Improving Students' Understanding of the Importance of Economic Consequences in Standard Setting: A Computerized Spreadsheet Tool

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ABSTRACT. In developing and implementing new accounting standards, consideration of potential economic consequences is often an important factor. In several instances, political pressure brought to bear on the Financial Accounting Standards Board (FASB) has caused it to alter a proposed or enacted standard. Accordingly, both the academic and professional communities have challenged accounting educators to go beyond simply teaching the mechanics of accounting topics. In particular, the Accounting Education Change Commission (AECC) has encouraged a perspective focusing on the user of accounting information. This article presents a tool for financial accounting educators to demonstrate the economic consequences of adoption of accounting standards.

The Financial Accounting Standards Board (FASB) considers economic consequences when developing new accounting standards. Given the importance of economic consequences in the standard-setting process, it seems incumbent upon accounting instructors to incorporate the topic into the financial accounting curriculum. Our purpose in this article is to provide accounting instructors with an aid for teaching the impact of new accounting standards on financial statements and financial ratios and for generating discussion regarding the economic consequences associated with adopting such standards.

The Accounting Education Change Commission (AECC) has stressed the importance of a user perspective in the accounting classroom. The spreadsheet example and the discussion contained in this article provide a method for demonstrating the economic impact of adopting accounting standards on the financial information used by managers, creditors, and investors. The spreadsheet can serve as a blueprint for instructors presenting this material to accounting students.

Economic Consequences

Economic consequences are the actual and/or perceived impact of accounting standards on the economic position of the companies faced with adopting them. Instructors can illustrate a standard's effect on financial statements and key financial ratios and discuss the potential implications for decisionmakers who use those statements and ratios. Traditionally, accounting education has stressed the mechanics of recording accounting transactions resulting from the adoption of new standards and the effects those transactions have on the various financial statements. Though this focus is understandable, the link between the mechanics of recording the correct journal entries for newly adopted standards and the resultant economic consequences also needs to be emphasized. With the increasing number of accounting graduates pursuing careers in managerial accounting rather than public accounting, the need to teach the economic consequences of adopting new accounting standards is heightened.

History has shown that the economic consequences of a standard can lead to strong political pressure on the FASB. For instance, in 1977 the FASB issued SFAS No. 19, *Financial Accounting and Reporting by Oil and Gas Producing Companies*, which required oil and gas producers to use successful efforts accounting. Small oil and gas manufacturers lobbied Congress, opposing the standard on the grounds that it favored larger oil and gas producers and would have significant earnings implications and reduce the exploration activities of smaller concerns. In response, the Securities and Exchange Commission (SEC) became involved and reexamined the issue. In February 1979, the FASB issued another standard, SFAS No. 25, which suspended the use of successful efforts accounting.

More recently, the FASB was forced to rework its controversial proposal to charge the costs associated with stock option plans against earnings. The proposal fell victim to political pressures primarily from fast-growing companies using stock options to boost executive compensation to compete with larger organizations. To require these companies to recognize stock option costs would have had a severe economic effect, primarily resulting from decreased earnings.

Economic consequences can also affect the users of financial information, such as investors, creditors, and managers. For instance, investors and creditors may react to the changes in financial statements and ratios that result from new standards by altering decisions about whether to infuse capital into a company. Such decisions about resource allocation may affect the stock price. Management behavior may also be affected because decisions such as those regarding dividend distribution, how to raise capital, and financing and investing may be influenced by new standards.

Illustrative Spreadsheet for Understanding Economic Consequences

Kachelmeier, Jones, and Keller (1992) showed that computerized learning aids improved student performance in understanding complex accounting concepts. The spreadsheet developed in this article uses SFAS No. 106 (Employers' Accounting for Postretirement Benefits Other Than Pensions) to highlight the potential economic impact of adopting accounting standards.

