record some prepaid rent (asset) or rent due (liability), but these amounts are generally trivial compared to the assets and liabilities recorded under the capital lease method. For both types of leases, lessees must disclose the minimum lease payments due in each of the next five years and the total of the payments due beyond five years. Under current GAAP, the amount and components of income in each subsequent year also differ depending on whether the lease is initially classified as capital versus operating.

Under the FASB’s most recent lease accounting proposal, 1 lessees must record assets and liabilities for any lease whose terms can extend beyond 12 months. As described in the CA Study and the sources cited in that study, companies with significant amounts of operating leases would report much larger asset and liability balances if the lease proposal is adopted. The recent proposal modifies the income effects for some types of capital leases, but I defer discussion of the income statement effects until later because the numerical analysis in the CA Study focuses only on balance sheet amounts.

The numerical analysis in the CA Study posits two possible ways that people will react to increased capitalization of leases by lessees:

Lender reaction: The CA Study posits that the interest rate charged by a financial institution is linearly related to the borrower’s reported amount of liabilities divided by its reported assets (hereafter, the liability-to-asset ratio). If lessees record assets and liabilities for their operating leases and if they do not reduce existing debt (see below), then the liability-to-asset ratio generally increases. 2 The increase in this ratio causes lenders to charge higher interest rates when the existing debt is refinanced or renegotiated. The increased borrowing costs cause economic hardships to the lessee, and the CA Study predicts these hardships will then ripple through the economy. The CA Study refers to this as the “best case scenario” because it produces fewer job losses and less of a reduction in GDP than the other scenarios. I use “lender reaction” to clarify which party is responding to the accounting change.

Borrower reaction: The CA Study posits that the lessee can avoid the economic hardship of increased interest rates under the lender reaction scenario by using cash to pay down existing debt so that the liability-to-asset ratio remains constant. However, because cash is used to retire existing debt, the lessee must reduce capital expenditures, wages, and other operating expenditures, and this leads to a reduction in productivity. The CA Study estimates the reduced productivity of the lessee and the ripples it sends throughout the economy in terms of jobs and GDP. Because the predicted economic effects are larger under this scenario, the CA Study labels it the “worst case scenario.” In addition, the CA Study posits a “mid-case scenario” which entails partial but not complete borrower reaction, which then results in a lender reaction that is smaller than if the borrower did not respond at all.

My analysis in this section focuses on the lender reaction scenario, because if lenders are not expected to increase the interest rates charged on existing debt, then rational borrowers have no incentives to suffer the alleged economic hardship that comes from reducing leverage.

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1 The best source for current information about the FASB’s proposal is their website: http://www.fasb.org/. The website contains formal exposure documents as well as decisions to date. The information in this paper is based on the website as updated through 12/24/2014.

2 In the rare case when a company reports negative shareholders’ equity, the liability-to-asset ratio decreases when equal amounts of assets and liabilities are added to the balance sheet.
2.b. Significant Lender Reaction to Increased Lease Liabilities and Assets Is Unlikely

A key assumption in the CA Study is that the decision makers do not distinguish between financial outcomes driven by mandated accounting changes versus changes in the fundamental economics of the reporting entity. In the case of the proposed lease accounting, the lender reaction scenario depends upon credit analysts mechanically responding to the increase in the liability-to-asset ratio caused by mandating that lessees record their operating lease commitments as assets and liabilities. For the mechanical response to be plausible, analysts must view the non-cancelable payments under long-term leases as liabilities when the lease commitments are capitalized in the balance sheet but not when the commitments are merely disclosed in the footnotes to the financial statements. Using the current lease accounting labels – the mechanical response requires that analysts view capital leases as increasing a company’s leverage but that they ignore operating lease commitments in computing leverage.

As described in this subsection, I investigate teaching, practice, and research for evidence of how credit analysts treat off-balance sheet leasing. The three different sources of information provide a single clear conclusion; many credit analysts can and do adjust leverage ratios for the off-balance sheet effect of operating leases.

Several academic research papers demonstrate how financial statement users can use a lessee’s disclosures about its operating leases to adjust leverage ratios as if the lessee had capitalized the lease. In addition, most intermediate accounting textbooks show students how to adjust the lessee’s financial statements to reflect the capitalization of operating leases. For example, a text by Revsine, Collins, Johnson, and Middlestadt includes five pages of detailed instructions on the subject. As a result, most analysts with undergraduate or master’s degrees in accounting or finance know how to modify their credit analysis to adjust balance sheets for operating leases.

