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## **CHANGE IN REPORTING THE FUNDED STATUS OF PENSIONS: IMPACT ON DEBT-ASSET AND DEBT-EQUITY RATIOS**

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### **ABSTRACT**

*In September 2006, the Financial Accounting Standards Board issued a new standard for pensions, referred to when issued as Statement of Financial Accounting Standards No. 158 “Employers’ Accounting for Defined Benefit Pension and Other Postretirement Plans” (FASB 2006) and currently referred to as Accounting Standards Codification (ASC) 715 Compensation—Retirement Benefits, 30 Defined Benefit Plans—Pension, 25 Recognition. The objective of the new standard is to increase understandability of financial statements and improve timeliness and representational faithfulness relating to the funded status of defined benefit pension plans. The results presented in this study demonstrate the impact the new standard has on debt-asset ratios and on debt-equity ratios. Accordingly, the new accounting standard causes some firms to experience a material deterioration in their financial position based on the debt-asset and debt-equity ratios. The new standard provides a more conservative and accurate reporting of the funded status of defined benefit pension plans and therefore more useful information to investors and creditors.*

### **INTRODUCTION**

In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 158 (FAS 158) entitled “Employers’ Accounting for Defined Benefit Pension and Other Postretirement Plans.” This accounting rule was developed as part of the effort by the FASB to converge United States (U.S.) accounting standards with international accounting standards. Reporting the funded status of pension plans in the U.S. now conforms to international accounting standards. Also, since the issuance of the new standard, the authoritative source for all accounting standards is the Accounting Standards Codification (ASC). Accounting rules for pensions are provided in ASC 715 Compensation—Retirement Benefits, 30 Defined Benefit Plans—Pension, 25 Recognition (here-in for convenience “ASC 715.”)

The objective of ASC 715 is to more fully recognize an entity’s pension obligation, increase understandability of financial statements and improve timeliness and representational faithfulness relating to defined benefit pension plans.

To achieve these objectives, the new standard requires 1) the recognition of the funded status of a benefit plan (the difference between the projected benefits obligation (PBO) and the

fair value of plan assets) in an entity's statement of financial position, 2) recognition in stockholders' equity of actuarial gains or losses and prior service costs that have not yet been recognized as net periodic benefit cost, 3) measurement of defined benefit plan assets and obligations as of the date of the employer's fiscal year-end, and 4) additional footnote disclosures concerning certain effects on net periodic benefit cost for the next fiscal year arising from delayed recognition of gains or losses, prior service costs or credit, and transition assets or obligations.

The effective date of the new standard was for fiscal years ending after December 15, 2006. Exhibit 1 shows the ongoing pension accounting project by the FASB.

The primary focus of ASC 715 is measurement of the funded status of defined benefit pension plans on corporate balance sheets. The new standard clearly articulates how it differs from previous accounting standards. "Prior standards did not require an employer to report in its statement of financial position the overfunded or underfunded status of a defined benefit postretirement plan." (FASB 2006). ASC 715 requires that the pension related liability (or asset) recognized in the body of the balance sheet equal the difference between the fair value of the pension plan assets and the PBO. Prior to ASC 715, firms were allowed to determine total pension-related liability using the difference between plan assets at fair value less the accumulated benefit obligation (ABO). ABO is an amount smaller than PBO since it uses current employee salaries rather than projected salaries, as is the case with PBO.

To some extent, the standard is "merely" moving the reporting of pension items from the footnotes to the balance sheet. Arguably, investors and analysts have already impounded the information content of these items into their pricing of a company's stock and thus, the effect on a company's cost of capital could be considered minimal. However, academic studies have found evidence that presenting information in the body of the financial statements is more useful than reporting it only in the footnotes (AAA FASC 2007).

The usefulness of pension reporting and disclosure has been the subject of numerous previous studies for more than two decades. Early studies by Landsman (1986), Barth (1991), Barth et al. (1992) and Amir (1996) found evidence to suggest that investors use pension or postretirement benefit information in valuing the equity or share prices of firms. In 2003 Coronado and Sharpe found that the market will value the components of pension expense instead of the funded status of a pension plan if there is doubt or ambiguity in regard to the economic status of the pension obligation. A study by Picconi (2006) explored whether investors and analysts fully impound information contained in pension footnotes and concluded that pension accounting was not fully used by investors and analysts.