SFAS No. 106 changes the method of accounting for postretirement benefits other than pensions; it is having significant effects on firms' financial statements. The greatest immediate financial statement impact caused by the adoption of SFAS 106 results from the recognition of the transition obligation.[1] The term *transition obligation* refers to the liability for postretirement benefits that has already been earned by both employees and retirees at the date that a firm initially implements the standard. Companies have the option of recognizing the transition obligation in its entirety in the year of adoption, or amortizing the transition obligation over future periods. In either case, recognizing the transition obligation results in a decrease in earnings on the income statement, and an increase in liabilities offset by a reduction in retained earnings on the balance sheet. These financial statement changes affect important financial ratios, such as leverage ratios and market-to-book (MTB) ratios, which in turn may subsequently affect stock prices and management behavior.

Format of the Spreadsheet

In Figure 1, we present a spreadsheet demonstrating the financial statement effects of adopting accounting standards. It is generally organized as follows:

SFAS No. 106 on postretirement benefits

- Data section
- Calculation section
  - -Panel A: Financial Statement Effects
  - -Panel B: Financial Ratio Effects

Data section. The information in the data section should be familiar to anyone teaching this topic. Though we picked numbers arbitrarily as a basis for discussion, this section provides an interactive opportunity for professors or students to enter their own data if they wish.

Calculation section—General comments. In the calculation section, we can observe how balance sheets and income statements, as well as related ratios, are affected by the adoption of SFAS No. 106. The numbers that appear are derived from the spreadsheet formulas provided in Figure 2.

Panel A—Financial statement effects. In Panel A of the calculation section, the liabilities and stockholders' equity sections of a typical balance sheet are presented.[2] In the liabilities section of Panel A, the accrual required from recognizing the transition obligation was intentionally listed as a separate line item to highlight the impact of adopting SFAS No. 106.

In the stockholders' equity section of Panel A, additional paid-in capital is assumed to be combined with the related common or preferred stock account. These groupings were made in the interest of simplicity, as it is unlikely that any additional insights would be gained regarding the economic implications by listing the other liabilities and/or additional paid-in capital separately.

The balance sheet before the implementation of SFAS No. 106 is shown in Column B. Progressing on to Column C, the balance sheet effects of recognizing the entire transition obligation in the year of adoption can be seen. Because the transition obligation in this example was set at $30,000, the liability account "Postretirement benefits other than pensions" increases from zero to $30,000 as a result of adopting SFAS 106 under the immediate recognition method.[3] In Column D, the effect of choosing the amortization option on the balance sheet is demonstrated.[4]

Income statement effects are also presented in Panel A. If the transition obligation is recognized in the year of adoption (Column C), it is recorded as a change in accounting principle in the Income Statement, and is responsible for the decrease of $30,000 (from $40,000 to $10,000) shown in the retained earnings. This immediate recognition income statement effect has received national attention in general business publications such as *The Wall Street Journal*. In 1992, many firms decided to adopt SFAS No. 106 and recognize the transition obligation immediately. For instance, Ford and General Motors showed increased liabilities and decreased earnings in their 1992 financial statements of $12 billion and $33 billion, respectively.[5] Despite a huge increase in liabilities and decrease in income in the year of adoption, immediate recognition allows the income statement impact to be isolated and highlighted separately as a "change in accounting principle."

In Column D, the effects of amortizing the transition obligation over future periods is shown. SFAS No. 106 specifies that companies may amortize the transition obligation to expense over the average remaining service life of plan participants. However, if the average remaining service period is less than 20 years, the employer may elect to extend the amortization period to 20 years. In this example, a 20-year amortization period is assumed, which results in the recognition of $1,500 of the transition obligation per year.