But do credit analysts practice what the professors teach? Evidence suggests that analysts adjust for off-balance sheet leases, at least in industries with significant operating leases. For example, on page 92 of its Corporate Ratings Criteria document from 2006, Standard & Poor’s states that “To improve financial ratio analysis, Standard & Poor’s Ratings Services uses a financial model that capitalizes off-balance sheet operating lease commitments and allocates minimum lease payments to interest and depreciation expenses.” Their goal is that “all rated companies are put on a more level playing field, no matter how many assets are leased and how the leases are classified for financial reporting purposes.” To summarize the adjustments, the rating agency adds the present value of minimum future operating lease payments “to reported debt to calculate the total-debt-to-capital ratio. The [present value] is also added to assets to account for the right to use leased property over the term of the lease” (page 93).

Another credit rating agency, Moody’s Investors Service, calculates “the amount of debt related to operating leases based on a multiple of the most recent year’s rent expense.” If lenders base the interest rates they charge borrowers on credit ratings and if those credit ratings already adjust for operating leases, then the higher interest costs predicted by the CA Study under the “lender reaction” scenario should not occur. I am not suggesting that the adjustments made by credit rating agencies will exactly equal the increased assets and liabilities that lessees would report if the FASB implements its proposed guidance. I expect the analysts’ adjustments to deviate from what the lessee would compute as its liability on operating leases. But the adjustments will be close enough that adoption of the FASB’s proposal should not lead to systematic declines in the credit ratings of lessees, and the absence of the ratings downgrades reduces the likelihood of increased borrowing costs predicted by the CA Study.

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5 I refer to the 2006 document because it is readily accessible on the internet. A comment letter from Standard & Poor’s Rating Services to the FASB dated September 16, 2013 confirms that its analysts adjust ratios for off-balance sheet leases.
6 Moody’s Approach to Global Standard Adjustments in the Analysis of Financial Statements for Non-Financial Corporations – Part I. February, 2006. Moody’s explains that applying a multiple times rent expense simplifies their computations. A footnote in the Moody’s document clarifies that the present value of operating lease payments serves as a floor in their computations. For more information regarding the origin of the multiple approach, see Gene Imhoff, Robert Lipe, and Dave Wright, “The Effects of Recognition Versus Disclosure on Shareholder Risk and Executive Compensation.” Journal of Accounting, Auditing, and Finance, Fall 1993, pp. 335 – 368.
Many lessees obtain debt financing from banks rather than the public debt market. Do banks make adjustments similar to those found in the credit rating manuals of Standard & Poor’s and Moody’s? A recent paper by Altamuro, Johnston, Pandit, and Zhang examines interest rates charged in 5,812 commercial loans over the period 2000 – 2009. The paper tests several hypotheses regarding whether interest rates charged to borrowers are better explained by financial ratios that are adjusted for off-balance sheet leases. In some tables, Altamuro et al. analyze borrowers with credit ratings from either Moody’s or Standard & Poor’s separately from borrowers that are not rated. For the rated borrowers, interest rates charged on their loans are significantly related to their credit rating, and once the rating is included in the regression model, the adjustment for off-balance sheet leases is no longer significant.

The result suggests that banks set interest rates based in part on credit ratings when the ratings are available, and since the credit rating agencies adjust for off-balance sheet leases, the interest rates in those loans will not change if the FASB adopts its proposed lease accounting. For borrowers that are not rated by credit rating agencies, Altamuro et al. find that adjusting financial ratios for off-balance sheet leases better explains interest rates, although this finding is weaker for loans issued by smaller lenders. The authors summarize their findings as “These results support our hypothesis that sophisticated credit market participants incorporate information about off-balance sheet operating leases into their credit assessments and that creditors do so either directly or indirectly via credit ratings” (p. 553). This further contradicts the underlying premise in the CA Study that creditors will mechanically increase interest rates upon adoption of the FASB’s lease accounting proposal.8

To summarize, academic accounting texts, public statements by credit rating agencies, and large sample empirical evidence of interest rates in commercial loans combine to provide compelling evidence that lenders and their analysts already make approximations of the impact of treating operating leases as if they were capitalized. In other words, the credit assessments made by lenders appear to already count the obligations under off-balance sheet leases as liabilities. How does this finding affect the negative economic outcomes predicted by the CA Study in the “lender reaction” scenario?

