



FINANCIAL STATEMENT ANALYSIS
ACCOUNTING FOR PENSION BENEFIT
AND
EARNING QUALITY



ACCOUNTING FOR PENSION BENEFITS

There are two types of pension plans:

1. **Defined Contribution plans:** Defined contribution plans, in which the employer is required to make a certain contribution into a pension fund each year. The employer's annual pension expense for defined contribution plans is the amount that the company must contribute to the fund during the year to satisfy the contribution formula. Therefore, the reported pension expense matches the outflow of cash contributed by the sponsoring firm to the pension fund for a defined contribution plan. The employees bear the investment risk.
2. **Defined Benefit Plans:** Defined benefit plans obligate the employer to pay specified pension benefits to retired employees. Thus, the investment risk is borne by the employer. The pension expense that should be recognized each year is less clear for defined benefit plans than for defined contribution plans because the amount of benefits that will ultimately be paid cannot be known at the time they are being earned. Consequently, to determine the current pension expense, the future benefits to be paid must be estimated. Actuarial studies must be performed and assumptions must be made about future events, including such variables as the life expectancies of participants, labor turnover rates, future wage levels, discount rates, rates of return on fund assets, and so forth.
3. The annual costs of defined contribution plans are clear; they are the amounts that the firm is required to contribute to the plan each year. However the benefits in defined benefit plans are usually not specified in absolute dollar amounts; they are defined according to a benefit formula that reflects future events. There are essentially two types of defined benefit plan formulas:
 - a. Pay-Related Plan
 - b. Non-Pay-Related Plan

PENSION OBLIGATION

A defined contribution pension plan only imposes the obligation to make annual contributions to the employees' pension trust fund in accordance with a prescribed formula. When the contribution is made, the obligation is discharged.

Companies with defined benefit pension plans accrue obligation to pay benefits, according to the benefit formula, as the employees perform work. However, these obligations are not discharged until the employee retires.

1. Determining Pension Obligation

Since pension benefit formulas relate the future benefits that are to be paid to the aggregate work performed by employees for the company until their retirement, there



are several alternative ways of determining what the size of the obligations will be in the future, and what should be their value.

a. Actuarial Estimate

Firms use actuaries to estimate the future benefits. These estimates are combined with the plan's benefit formula to generate a forecast of benefits to be paid into the future. This future liability is discounted and its present value is the pension obligation.

b. Measures of Pension Obligation

There are three different measures of the pension obligations

Accumulated Benefit Obligation (ABO) – the present value of pension benefits earned as of the balance sheet date based on current salaries.

Projected Benefit Obligation (PBO) – the present value of pension benefits earned, including projected salary increases.

Vested Benefit Obligation – the portion of the benefit obligation that does not depend on future employee service: alternatively, it is the vested portion of the ABO.

c. Assumptions

Each of these measures of the firm's obligation is a present value and as such, the **discount rate** used to calculate these amounts is critical. **The higher the discount rate, the lower each obligation will become.** FAS 87 requires this rate to be **current settlement rate** that changes from time to time

The PBO, which includes salary increase, will be the largest number of the three measures and it is the best estimate of the firm's ongoing pension obligation. The ABO and PBO will be equal under a flat benefit plan.

Obviously, another key assumption is the **wage growth rate**. If a firm is estimating high salary growth rate this will increase the obligations and result in a higher PBO. The PBO will be reduced if a low salary growth rate assumption is made. A firm would be inconsistent if they assume high inflation in the future and use a high discount rate while using a low salary growth rate

2. Accounting Standards

In the U.S., the controlling accounting statements covering pension accounting are FAS 87 and FAS 132. The detail of accounting treatment is in FAS 87. It assumes that pensions are forms of deferred compensation for work currently performed and, as such pension expenses be recognized on an accrual basis when they are being earned by employees. **The Accounting standard focus on three fundamental aspects: delaying recognition of certain events, reporting net cost, and offsetting liabilities and assets.**



a. Delaying Recognition of Certain Events

This feature means that changes in the pension obligation (including those from plan amendments) and changes in the value of plan assets are deferred and amortized over subsequent periods.

b. Reporting Net Cost

This feature means that pension cost is reported as a single number in the financial statements. The result is the aggregation of at least 3 items: compensation cost of benefits promised, interest cost from the deferred payment of benefits, and return on plan assets.

c. Offsetting Liabilities and Assets

This feature means that the value of the pension assets is offset against the projected benefit obligation (PBO) for presentation and disclosure purposes.