One area with a measurable impact on ASC 715 is the debt-asset and debt-equity ratios based on reported amounts of assets, liabilities and stockholders' equity on entities' balance sheets. The funded status reported on the balance sheet as a result of ASC 715 will be less than under the predecessor standard, when accounting for pensions adhered to FAS 87, Employers' Accounting for Pensions (FASB 1985). A larger pension obligation, PBO rather than ABO, is used as an offset against pension plan assets under ASC 715.

**Exhibit 1**  
**FASB's Past Actions and Future Plans on Pensions**

<b>FAS 87 (1985):</b> Employers' Accounting for Pensions	Net periodic pension cost: service cost + interest cost - expected return + amortization of prior service cost + amortization of transition amount + amortization of unrecognized gain or loss. Required "minimum pension liability" as equal to <u>accumulated</u> benefit obligation less plan assets.
↓	↓
<b>FAS 88 (1985):</b> Employers' Accounting for Settlements and Curtailments of Defined Benefit Pension Plans and for Termination Benefits	Established standards for an employer's accounting for settlement of defined benefit pension obligations, for curtailment of a defined benefit pension plan, and for termination benefits. This Statement is closely related to FASB Statement No. 87 and should be considered in that context.
↓	↓
<b>FAS 132 and 132r (1998, 2003):</b> Employers' Disclosures about Pensions and Other Postretirement Benefits—an amendment of FASB Statements No. 87, 88, and 106	Footnote disclosures specified. Reporting under-funded and over-funded amounts separately no longer required.
↓	↓
<b>FAS 158 (2006):</b> Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans—an amendment of FASB Statements No. 87, 88, 106, and 132(R)	Requires a minimum pension liability equal to the difference between projected benefit obligation and the fair value of the pension plan assets, likely increasing total liabilities.
↓	↓
<b>Future Financial Accounting Standards:</b>	<ul style="list-style-type: none"> <li>• Display of items that affect cost of post-retirement benefits should be displayed in earnings or Other Comprehensive Income.</li> <li>• How projected benefit obligation is measured, including measurement assumptions such as the settlement rate.</li> <li>• Trust funds for both pensions and OPEB might be reported as a single trust fund.</li> <li>• Convergence with international accounting standards (FASB 2010).</li> </ul>

There is little dispute that PBO is larger than ABO because PBO is based on expected higher future salary levels, where ABO is based on only the current salary levels. The resulting effect of using PBO is to increase the pension-related liability of underfunded plans and reduce the size of an asset of overfunded pension plans. A question worth exploring is the magnitude of the impact on debt-asset and debt-equity ratios. The objective of this article is to examine the impact of using PBO to measure the funded status, as required by ASC 715, on the debt-asset and debt-equity ratios of firms with defined benefit pension plans.

## MEASURING THE IMPACT

The use of PBO to measure the funded status became effective for fiscal years ending after December 15, 2006. However, our analysis will use fiscal 2005 as a base upon which to measure the impact of using PBO. The reason for using fiscal 2005, the year before the accounting change, is that while perhaps many firms would change their accounting for pensions in 2006 to be in conformity with ASC 715, it is usually the case that some firms, particularly smaller firms, delay adoption of a new accounting standard, especially if it will have a significant impact on the firm. It is impractical with a large sample of firms to identify which firms in fiscal 2006 have made the transition from the old standard to the new standard, and which have not. Thus, using fiscal 2005 provides cleaner data upon which to perform an analysis.

So, it may be fiscal 2007 or even 2008 before it can be assumed that substantially all firms have made the transition to ASC 715. This would result in fiscal 2006 and 2007 consisting of a mixture of most firms reporting pension-related amounts in conformity with ASC 715, and some firms not yet in conformity with ASC 715.

Therefore, to avoid using a mix of firms that may have or have not adopted ASC 715, fiscal 2005 is used for analysis since it is the most recent year for which it can be reasonably assumed that all firms used the same accounting standard. Thus, the impact of ASC 715 will be analyzed comparing pre-ASC 715 fiscal 2005 data to what 2005 data would look like if ASC 715 had in fact been applied. Specifically, debt-asset and debt-equity ratios will be compared pre-ASC 715 and pro forma ASC 715.