FIGURE 1. Example of a Spreadsheet Demonstrating Financial Statement Effects of Adopting Accounting Standards

Spreadsheet Example

	A	B	C	D
1	**DATA SECTION:**			
2				
3		FILL IN		
4	Amount of Transition Obligation	30000	(< 100000 => no , or $)	
5	Amortize Over	20		
6	Amount of Long-Term Debt	20000	(no , or $)	
7	Amount of Common Stock	20000	(Contains common stock and APIC)	
8	Amount of Current Liabilities	25000	(no , or $)	
9	Amount of Retained Earnings	40000	(no , or $ =>has to be > transition obligation)	
10	Market Value of Equity	75000	(>= Common Stock + Retained Earnings)	
11				
12				
13	**CALCULATION SECTION:**			
14				
15	PANEL A: FINANCIAL STATEMENT EFFECTS			
16				
17	**Balance Sheet**			
18		Before Adoption	After Adoption of SFAS No. 106	After Adoption of SFAS No. 106
19		of SFAS No. 106	with Immediate Recognition	with Amortization
20	Liabilities			
21	Current Liabilities	$25,000.00	$25,000.00	$25,000.00
22	Non Current Liabilities			
23	Postretirement other than pensions		30,000.00	1,500.00
24	Long-Term Debt	20,000.00	20,000.00	20,000.00
25	Total Non Current Liabilities	20,000.00	50,000.00	21,500.00
26	Total Liabilities	45,000.00	75,000.00	46,500.00
27				
28				
29	Stockholders' Equity			
30	Common Stock	20,000.00	20,000.00	20,000.00
31	Retained Earnings	40,000.00	10,000.00	38,500.00
32	Total Stockholders' Equity	60,000.00	30,000.00	58,500.00
33	Total Liabilities & Stockholders' Equity	$105,000.00	$105,000.00	$105,000.00
34				
35				
36				
37	**Income Statement**			
38				
39	Income Statement Effect	$0.00	($30,000.00)	($1,500.00)
40				
41		Before Adoption	After Adoption of SFAS No. 106	After Adoption of SFAS No. 106
42	PANEL B: FINANCIAL RATIO EFFECTS	of SFAS No. 106	with Immediate Recognition	with Amortization
43				
44	**Leverage Ratios**			
45	Long-Term Debt	$20,000.00	$50,000.00	$21,500.00
46	Stockholders' Equity	$60,000.00	$30,000.00	$58,500.00
47	Long-Term Debt to Equity	0.33	1.67	0.37
48				
49				
50	Total Debt	$45,000.00	$75,000.00	$46,500.00
51	Stockholders' Equity	$60,000.00	$30,000.00	$58,500.00
52	Total Debt to Equity	0.75	2.50	0.79
53				
54				
55	**Market-to-Book (MTB) Ratio**			
56	Market Value of Equity	$75,000.00	$75,000.00	$75,000.00
57	Book Value of Equity	$60,000.00	$30,000.00	$58,500.00
58	Market-to-Book Ratio	1.25	2.50	1.28

Panel B—Financial ratio effects. Presented in Columns C and D of Panel B is the impact of SFAS No. 106 on two important leverage ratios. On can observe that immediate recognition has a significant impact on both ratios. The impact is muted by choosing to amortize the transition obligation, but the instructor should note that, all else being equal, the leverage ratios will continue to increase each year no matter which adoption alternative is chosen because of the resulting equity-to-debt shift.

Columns C and D of Panel B also illustrate the impact on the market-to-book (MTB) ratio resulting from the adoption of SFAS No. 106. The MTB ratio is a valuation ratio calculated by dividing the market value of equity by the book value of equity. Because of the shift from equity to debt caused by the adoption of SFAS No. 106, the book value of total equity of the adopting firm will decrease, and the MTB ratio will have a smaller denominator, thereby increasing this ratio. Hence, both alternatives cause an increase in the overall MTB ratio, but to different degrees.