The CA Study predictions depend on the assumptions that (i) interest rates currently being charged to lessees ignore the liabilities and assets implicit in the off-balance sheet leases and (ii) lenders will mechanically increase interest rates as a function of the increased assets and liabilities that are recorded under the FASB’s proposed lease accounting. Assumption (i) is contradicted by the evidence, which means interest rates on lessees’ loans will likely remain mostly unchanged by a mandate to capitalize all leases. If interest rates are unchanged in the “lender reaction” scenario, then the methodology in the CA Study predicts zero impact from the adoption of the FASB’s proposal. Thus a problem with their assumptions causes the predicted effects on jobs and GDP in the CA Study to be significantly overstated.

2.c. Other Potential Consequences of the Change in Accounting by Lessees

The notion that a mandated change in an accounting method will have some economic effects on companies and/or financial statement users is well accepted. The academic accounting literature coined the term “economic consequences” to capture these effects. As described in Watts and Zimmerman,9 companies arrange contracts in the most efficient way possible, and in many cases, contracts are based on accounting numbers. When a company faces a mandatory change in accounting principles, the existing contracts may no longer be optimal. Watts and Zimmerman discuss research regarding actions that companies may take to minimize the economic consequences of the mandated standard.

Note that none of the literature asserts that users will be fooled into believing that newly recognized assets and liabilities represent shifts in the fundamentals of the company. Debiting assets and crediting liabilities do not change the company’s existing lease contracts, its customers or its employees – the economic fundamentals are largely the same before and after the accounting change. Thus the economic consequences posited in the accounting literature are smaller than the effects that would occur if people mechanically responded to the mandated accounting change.

8 Altamuro et al. slice their data into various subsamples. In some subsamples, the adjustment for off-balance sheet leases significantly increases the explanatory power of the regression but not in other subsamples. These subsample analyses suggest lenders are sophisticated users of financial statement footnotes; they do not respond mechanically to the reported assets and liabilities in the manner assumed by the CA Study.
One potential effect is that the change in accounting methods could cause the lessee to be in technical default of debt covenants tied to accounting numbers. For example, if a lender could call its loan if the lessee’s liability-to-asset ratio exceeds 70% and if the capitalization of previously off-balance sheet lessees increases the ratio from 65% to 75%, the lessee/borrower would be in default; the literature labels this a “technical default” of contractual terms as opposed to a default caused by missing an interest or principal payment.

Some lessees may violate debt covenants if they were to capitalize all of their leases. However, research concludes that violations caused by mandated accounting changes are rare. For example, in their sample of debt agreements, Beatty, Ramesh, and Weber (p. 212) find that 156 of 206 agreements (more than 75%) are written so that the covenants exclude the effects of mandated accounting changes. This is consistent with Smith (pp. 292-293) who states,

“...available evidence suggests that technical defaults are generally triggered by the deterioration of firms’ operating performance rather than by mandated changes in GAAP. Beneish and Press (1993) report no technical defaults triggered by mandated accounting changes, and Frost and Bernard (1989) report only two. Several factors are potentially important in explaining this low frequency. First, as El-Gazzar (1993) emphasizes, firms can alleviate the effects of mandated accounting changes by renegotiating potentially binding agreements and by retiring debt. Second, changing GAAP is frequently a lengthy process. The longer the time from an initial discussion memorandum to final implementation, the more time firms have to adjust and the less likely the changes will result in technical default. Third, when changes in GAAP do cause a material change in a covenant-imposed constraint, private lenders have strong incentives to renegotiate debt contracts. For the lender, maintaining a reputation for eschewing opportunistic behavior is important in attracting future borrowers and, thus, is a valuable asset.”

In addition to the general observations in Smith, a change in lease accounting is less likely to cause technical violations of covenants than changes in other accounting methods because many covenants treat off-balance sheet leases as debt. For example, Target Corporation’s five-year credit agreement dated October 14, 2011 defines “total finance liabilities” as debt plus 8 times rent expense, and “debt” includes capital lease obligations. Thus, requiring Target to capitalize its operating leases should have little effect on its debt covenant.

Given the conclusion in subsection 2.b that many lenders view operating lease commitments as debt, we should not be surprised that debt covenants intended to assess whether current borrowing exceeds some threshold consider operating lease commitments to be the same as capital lease commitments. In conclusion, the FASB’s proposed lease accounting is unlikely to cause significant negative economic consequences on lessees due to debt covenant violations.

One “industry” I expect to be adversely affected by the proposed leasing standard is business consultants who specialize in financial engineering. These consultants sell strategies to companies for keeping debt off balance sheet.