Before examining the impact on debt-asset and debt-equity ratios by industry, a comparison of means statistical test is conducted on the pre- and post-ASC 715 ratios for the entire sample to determine if the difference in means is statistically significant. The mean debt-asset ratio pre-ASC 715 was 0.639 in absolute value and the post-ASC 715 mean was 0.654. The results show a significant difference (t value 21.49,  $p < .0001$ ). For debt-equity ratios, discussed in the next section, the mean debt-equity ratio pre-ASC 715 for the overall sample was 3.942 in absolute value, while the post-ASC 715 mean was 4.927, also statistically significant (t value 3.46,  $p < .0001$ ). The significant differences in the means of the total sample for both debt-asset and debt-equity ratios warrant additional analysis by industry.

**Exhibit 2**  
**Example of Balance Sheet Impact of ASC 715**

Large Public Corporation  
Condensed Balance Sheet 12/31/05  
(in millions, except share and per share data)

	<u>2005</u>	<u>Adjustment Due to ASC 715</u>	<u>Under ASC 715</u>
<b>Assets:</b>			
Total current assets	\$ 5,781		\$ 5,781
Property, plant and equipment, net	3,778		3,778
Goodwill	2,141		2,141
Other long-term assets	3,221		3,221
Total Assets	<u>\$ 14,921</u>		<u>\$ 14,921</u>
<b>Liabilities and Shareholders' Equity:</b>			
Total current liabilities	\$ 5,489		\$ 5,489
Long-term debt, net of current portion	2,764		2,764
<b>Pension and other postretirement liabilities</b>	<b>3,476</b>	<b>679</b>	<b>4,155</b>
Other long-term liabilities	1,225		1,225
Total liabilities	<u>12,954</u>		<u>13,633</u>
<b>Shareholders' Equity:</b>			
Common stock	978		978
Additional paid in capital	873		873
Retained earnings	6,402		6,402
<b>Accumulated other comprehensive loss</b>	<b>(467)</b>	<b>(679)</b>	<b>(1,146)</b>
Unvested stock	(6)		(6)
Treasury stock, at cost	(5,813)		(5,813)
Total shareholders' equity	<u>1,967</u>		<u>1,288</u>
Total Liabilities and Shareholders' Equity	<u>\$ 14,921</u>		<u>\$ 14,921</u>
<b>Debt/asset ratio</b>	<b>0.81</b>		<b>0.91</b>
<b>Debt/equity ratio</b>	<b>6.59</b>		<b>10.59</b>

**Impact on Debt-Asset Ratios**

To illustrate the impact on a single entity, Exhibit 2 presents a condensed balance sheet of a large publicly traded company for fiscal 2005. The middle column indicates the adjustment that the new standard would have had on fiscal 2005, an increase in liabilities and an equal decrease in stockholders' equity by way of a decrease to accumulated other comprehensive income, a subsection of stockholders' equity. Note that both the debt-asset and debt-equity ratios are adversely affected. Each firm would experience a similar impact if its projected benefit obligation exceeds the fair value of plan assets.

**Table 1**  
**Mean and Median of Debt/Asset Ratios Pre and Post ASC 715**

<u>SIC</u>	<u>Industry</u>	<u>n</u>	<u>Debt/Asset</u>		<u>Debt/Asset</u>	
			<u>Pre-ASC 715</u>	<u>Median</u>	<u>Post-ASC 715</u>	<u>Median</u>
01-09	Agriculture, Forestry, Fishing	4	0.47	0.54	0.47	0.54
10-14	Mining	42	0.54	0.54	0.55	0.55
15-17	Construction	4	0.63	0.64	0.65	0.65
20-39	Manufacturing	499	0.56	0.57	0.58	0.60
40-49	Transportation & Public Utilities	154	0.69	0.70	0.70	0.72
50-51	Wholesale Trade	27	0.58	0.59	0.59	0.62
52-59	Retail Trade	35	0.55	0.57	0.56	0.59
60-67	Finance, Insurance, Real Estate	223	0.85	0.90	0.85	0.91
70-89	Services	61	0.56	0.54	0.58	0.55
91-99	Public Administration	7	0.67	0.65	0.68	0.66
	Total Firms	<u>1056</u>				