FIGURE 2. Formulas for Deriving Numbers in Spreadsheet

Spreadsheet Formulas

	A	B	C	D
1	DATA SECTION:			
2				
3		FILL IN		
4	Amount of Transition Obligation	30000	(< 100000 => no , or $)	
5	Amortize Over	20		
6	Amount of Long-Term Debt	20000	(no , or $)	
7	Amount of Common Stock	20000	(Contains common stock and APIC)	
8	Amount of Current Liabilities	25000	(no , or $)	
9	Amount of Retained Earnings	40000	(no , or $ =>has to be > transition obligation)	
10	Market Value of Equity	75000	(>= Common Stock + Retained Earnings)	
11				
12				
13	CALCULATION SECTION:			
14				
15	PANEL A: FINANCIAL STATEMENT EFFECTS			
16				
17	Balance Sheet			
18		Before Adoption	After Adoption of SFAS No. 106	After Adoption of SFAS No. 106
19		of SFAS No. 106	with Immediate Recognition	with Amortization
20	Liabilities			
21	Current Liabilities	=+$B$8	=+$B$8	=+$B$8
22	Non Current Liabilities			
23	Postretirement other than pensions	0	=+$B$4	=IF(+$B$5<20,+$B$4/20,+$B$4/$B$5)
24	Long-Term Debt	=+$B$6	=+$B$6	=+$B$6
25	Total Non Current Liabilities	=SUM(B23:B24)	=SUM(C23:C24)	=SUM(D23:D24)
26	Total Liabilities	=B21+B25	=C21+C25	=D21+D25
27				
28				
29	Stockholders' Equity			
30	Common Stock	=$B$7	=$B$7	=$B$7
31	Retained Earnings	=$B$9	=$B$9-$C$23	=$B$9-$D$23
32	Total Stockholders' Equity	=SUM(B30:B31)	=SUM(C30:C31)	=SUM(D30:D31)
33	Total Liabilities & Stockholders' Equity	=+B26+B32	=+C26+C32	=+D26+D32
34				
35				
36				
37	Income Statement			
38				
39	Income Statement Effect	=$B$23	=0-$C$23	=0-$D$23
40				
41		Before Adoption	After Adoption of SFAS No. 106	After Adoption of SFAS No. 106
42	PANEL B: FINANCIAL RATIO EFFECTS	of SFAS No. 106	with Immediate Recognition	with Amortization
43				
44	Leverage Ratios			
45	Long-Term Debt	=B25	=C25	=D25
46	Stockholders' Equity	=$B$32	=$C$32	=$D$32
47	Long-Term Debt to Equity	=B45/B46	=C45/C46	=D45/D46
48				
49				
50	Total Debt	=$B$26	=$C$26	=$D$26
51	Stockholders' Equity	=$B$32	=$C$32	=$D$32
52	Total Debt to Equity	=B50/B51	=C50/C51	=D50/D51
53				
54				
55	Market-to-Book (MTB) Ratio			
56	Market Value of Equity	=$B$10	=$B$10	=$B$10
57	Book Value of Equity	=B32	=C32	=D32
58	Market-to-Book Ratio	=+B56/B57	=+C56/C57	=+D56/D57

Using the Spreadsheet as a Basis for Class Discussion

After discussing the mechanics of adopting a standard, the instructor will want to address potential economic consequences arising from adoption. A potential topic for class discussion centers around the topic of management choice and the adoption alternatives for SFAS No. 106. A company may prefer immediate recognition, which has two major advantages. First, the company is able to take a one-time charge to income. Perhaps more important, though, the decrease in income is shown as an effect of a change in accounting principle and can be shown as such in the EPS calculation, making it more likely that investors will perceive the associated decrease in income as a unique event.

Alternatively, management may decide to amortize the cost over future periods. This option will mitigate the immediate impact and may allow time to alter the benefit plan to decrease the amount of future expense. The decrease in income is incorporated into the postretirement benefits expense and is reflected in income from continuing operations. In this case, the charge will not "stand out," and may be viewed as nontemporary.[6]

With respect to income statement effects, any change in earnings can be quite important for a firm. For instance, significant increases or decreases in a profitability measure could have economic implications for a firm in terms of raising investment capital. Further, one of the most important profitability measures to investors, potential investors, and investment analysts is earnings per share (EPS). Changes in earnings may cause EPS volatility and hence could dissuade potential investors or cause analysts concern about the stability of the company.