Operating lease accounting has provided an easy “product” for these consultants to sell. For example, a large financial services entity offered several services on its website to help companies “improve” their balance sheet by using leasing arrangements. The techniques included synthetic leases and sales and leasebacks where the leaseback would be treated as an operating lease. The proposed lease standard would require future rental payments for all leases longer than one year to be reported as liabilities, which renders leasing-based financial engineering products inoperable. I am sure the off-balance-sheet consulting industry will rebound and find other schemes to sell to companies. But one of their go-to products will no longer be available.

The discussion in this subsection does not directly relate to the numerical analysis in the CA Study. Instead this subsection relates to other sorts of effects that might occur if the FASB changes the accounting for leases. The change in mandated accounting methods will undoubtedly have some economic consequences. However, one commonly referenced consequence – losses associated with technical defaults of debt covenants – is likely to be modest given that most lenders already appear to view off-balance sheet leases as providing assets and imposing liabilities. Predicting a precise level of the consequences would be difficult, but nothing in

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11More recently, a working paper by Hans B. Christensen and Valeri Nikolaev (“Contracting on Mandatory Changes to GAAP: New Practice and its Determinants,” University of Chicago, September 2009) suggests that covenants are tending to include an option to “freeze” GAAP at a point in time during the term of the loan rather than “freeze” GAAP at the origination of the loan. But consistent with Beatty, Ramesh, and Weber, only about 25% of the covenants in their sample require the use of current GAAP including any mandatory accounting changes.

the literature suggests that the impact will be as large as those predicted by the CA Study. The next section uses a different approach to validate the predictions in the CA Study – I apply their analysis to a historical change in accounting that affected reported leverage for many companies.

3. Applying the CA Study Numerical Analysis to a Prior Mandated Accounting Change

Section 2 evaluates the numerical analysis in the CA Study by assessing whether one of its underlying assumptions is reasonable given how financial statement users currently evaluate the leverage of companies with operating leases. A different way to evaluate a model of economic behavior is to apply it to test cases where the outcomes are known. The case analysis provides feedback on the ability of the model to correctly predict economic outcomes. If the model produces unreasonable predictions in other settings, then either the model does not contain the right variables or the model applies the wrong parameters to the right variables. In this section, I apply the model in the CA Study to the adoption of an accounting change that required accruing liabilities for postretirement benefits other than pensions by AT&T and Chrysler in the early 1990s.

In order to give the CA Study a fair test, I want to examine a past mandatory accounting change that fits their assumptions. First, because their study focuses on the negative consequences of adding liabilities to the balance sheet, the prior mandated standard should significantly increase the net liabilities of the companies analyzed. In addition, the CA Study assumes financial statement users only consider a future commitment to be a liability when it is recorded as such, so the CA Study’s analysis is more likely to apply in situations where financial statement users were not adjusting reported liabilities to include the commitments prior to the mandated accounting change. The FASB’s adoption of Statement of Financial Accounting Standards No. 106 (hereafter, SFAS 106) in December of 1990 fits these criteria.

SFAS 106, Employers’ Accounting for Postretirement Benefits Other than Pensions, changed the accounting for benefits such as health insurance, life insurance, and other services that a company pays on behalf of its retirees who meet certain conditions. I will refer to these benefit plans using their common accounting label of “OPEBs,” short for “other postretirement benefits.” Prior to SFAS 106, U.S. companies accounted for the majority of OPEBs using a “pay-as-you-go” approach, meaning the annual expense equaled the cash paid on behalf of current retirees, and companies did not recognize any expense or liability for current employees who would retire in the future. In SFAS 106, the FASB mandated that companies must change from this cash basis method to an accrual method that records estimated expenses and liabilities as employees work. In each year that a covered employee works, the company recognizes a portion of its expected obligation to the employee as an expense, with the offsetting credit increasing the company’s recognized OPEB liability. The recognized liability is subsequently reduced when the company sets aside cash to pay for the benefits.

SFAS 106 led to large increases in liabilities for companies with large work forces. In addition, few companies had set aside any cash in trust funds to pay their future OPEB obligations, so unlike leasing, most companies did not have any assets to record at the time they adopted SFAS 106 (other than deferred income tax assets). Disclosures about OPEB plans prior to SFAS 106 were minimal; in particular the future expected payments to retirees were not disclosed. Unlike leasing, I am not aware of any textbook demonstrating how to adjust for unrecognized OPEB commitments prior to adoption of SFAS 106. If the CA Study’s assumptions about how borrowers and/ or lenders respond to mandated accounting standards are to hold, the case of OPEBs seems to be a likely candidate.