Table 1 presents the mean and median of the debt-asset ratio before and after ASC 715 for 1,056 firms classified by industry code. For all tables shown in this study, any firms showing negative stockholders' equity either before or after implementation of the new accounting standard were eliminated since negative stockholders' equity would not provide meaningful debt-equity ratios. Therefore, all tables show the same number of firms, 1,056, all of which have experienced an increase in pension-related liabilities if ASC 715 had been applied. In eight of the ten industry classifications both the mean and median debt-asset ratios increase.

**Table 2**  
**Percentage Increase in Debt/Asset Ratio (amounts in percentages)**

<u>SIC</u>	<u>Industry</u>	<u>n</u>	<u>Mean</u>	<u>StdDev</u>	<u>Median</u>	<u>p25</u>	<u>p75</u>	<u>Min</u>	<u>Max</u>
01-09	Agriculture, Forestry, Fishing	4	0.62	0.52	0.57	0.20	1.04	0.08	1.25
10-14	Mining	42	1.38	1.42	0.86	0.41	1.87	0.02	7.09
15-17	Construction	4	3.47	2.53	3.02	1.54	5.39	1.02	6.80
20-39	Manufacturing	499	4.37	8.90	2.57	1.13	5.22	0.00	169.11
40-49	Transportation & Public Utilities	154	2.19	2.56	1.41	0.62	2.94	0.00	20.69
50-51	Wholesale Trade	27	3.08	3.88	1.29	0.53	4.10	0.02	14.96
52-59	Retail Trade	35	2.29	2.51	1.19	0.32	4.71	0.01	8.12
60-67	Finance, Insurance, Real Estate	223	0.62	2.34	0.22	0.09	0.42	0.00	31.63
70-89	Services	61	3.51	6.63	1.22	0.69	2.70	0.01	45.98
91-99	Public Administration	7	1.54	1.28	1.25	0.58	2.18	0.43	4.10
	Total Firms	<u>1,056</u>							

Table 1 also shows that the number of firms reporting defined benefit pensions is concentrated in Manufacturing, Transportation and Public Utilities, and Finance, Insurance, and Real Estate industries. The industry concentration is reflective of the tendency in older, established industries, especially those with unionized work forces, having defined benefit

pensions plans. One limitation of Table 1 is that it does not show how the increase may vary among the firms in each industry, an analysis beyond the purpose of this study.

Table 2 presents descriptive statistics for the percentage increase in debt-asset ratios. The minimum and maximum percentage increase in debt-asset ratios have limited meaning because they represent a single observation with a negligible numerator divided by a relatively large denominator or vice versa. The 25<sup>th</sup> and 75<sup>th</sup> percentiles, which are presented, provide more meaningful information since they reveal the quartiles of the percentage change in debt-asset ratios. In particular, the 75<sup>th</sup> percentile shows, for instance, that one fourth of the firms in Manufacturing (SIC 20-39), the largest industry represented, experience an increase in the debt-asset ratio of 5.22% or more when ASC 715 is applied. So, while not all firms experienced a dramatic percentage increase in the debt-asset ratio, those firms above the 75<sup>th</sup> percentile did experience an increase that does appear to be material.

**Table 3**  
**Mean and Median of Debt/Equity Ratios Pre and Post ASC 715**

<u>SIC</u>	<u>Industry</u>	<u>n</u>	<u>Debt/Equity</u>		<u>Debt/Equity</u>	
			<u>Pre-ASC 715</u>	<u>Median</u>	<u>Post-ASC 715</u>	<u>Median</u>
01-09	Agriculture, Forestry, Fishing	4	1.14	1.26	1.15	1.28
10-14	Mining	42	1.57	1.18	1.64	1.21
15-17	Construction	4	1.69	1.75	1.84	1.88
20-39	Manufacturing	499	2.29	1.31	3.39	1.48
40-49	Transportation & Public Utilities	154	3.52	2.34	5.52	2.52
50-51	Wholesale Trade	27	1.78	1.46	1.90	1.62
52-59	Retail Trade	35	1.62	1.33	1.71	1.42
60-67	Finance, Insurance, Real Estate	223	9.23	9.22	9.54	9.53
70-89	Services	61	3.35	1.18	5.60	1.23
91-99	Public Administration	7	4.32	1.85	4.72	1.93
	Total Firms	<u>1056</u>				

