Woman C.P.A.

Volume 53 | Issue 3 Article 4

Summer 1991

Present Value of Future Work: Is It Zero?

Phyllis L. Thomas

Sarah C. Dawkins

Present Value of Future Work: Is It Zero?

By Phyllis L. Thomas and Sarah C. Dawkins

What is the effect of using present value on reported warranty expense? A Discussion Memorandum, "Present Value-Based Measurements in Accounting," issued by the FASB on December 7, 1990, proposes the use of present value accounting for warrnaties as well as for the valuation of other assets and liabilities. The use of present value requires more work by the accountant for little benefit.

The example set forth in the discussion memorandum will be explained and an additional example, incorporating a different flow of actual warranty expense, will be examined to discern the effect of the use of present value on reported warranty expense. The examination of these examples will be followed by a discussionof practical implementation consideratins should the FASB establish this requirement as GAAP.

Discussion Memorandum Example

A company has estimated warranty expense and their associated cost/cash flow as presented in Table 1. The assumed interest rate is 10%. In the first situation, no change in estimated cost will occur.

Table 1

Year	Estimated Cost Under Warranty
1	$2,700
2	3,600
3	5,400
	$11,700

The present value of the flow of cost estimated by the company discounted at 10% is $9,486.85. Interest must be computed on the balance of the estimated warranty liability each year. The effect on the income statement of the use of present value will change the reported amount of the warranty expense in year 1 and result in the reporting of interest expense in years 1-3. A comparison of the reported amounts as determined under current practice and the proposed present value approach is presented in Table 2.

Table 2

Year	Current Practice	New Warranty	Interest	Total
1	$11,700	$9,486.85	$948.68	$10,435.53
2			773.55	773.55
3			490.92	490.92
	$11,700	$9,486.85	$2,213.15	$11,700.00

The effect on a company's financial statements has been simplified by looking at the effectof warranty expense resulting from the sales in only one year. If sales and associated warranty expenses are relatively constant, the reported total expense on the income statement will be unchanged. The use of present value will result only in a change in the name of the expense, i.e., warranty expense or warranty expense and interest expense. The total expense reported on the income statement in year one using present value is 89% of the amount reported under current GAAP. Since warranty expenses are small enough that many companies are not reporting them as a line item, is this difference material?

The example is extended to incorporate an actual increase of $1,000 to the labor cost in year 3. If the company does not include this change in the estimated liability at the time of sale, under both current practice and present value, the increase will result in a reported warranty expense of $1,000 in year 3. Table 3 shows the comparison of reported expenses related to the warranty under these assumptions.

Table 3

Year	Current Practice	New Warranty	Interest	Total
1	$11,700	$9,486.85	$948.68	$10,435.53
2			773.55	773.55
3	1,000	1,000.00	490.92	1,490.92
	$12,700	$10,486.85	$2,213.15	$12,700.00

Table 4

Year	Current Practice	New Warranty	Interest	Total
1	$12,700	$10,238.16	$1,023.81	$11,261.97
2			856.19	856.19
3			581.84	581.84
	$12,700	$10,238.16	$2,461.84	$12,700.00

It should be noted that the present value and the yearly interest reported have not changed from those used in Table 2. The company's non-inclusion of the actual increase in the estimated liability will effect only the expense reported in year 3, under GAAP and the present value method. Reported expense associated with the warranty under the present value method is again 89% of the expense that is currently reported under GAAP.

If the resulting increase is due to labor negotiations that were scheduled for year 3, some accountants would include an estimate fo the increase in labor charges in their estimated warranty liability accrued in year 1. The inclusion of the increase in labor would change the present value of the estimated warranty expense to $10,238.16. The assumed flow of expense under the warranty would be $2,700, $3,600 and $6,400 in years 1-3, respectively. Table 4 presents the amounts to be reported on the income statement under current GAAP and the present value approach.

The $1,000 estimated increase in labor resulting from the future negotiation of the labor contact is included in the warranty expense under GAAP and in the computation of the present value figures. The reported amount of interest plus warranty expense is 89% of the amount that would be reported under GAAP.

Table 5

Year	Estimated Cost Under Warranty
1	$5,850
2	3,510
3	2,340
	$11,700

Example with Reduced Coverage Under Warranty

The example discussed in the discussion memorandum and earlier in this paper includes cost associated with warranties that increase over the warranty. Since some warranties provide decreasing coverage as the age of the product increases, companies may experience decreasing warranty cost over the warranty period. The example below will include the same total cost under the warranty as the previous example, but the timing of the flows will be as listed in Table 5.

If the company accrues expenses associated with the warranty as listed in Table 5, the present value of these exepnses at 10% will be $9,977.08. Table 6 presents the warranty related expenses for years 1-3 under both GAAP and the present value approach. As before, the reported total expense associated with the warranty under both methods is a similar amount. When the flow of the actual expenses is larger in early years, then the total expense in year one under the present value method will be closer to the amount currently reported under GAAP. In this example, the present value amount is 94% of the GAAP amount.

Table 6

Year	Current Practice	New Warranty	Interest	Total
1	$11,700	$9,977	$997.70	$10,974.70
2			512.47	512.47
3			212.83	212.83
	$11,700	$9,977	$1,723.00	$11,700.00

Tables 7 and 8 parallel Tables 3 and 4 with the inclusion of an increase in labor cost in year 3 of $1,000. The reported amount of expense under the two methods is again similar. In both situations, the expense calculated under the present value method is at least 93% of the current GAAP amount of warranty expense.

Table 7

Year	Current Practice	New Warranty	Interest	Total
1	$11,700	$9,977	$997.70	$10,974.70
2			512.47	512.47
3	$1,000	$1,000	212.83	1,212.83
	$12,700	$10,728.00	$1,972.00	$12,700.00

Table 8

Year	Current Practice	New Warranty	Interest	Total
1	$12,700	$10,728.00	$1,072.80	$11,800.80
2			595.08	595.08
3			304.12	304.12
	$12,700	$10,728.00	$1,972.00	$12,700.00

Additional Accounting Considerations

The examples presented earlier indicate small differences in the reported amount of warranty expense between the current GAAP requirements and the proposed present value method of calculating warranty expense. If the FASB requires the implementation of the procedure set forth in the discussion memorandum, companies with warranties must prepare additional schedules to meet these requirements.

Traditional accounting for warranties required that companies estimate 1) the number of claims under the warranty offered with the product, and 2) the cost associated with each claim. The inclusion of present value into warranty accounting will require additional consideration of 1) the timing of the claims by the customer and 2) the proper interest rate to be used in the calculation of the warranty expense. The cumulative effect of this change in accounting procedure must be calculated in the year of implementation. Additionally, information must be maintained to track the actual claims under warranty related to the year of sale, to assist in the future estimation of warranty expense. Auditors also may require information related to the reliability of the estimated timing of the claims.

Currently, warranty expenses must be small for many companies, since the amount of warranty expense is seldom reported as a line item. In the examples presented, only 11% or less of the expense is reported in years other than the year of sale, as is done under current GAAP requirements. If the total amount of expense under warranties is immaterial, will there be a real benefit in reporting this amount in different years under two types of expenses, i.e., warranty and interest? What is the cost-benefit?

Phyllis L. Thomas, *Ph.D., CPA, CMA, is a member of the AICPA and the Institute of Certified Management Accountants. She is an Associate Professor of Accounting at Middle Tennessee State University.*

Sarah C. Dawkins, *Ph.D., CPA, is a member of the American Accounting Association and the Tennessee Society of Accounting Educators. She is an Associate Professor of Accounting at Middle Tennessee State University.*