AT&T and Chrysler provide interesting test cases. First, the additional liabilities recorded when they initially adopted SFAS 106 were more than 10% of reported assets. Second, the AT&T situation mimics the “lender reaction” scenario whereas Chrysler mimics the “borrower reaction” scenario, and thus I am able to evaluate both of the CA Study’s scenarios with these two companies. Third, old annual reports are accessible for these two companies as the adoption of SFAS 106 predates the availability of 10-Ks via the SEC’s Edgar system. Finally, neither company experienced large acquisitions or divestitures during the years that I examine, which simplifies the analysis.
AT&T:

AT&T adopted SFAS 106 as of January 1, 1993 by recording its entire OPEB transition liability as a cumulative effect of accounting change in the income statement. At adoption, AT&T recorded additional OPEB liabilities of $11,317 million and deferred income tax assets of $4,294 million. \(^1\) Under the “lender reaction” scenario, the numerical predictions in the CA Study are based on the increase in the liability-to-asset ratio due to the mandated accounting change. For AT&T, I take the assets and liabilities that are reported on December 31, 1992 and adjust these for the additional liabilities and assets recorded when SFAS 106 is adopted on January 1, 1993.

The liability-to-asset ratio increases from 66.12% to 79.91% due to the adoption of SFAS 106. \(^4\) The CA Study multiplies the increase in the leverage ratio by a regression coefficient to predict how interest rates will increase due to the added leverage. Note that AT&T’s effective interest rate is about 7.6% in 1992, as computed in the table to the right. For AT&T, the methods used by the CA Study predict the interest rate should increase from 7.6% to 110.6%.

An alternative is to compute the change in AT&T’s liability-to-asset ratio using amounts reported in the 1993 annual report minus the same ratio using 1992 reported amounts; this computation incorporates any reduction in liabilities or increases in assets during 1993 that would offset the leverage effect of adopting SFAS 106. In that case, the increase in the liability-to-asset ratio = \(0.7625 - 0.6612 = 0.1013\). Multiplying by the regression coefficient yields 0.76, implying AT&T’s interest rate should increase by a factor of 10 from 7.6% to 83.3%. This confirms my earlier point that if mandating the recognition of additional liabilities can lead to increased interest costs, then the adoption of SFAS 106 should be expected to send interest rates through the roof for mature companies with large workforces. The table below reports effective interest rates for AT&T as well as its liability-to-asset ratios for 1992 to 1995:

<table>
<thead>
<tr>
<th>Year</th>
<th>Interest expense reported as such in the income statement</th>
<th>Interest expense included in the cost of financial services &amp; leasing</th>
<th>Interest capitalized</th>
<th>Total interest incurred (A)</th>
<th>Beginning balance in short-term plus long-term debt</th>
<th>Ending balance in short-term plus long-term debt</th>
<th>Average balance of debt for the year (B)</th>
<th>Effective interest rate = A ÷ B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>$663</td>
<td>$485</td>
<td>$62</td>
<td>$1,210</td>
<td>$15,537</td>
<td>$16,204</td>
<td>$15,871</td>
<td>7.62%</td>
</tr>
<tr>
<td>1993</td>
<td>$566</td>
<td>$506</td>
<td>$72</td>
<td>$1,144</td>
<td>$16,204</td>
<td>$17,716</td>
<td>$16,960</td>
<td>6.75%</td>
</tr>
<tr>
<td>1994</td>
<td>$748</td>
<td>$725</td>
<td>$47</td>
<td>$1,520</td>
<td>$22,865(^{14})</td>
<td>$25,024</td>
<td>$23,945</td>
<td>6.35%</td>
</tr>
<tr>
<td>1995</td>
<td>$738</td>
<td>$1,049</td>
<td>$121</td>
<td>$1,908</td>
<td>$25,024</td>
<td>$28,224</td>
<td>$26,624</td>
<td>7.17%</td>
</tr>
</tbody>
</table>

\(^{13}\)The information in this paragraph comes from the financial statements in the American Telephone and Telegraph Company 1993 Annual Report and in particular from note 2 which details the adoption of SFAS 106. Note that AT&T chose to recognize the entire obligation upon adoption via a “cumulative catch-up” of $7.02 billion in the income statement. The company could have phased in this transition amount over 20 years.