Economic consequences may also arise from effects on leverage ratios. Because leverage is often viewed as a measure of risk and a firm's long-run solvency, a negative effect on the leverage ratios could hurt a firm's ability to obtain financing. Further, an increase in leverage may also heighten the chances that firms will experience binding debt covenants, as debt covenants are generally dependent at least in part on leverage ratios. Hence, the financing implications arising from increasing leverage ratios may be quite severe. Alternatively, an accounting standard that decreases leverage may be a candidate for early adoption by firms that may be perceived as risky financing possibilities.

Stock price effects can also be an economic consequence of adopting accounting standards. For instance, some experts feel that the adoption of SFAS No. 106 may cause MTB ratios to become inflated for many companies and have negative effects on a firm's stock price. An inflated MTB ratio may lead investors to label a firm as overvalued. According to Williams (1993), many financial and investment specialists initially felt that because there was no effect on cash flows, the adoption of the standard would not affect stock prices. However, some financial experts have predicted that SFAS No. 106 will have a negative impact on stock prices because its adoption is expected to increase MTB ratio to levels never seen before.

A study by Coopers & Lybrand in conjunction with the Lowry Consulting Group of Atlanta found that the 200 largest Standard & Poor's companies will experience a 7.8% drop in book value by the year 2000 because of continual charges linked to SFAS No. 106. Jared Shope, Director of Research and Development with Lowry, notes that when MTB ratios historically have been as high as their present level, the following 10 years have produced declines in the real rate of return on stocks.

Though most of the economic consequences discussed thus far have dealt with external financial statement users, management behavior may also be altered by the adoption of a new standard. For instance, a change in management behavior regarding dividend policies may occur as a consequence of adopting standards that reduce earnings. Most dividend policies are based on reported earnings, and as shown in the spreadsheet, SFAS No. 106 will have a negative impact on a firm's bottom line. Consequently, it is natural to assume that dividends will be reduced.

A potential change in management behavior stemming uniquely from SFAS No. 106 relates to the amount of postretirement benefits a company is willing to provide. Some compensation experts (e.g., Phillips & Crehan, 1991; Custis, 1991) have suggested ways that companies can curtail postretirement benefits to cut costs. Williams (1993) found that many companies have, in fact, reduced postretirement benefits provided to employees in order to lower costs.

Conclusions

The role of economic consequences in the setting of new accounting standards is not trivial. In the past, the FASB has been forced to modify proposed and/or released standards because of political pressure resulting from economic consequences. Accounting educators, therefore, must convey the importance of economic consequences to their students.

In this article, we have suggested that the topic of economic consequences of accounting standards should be an integral part of accounting courses. The simple spreadsheet tool presented, although based on SFAS No. 106, was not designed to teach the mechanics of implementing these standards, but rather serves as an excellent blueprint to enable students to see the economic implications of the standards and to illustrate how instructors may weave this topic into their classes. The impact of accounting standards on liquidity measures, activity measures, and the capital structure of a firm should be considered. The adoption of accounting standards has wide ramifications for every aspect of business, not just the journal, ledger, and financial statements.

NOTES

1. Though the adoption of SFAS No. 106 has other asset and expense implications, in this article we focused solely on the economic consequences associated with recognizing the transition obligation, which has received much attention in the business press.

2. Because SFAS No. 106 does not directly affect any asset accounts, we did not see the need to illustrate this portion of the balance sheet.

3. The instructor may wish to emphasize that this account typically *did not exist* prior to SFAS No. 106.

4. We are assuming that the standard is adopted effective at the beginning of the year; thus, the effects of an entire year's amortization is reflected.

5. These figures come from the 1992 annual reports of Fort Motor Company and General Motors.

6. For extended analysis of further possible implications from the change in leverage ratios, see Cocco, Ivancevich, and Hardigree (1993).

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