### Impact on Debt-Equity Ratios

The impact of ASC 715 on debt-equity ratios is more pronounced than the impact on debt-asset ratios because the transition to ASC 715 requires both an increase in total debt and an equal decrease in stockholders' equity. As mentioned previously, 1,056 firms are analyzed in Tables 3 and 4 due to elimination of firms reporting negative stockholders' equity since debt-equity ratios calculated based on negative stockholders' equity do not provide meaningful results. In the transition to ASC 715, total debt is increased and stockholders' equity is simultaneously decreased since PBO exceeds ABO, which was previously used to measure funded status. Table 3 shows a noticeable increase in debt-equity ratios as a result of applying ASC 715 across all industries.

A more meaningful insight into the increase in debt-equity ratios is provided by measuring the percentage change in the ratio, presented in Table 4. Again, the minimum and maximum



percentage increases in the debt-equity ratios have limited meaning because they represent a single observation with a negligible numerator divided by a relatively large denominator or vice versa. The 25<sup>th</sup> and 75<sup>th</sup> percentiles, which are presented, are more meaningful because they reveal the quartiles of the percentage change in debt-equity ratios. In particular, the 75<sup>th</sup> percentile shows, for instance, that one fourth of the firms in Manufacturing (SIC 20-39) experience a deterioration of a least 15.27% or more. Other industries showing double-digit increases in debt-equity ratios at the 75<sup>th</sup> percentile are Transportation and Public Utilities, Wholesale Trade, Construction, and Public Administration. Retail Trade and Services show percentage increases over 9%. Mining shows a 5% increase. What Table 4 shows is that if using an arbitrary materiality threshold of 5%, at least a fourth of the firms in eight of the ten industries will experience a material increase in their debt-equity ratio.

**Table 4**  
**Percentage Increase in Debt/Equity Ratio (amounts in percentages)**

<u>SIC</u>	<u>Industry</u>	<u>n</u>	<u>Mean</u>	<u>StdDev</u>	<u>Median</u>	<u>p25</u>	<u>p75</u>	<u>Min</u>	<u>Max</u>
01-09	Agriculture, Forestry, Fishing	4	1.19	0.88	1.19	0.53	1.85	0.15	2.23
10-14	Mining	42	3.37	3.07	2.24	1.06	5.55	0.03	11.02
15-17	Construction	4	9.54	6.40	8.77	4.59	14.48	2.97	17.63
20-39	Manufacturing	499	15.27	44.56	7.14	2.90	15.27	0.01	655.05
40-49	Transportation & Public Utilities	154	14.65	73.20	5.46	2.42	12.17	0.00	899.11
50-51	Wholesale Trade	27	7.56	9.15	3.86	1.35	13.38	0.06	40.58
52-59	Retail Trade	35	5.36	5.50	3.35	0.96	9.39	0.07	21.21
60-67	Finance, Insurance, Real Estate	223	3.29	4.53	1.95	0.85	4.01	0.00	46.16
70-89	Services	61	24.53	106.53	3.51	1.44	9.29	0.01	820.19
91-99	Public Administration	7	6.00	4.09	4.55	2.44	10.33	0.92	12.08
	Total Firms	<u>1,056</u>							

### SUMMARY

The results presented in this study demonstrate that ASC 715 likely had a material impact on debt-asset and debt-equity ratios, two widely followed financial statistics. The impact is most pronounced for debt-equity ratios. Accordingly, ASC 715 will likely cause some firms to experience a material deterioration in their financial position measured by the debt-asset and debt-equity ratios. However, ASC 715 provides a more conservative and accurate reporting of the funded status of defined benefit pension plans and therefore provides more useful information to investors and creditors. A likely outcome of the impact of ASC 715 is to encourage the trend of more entities to move away from defined benefit plans to defined contribution plans.

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