\(^{14}\)By comparison, the numerical analysis of the lender reaction scenario in the CA Study is based on an increase in the liability-to-asset ratio from 83.05% to 83.21%. Their ratio is based on the total assets and total liabilities for all publicly traded companies, and thus it represents the weighted average of individual company ratios.

\(^{15}\)AT&T merged with the much smaller McCaw Cellular in 1994. The beginning balance of debt in 1994 comes from the 1993 comparative data reported in AT&T’s 1994 annual report rather than the amounts reported in 1993. Because the merger was treated as a pooling of interests, this effectively removes the effect of the merger.
Instead of increasing by a factor of 10, AT&T’s effective interest rates after the adoption of SFAS 106 ranged from 6.75% to 7.17%, all of which are lower than the 7.6% prior to the adoption of SFAS 106. Note that the decline in interest rates cannot be explained by AT&T taking actions to reduce its leverage (i.e., the borrower reaction scenario in the CA Study) because AT&T’s liability-to-asset ratio remained at 76% or greater in 1994 and 1995. I conclude that lenders did not react to the increase in reported leverage in the manner predicted by the CA Study. Indeed, the adoption seems to have been a non-event for AT&T’s cost of borrowing.

Chrysler:

Chrysler recognized an OPEB liability of $7.44 billion from adopting SFAS 106. Chrysler’s reported liabilities at the end of 1993 were 27.5% higher because of its use of accrual accounting for OPEBs. The 1993 OPEB liability represented 18.2% of reported assets (my computations are detailed in the appendix). Clearly, the change in method had a big effect on the liability-to-asset ratio. What does the CA Study predict for capital expenditures or the cost of borrowing in response to these additional liabilities?

Unlike AT&T, Chrysler’s liability-to-asset ratio does not increase after adopting SFAS 106. In 1992, just prior to adoption, the liability-to-asset ratio is 81.46%. The ratio jumped to 84.4% in 1993, but then declined to levels below the 1992 amount in 1994 to 1997. This pattern seems consistent with the borrower reaction scenario in the CA Study (they call it the “worst case scenario”). The scenario posits that the borrower can avoid increased interest rates by reducing its non-OPEB debt so that its liability-to-asset ratio remains at the same level as before the mandated accounting change. The negative impacts predicted by the CA Study in this scenario occur because the company pays down its existing debt, it must restrict capital expenditures and growth.

Under the borrower reaction scenario, the CA Study predicts that Chrysler must curtail its capital expenditures. The figure below plots Chrysler’s capital expenditures reported in its statement of cash flows.

I placed a vertical line between 1992 and 1993 because SFAS 106 was adopted as of January 1, 1993. The reductions in future spending on productive activities predicted by the CA Study did not materialize for Chrysler. Indeed, another figure depicting income from continuing operations before the effects of accounting changes and extraordinary items (in millions of dollars) shows marked improvement subsequent to 1992, with each year 1993 to 1997 showing higher earnings than any of the years 1988 to 1992. The negative effects predicted by the CA Study due to Chrysler reducing its liability-to-asset ratio after adopting SFAS 106 did not occur.

The information in this paragraph comes from the financial statements in the Chrysler Corporation 1993 Annual Report and in particular from note 12, which details the adoption of SFAS 106. Note that Chrysler chose to recognize the entire obligation upon adoption via a “cumulative catch-up” of $4.68 billion in the income statement. The company could have phased in this transition amount over 20 years.

The appendix reports that Chrysler’s effective interest rates decline subsequent to the adoption of SFAS 106. Thus the addition of significant liabilities does not increase the interest rates on the company’s debt, although to be fair, the model underlying the CA Study would not predict an increase in interest rates in this case because Chrysler’s average liability-to-asset ratio declines from the 1988-1992 period to the 1993-1997 period.
Before leaving the example of OPEBs, note that various people predicted dire consequences for specific companies and the U.S. economy in general if the FASB mandated the accrual of OPEB liabilities. In particular, R.S. Miller, Jr., the then Chief Financial Officer of Chrysler, stated at a public hearing on November 3, 1989, “This isn’t just a technical adjustment to our statements. This is accounting Armageddon.” Mr. Miller mentioned that if the standard was implemented, the U.S. would experience negative consequences such as increased inflation and reductions in U.S. investment and employment.