KEY PENSION TERMS

Pension expense reported in the income statements is computed as :

$$\begin{aligned} & \text{Service cost} \\ & + \text{Interest cost} \\ & - \text{Expected return on pension investments} \\ & + \text{Amortization of unrecognized prior service cost} \\ & \pm \text{Amortization of unrecognized gains (losses)} \\ & \pm \text{Amortization of transition asset or liability} \\ \hline & = \text{Pension Expense} \end{aligned}$$

FAS 87 defines several terms that are used for pension accounting, including:

1. Service cost

This is the amount by which the pension obligation increases due to employee services performed in the current year. It is computed as the present value of the year-to-year change in the PBO that is attributed under the actuarial method to employee efforts performed in the current period. This cost is actuarially determined and is sensitive to the discount rate assumption and wage growth rate assumptions.

2. Interest cost

This is the amount by which the pension obligation increases during the current year by interest being added to last year's pension obligation. It is the actuarially assumed discount rate used to compute last year's pension obligation.



Interest Cost = last year's PBO * Discount rate used to compute last year PBO

3. Expected Return on Plan Assets

This is a negative cost that acts to reduce the current pension expense. It is the average rate of return expected to be earned in the long run on the assets invested in the pension fund. In contrast to the discount rate (that may change every years as interest rate change), the expected rate of return to be earned on plan asset is intended to be stable over time.

Expected return on plan assets = Value of pension plan assets at the end of last year * Long-run rate of return expected on the pension fund.

Why don't use the actual return on pension fund assets? The actual return earned on pension fund assets fluctuates from year to year, as a result of stock and bond market gyrations. The cost of a pension program would be highly volatile if costs were based on actual yearly investment performance. FASB 87 permits firms to use the "expected" long-run rate of return on plan assets as the basis for computing pension costs. The difference of the expected return of pension plan and the actual pension plan return earned in a given year can be deferred, so as not to impact the current pension expense.

4. Amortization and Deferred of Gains and Losses

There are two types of experience gains and losses that may be deferred currently and gradually incorporated into the pension expense on an amortized (smoothed) basis over time:

- (1). The first is the result of differences between the actual and expected returns on investment gains and losses.
- (2). The other is due to periodic changes that may be made in the actuarial assumptions to make them more accurately reflect actual experiences with respect to the discount rate, wage growth rates, employee turnover, and so forth.

Change in actuarial assumptions that increase a firm's PBO result in actuarial losses; changes that decrease the PBO result in actuarial gains.

Like investment gains and losses, actuarial gains and losses that occur in any one year may be deferred in the hopes that, over the long run, deferred losses will be matched by offsetting deferred gains.

FASB 87 requires that if deferred investment and actuarial gains or losses accumulated to large sums, they must be amortized into the pension cost structure. The procedure for calculating the minimum amortization of large



accumulations of deferred experience gains or losses is as follow:

- a. At the start of each fiscal year, the net cumulative deferred gains or losses are computed.
- b. If the net cumulative deferred gain or loss is less than 10% of the large of either the PBO or the value of the assets invested in the pension fund, no amortization of the cumulative deferred gains or losses is required.
- c. **If the net cumulative deferred gain or loss is greater than 10% of the PBO or the value of the assets invested in the pension fund, whichever is larger, then the excess cumulative deferred gain or loss that is over the 10% base amount must be amortized into the pension cost structure on a straight line basis over the average remaining service life of the workforce.**

Alternatively, management may use any amortization formula it wish to amortize cumulative deferred investment and actuarial gains and losses, if the resulting amortization is greater than the amount specified by the minimum amortization calculation described above.