While it is understandable for CFOs to be worried about how financial statement users will respond to mandated accounting changes, after the fact, adopting accrual accounting for OPEB liabilities did not appear to produce any significant negative economic consequences for Chrysler. Indeed, I spoke with some top corporate accounting officers at conferences before and then after the FASB promulgated SFAS 106; in advance of the standard, all of the comments were harshly critical, whereas after the fact, the same people stated that SFAS 106 helped them to see the real costs of the promises they had been making, which helped the managers make better decisions.

Experiences such as these lead me to conclude that changing a mandated accounting standard cannot devastate an economy or an industry, nor can it save an industry that is in decline. Financial statement users do not respond to mandated accounting changes as if the changes reflect shifts in the fundamental economics of the reporting entity. On the other hand, improving accounting standards can lead to better economic decisions, and those improved decisions usually help the economy, although quantifying this effect is incredibly difficult.

What does this all mean for the model in the \textit{CA Study}? The model produces unrealistically large predicted effects in the case of the adoption of SFAS 106 for AT&T and Chrysler. Also, the actual outcomes for these companies are in the opposite direction of the predicted effects. I am not suggesting that the results of the case analyses prove that U.S. companies did not feel some effect from adopting accrual accounting for OPEB liabilities. But the case analysis is instructive about the specification of the \textit{CA Study}. If one believes the effects of a mandated accounting change can be adequately predicted based on how the new standard affects the liability-to-asset ratio, then the specification in the \textit{CA Study} is overly sensitive to changes in this ratio. A 10-percentage point increase in the liability-to-asset ratio should not be expected to cause a 10-fold increase in interest rates. If the model in the \textit{CA Study} produces excessive predictions in the case of OPEB liabilities, then it stands to reason that the predictions of the model are similarly overstated in the case of leases.

Alternatively, the findings in my case analysis could indicate that predicting the economic effects of a mandated change in accounting principles requires consideration of more than just the liability-to-asset ratio. As discussed in section 2.c, the academic literature predicts that the economic consequences of a standard will reflect the costs to the company of complying with the standard and modifying its contracts in advance of the effective date of the change. These costs are unlikely to be proportional to the change in the liability-to-asset ratio, and that could explain the poor ability of the \textit{CA Study} to predict the effects of adopting SFAS 106.

The other benefit of considering SFAS 106 is the reality check that it provides — the increases in the liability-to-asset ratios when companies adopted accrual accounting for OPEB liabilities did not ruin the companies nor devastate the U.S. economy.\footnote{Growth in U.S. gross domestic product deflated by the CPI ranged from -0.92\% to 3.57\% in 1988 to 1991. For 1992 to 1996, growth ranged from 1.97\% to 3.60\%.} Recall that capitalizing leases adds approximately equal amounts of assets and liabilities to a company’s balance sheet, whereas adopting accrual accounting for OPEB adds liabilities but no assets (other than deferred income tax assets). As a result, the leverage effect is much greater when an additional dollar of OPEB liability is recognized versus when an additional dollar of lease liability is recognized. It is counterintuitive to expect that adopting the FASB’s proposed lease accounting will have a major effect on jobs and GDP given the experience of adopting accrual accounting for OPEBs.
4. Other Issues Concerning the CA Study

This section raises some additional points regarding the CA Study.

A. In addition to the questionable assumption and flawed specification discussed in sections 2 and 3, the predictions of the CA Study are overstated due to a failure to discount future lease cash flows for the time value of money. Appendix A of the CA Study reports detailed computations underlying its predictions. Because the FASB’s proposed lease accounting would initially recognize assets and liabilities equal to the discounted value of future minimum lease payments, the first step in the CA Study is to add the discounted value of operating lease commitments to the assets and liabilities of public companies. Instead of computing the discounted value of operating lease commitments themselves, the authors rely on an estimate from an SEC study of off-balance sheet activities. However, page 64 of the SEC study states that its numbers represent undiscounted cash flows. If one assumes a 10-year lease with an interest rate of 6% and equal payments, the undiscounted cash flow amount overstates the discounted amount by about 26%. Thus the failure to discount lease commitments overstates the numerical inputs to their model, which overstates the CA Study’s predicted job losses and reductions in GDP.

B. Page 21 of the CA Study mentions “Earnings volatility would result from accelerated interest and amortization in early years of a lease and reduced income statement impact in later years.” The current proposal from the FASB allows for the expenses from leasing to be recognized on a straight-line basis for types of leases meeting certain criteria, and my understanding is that the real estate leases like those that concern the authors of the CA Study would be likely to meet the criteria for straight-line expensing. While I personally do not see the need to straight-line the expenses for any capital leases, the proposed approach means that reported rental expenses are unlikely to change for leases of real estate, and thus the CA Study’s concern about income volatility is likely misplaced.

C. In its “borrower reaction” scenario, the CA Study treats cash paid to reduce debt as lost wealth to society—it seems as if the money vanishes into the mattresses of the lenders. However, bondholders and lenders who suddenly receive cash prior to maturity will want to invest that money somewhere else. When they lend these funds to other companies, the new borrowers will increase their capital expenditures, leading to higher output, employment, etc. While sections 2 and 3 raise serious doubts as to whether capital expenditures and/or debt will be reduced due to adoption of the leasing proposal, even if one grants that this might happen, the predicted contraction of the economy seems unlikely.

D. Table 4.1 of the CA Study contains some inaccuracies about the accounting effects of the proposed lease accounting. For example, earnings before interest and taxes (EBIT) will not decrease. The current FASB proposal is that lessees either (a) continue to report rent expense on a straight-line basis or (b) remove rent expense from the income statement and instead report interest expense and amortization of the lease asset. For lessees that report under approach (b), EBIT increases because rent expense is added back to earnings but only amortization expense is subtracted. For lessees that report under approach (a), EBIT will not change (note that most real estate leases are likely to use approach (a)). The effect on EBITDA when using approach (b) is even more positive, as rent expense is added back to earnings and neither interest nor amortization are subtracted in computing EBITDA. The basic point is that the financial effects of the proposed lease accounting on key financial metrics is not universally negative—some of the numbers will look better to financial statement users. If one was to create a model that forecasted the change in jobs and GDP based on the effect of the FASB’s proposed lease accounting on lessees’ EBITDA values, that model would predict either no change (approach (a)) or an increase in jobs and GDP (approach (b)).

20Ten equal payments of $1 each at the end of the year have an undiscounted value of $10 but a present value of $7.4, so that the present value is only 74% of the undiscounted value.
Appendix – Chrysler’s Adoption of SFAS 106

This appendix contains the background data and computations related to my analysis of Chrysler Corporation’s adoption of SFAS 106. All dollar amounts in millions:

<table>
<thead>
<tr>
<th></th>
<th>Chrysler 1993 reported total liabilities</th>
<th>$36,994</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>OPEB liability reported in the 1993 balance sheet</td>
<td>$7,985</td>
</tr>
<tr>
<td>B</td>
<td>Chrysler non-OPEB liabilities = A – B</td>
<td>$29,009</td>
</tr>
<tr>
<td>C</td>
<td>Increase in Chrysler 1993 liabilities due to OPEBs = B ÷ C</td>
<td>27.5%</td>
</tr>
</tbody>
</table>

Ratio of OPEB liability to reported assets = $7,985 ÷ $43,830 = 18.2%.

Data underlying the graphs in the text:

<table>
<thead>
<tr>
<th>Year</th>
<th>CAPX</th>
<th>Inc CO</th>
<th>Interest</th>
<th>Liab/Asset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>$1,631</td>
<td>$1,050</td>
<td>84.39%</td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>$1,636</td>
<td>$315</td>
<td>10.40% 85.09%</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>$1,794</td>
<td>$68</td>
<td>9.75% 84.62%</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>$2,261</td>
<td>($538)</td>
<td>8.83% 85.64%</td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>$2,289</td>
<td>$505</td>
<td>8.03% 81.46%</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>$2,995</td>
<td>$2,415</td>
<td>8.18% 84.40%</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>$3,843</td>
<td>$3,713</td>
<td>7.63% 78.41%</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>$4,109</td>
<td>$2,121</td>
<td>7.29% 79.61%</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>$4,635</td>
<td>$3,720</td>
<td>7.30% 79.41%</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>$5,122</td>
<td>$2,805</td>
<td>6.97% 81.19%</td>
<td></td>
</tr>
</tbody>
</table>

CAPX = the sum of “expenditures for property and equipment” and “expenditures for special tools” from the statements of cash flows reported in each year’s annual report.

Inc CO = income from continuing operations before the effects of accounting changes and extraordinary items from the statements of earnings reported in each year’s annual report.

Interest = the effective interest rate = reported interest expense/average debt. Average debt = beginning of year plus end of year debt and borrowings (short-term plus long-term), divided by 2.

Liab/Asset = total liabilities divided by total assets.

Data are taken from each year’s annual report.