For example, assume the following facts exist at the beginning of a year:

Value of pension plan assets	\$1,000,000
Projected Benefit Obligation	1,200,000
Cumulative Unrecognized Deferred Loss	140,000
Average Remaining Work Life of Employees	20 years

The calculation of the minimum amortization of the deferred gains (losses) that must occur in the following year is shown below:

The portion of the net cumulative deferred loss that exceeds 10% of \$1,200,000 (the larger of the PBO or plan assets) must be amortized over the 20-year average:

$$10\% \text{ of } \$1,200,000 = 120,000$$

$$\text{Amount to be Amortized} = \$140,000 - 120,000 = \$20,000$$

$$\text{Amortization of loss} = \$20,000 / 20 \text{ years} = \$1,000 / \text{year}$$

Note: The amortization of a deferred loss will act to increase annual pension expenses; the amortization of a deferred gain will act to decrease annual pension costs.

5. Amortization of Prior Service Costs

A prior service cost comes into being when a pension plan is first enacted or when a current plan is amended. At that time, current employees become



entitled to benefits by virtue of their past years of service, as evidenced by the increase in the pension obligation due to the plan amendment. However, because the plan in its current form did not exist prior to its creation or amendment, no fund would have been set aside for such benefits prior to the plan's creation or amendment. The benefits owed by virtue of this obligation are, therefore, called past service liabilities. **FASB 87 requires that prior service liabilities arising from plan amendments be amortization over the average estimated remaining service life of the employees.**

Amortization of prior service liabilities = PBO due to plan amendments / Average remaining work life of work force

Note: The amortization of past service liabilities will cease and the associated prior service costs become zero, once all past service liabilities are written off.

6. Amortization of Transition Amount

FASB 87 requires that companies had to determine their pension obligation and the fair market value of their pension assets on the date that they adopted FASB 87. **The difference between the two was called the unrecognized net obligation, or transition amount. It was an unrecognized liability if the pension obligation exceeded the market value of the plan assets; it was an unrecognized asset if the market value of the pension assets exceeded the pension obligation. This asset or obligation was required to be amortized over the average estimated future service life of the employees.** Its amortization will be part of the current year's pension cost calculation. The total transition amount is not a recognized liabilities or asset, however.

For example, assume the following facts existed on the date that a company adopted FASB 87 in 1987:

Market Value of Plan Assets	\$1,000,000
Projected Benefit Obligation	1,200,000
Average Remaining Service Life of Employees	20 years

The transition amount is an unrecognized liability of \$200,000 (\$1,200,000 – 1,000,000). This liability will be amortized over the subsequent 20 years, which will add a constant \$10,000 to the pension cost each year until it cease in 2007.

Amortization of Transition Amount = \$200,000 / 20 years = \$10,000 / year

7. Contributions Made and Benefits Paid

The contributions made by the sponsoring firm to pension fund are the effect that the pension has on the sponsoring firm's cash flow. Pension expense becomes accrued expenses if they are not paid. **Benefits paid are not cash flows of the sponsoring firm because they are paid out of the pension fund's assets.** Thus, benefits paid affect the size of the pension's assets and obligations, as well as its cash flow.

PENSION ASSUMPTIONS

There are many actuarial assumptions that impact pension obligations, the pension expense, and the funding requirement of the sponsoring firm. In analyzing the actuarial assumptions, the analyst needs to look at the assumptions from two perspectives:

- Are the current assumptions appropriate
- If the assumptions have been changed, what is the impact of the change on the financial statement?

The three major pension assumptions from these two perspectives are examined below.

1. Discount Rate Assumption

Discount rate is supposed to approximate the current discount rate that would apply to determining the present value of future benefits. Therefore, it changes with general interest rate conditions.

Because it is the discount rate that is used to calculate the ABO, VBO, and PBO, **the pension obligation tend to change in the opposite direction to the change in the discount rate assumption;** i.e., if the discount rate is increase, the pension obligations will decrease and this will produce an actuarial gain for the year. On the other hand, if the discount rate is decreased, the pension obligation will increase and this will produce an actuarial loss for the year. The discount rate also is the rate that is applied to the PBO to determine the interest cost component of the total pension expense. However, since this year's interest expense component is calculated by multiplying last year's PBO by the discount rate that was used last year to determine the PBO, any change in the discount rate assumption made in the current year will affect next year's interest component of the pension expense. Furthermore, if the discount rate is increased (or decreased) in the current year, the impact on next year's pension expense will be computed by multiply this year's higher (or lower) discount rate assumption by the lower (or higher) PBO produced this year by the new discount rate assumption. Furthermore, when the PBO decreases (or increases), an actuarial gain (or loss) occurs. The PBO effect tends to dominate so that **a higher (or lower) discount rate assumption tends to reduce (or increase) future pension expenses as**

well as the pension obligation.

If the discount rate assumption is too high, the resulting unreasonably low PBO will tend to cause the reported pension expense to be unreasonably low. This will bias earnings upward. Conversely, if the discount rate assumption is too low, the result will be an unreasonably high PBO and a high pension expense that will bias earnings downward.

2. Wage Growth Rate Assumption

The wage growth rate assumption directly impacts pension obligations and the service cost component of the reported pension expense. Therefore, **a higher (or lower) wage growth rate assumption will result in a higher (or lower) pension obligation and a higher (or lower) service component of its reported pension expense.** If a firm uses an unrealistically high wage growth rate assumption, its pension obligations and pension expense will be overstated and, therefore, its funded status and earnings will appear to be worse than they really are. The opposite is the converse direction.

3. The Discount Rate-Wage Growth Rate Spread

The discount rate and wage growth rate should be consistent. Rising inflation tends to raise wage growth and interest rate equally. **Be wary of firms that raise the discount rate assumption by more than the wage growth rate assumption,** thereby raising the discount rate-wage growth rate spread. This can be done to reduce pension obligation and reported pension expenses.

4. Expected Rate of Return on Fund Assets

If the expected return on plan assets is too high, the pension expense is probably understated, boosting reported earnings; if the expected return on plan assets is too low, the pension expense is likely to be overstated, reducing reported earnings. Again, **manipulating the expected return on plan assets will manipulate reported earnings and can be used to smooth earnings per share.** Since the expected return on plan assets, unlike the discount rate assumption, is supposed to be based on very long-term considerations, it should not change very frequently.

The following table summarizes the impact of pension assumptions on the pension obligation and expense.



	Impact of Pension Assumption		
	Higher (lower) <u>Discount Rate</u>	Higher (lower) <u>Compensation Rate increase</u>	Higher (lower) <u>Expected Rate of Return on Plan</u>
<u>Assets</u>			
PBO	Lower (Higher)	Higher (lower)	No impact
ABO	Lower (Higher)	No impact	No impact
VBO	Lower (Higher)	No impact	No impact
Pension Expense	Lower (Higher)	Higher (lower)	Lower (Higher)

ADDITIONAL MINIMUM PENSION LIABILITY

FASB 87 requires that at every balance sheet date, firm must compute:

- Their accumulated benefits obligation (ABO).
- The market value of the pension plan assets

If the pension plan assets are greater than the accumulated benefit obligation, no balance sheet entries are required (the overfunded portion of pension plans is not recognized as an asset on the balance sheet). If the accumulated benefit obligation (ABO) exceeds the value of the pension plan asset, then the difference must appear on the balance sheet as an additional unfunded pension liabilities. **This smaller liability represents the degree of underfunding that would exist if the pension plan were terminated**

For example, assume the following facts about Vertigo Inc.'s pension fund at year-end:

Market Value of Pension Assets	\$1,165,000
Projected Benefit Obligation	1,879,000
Accumulated Benefit Obligation	1,254,000
Unrecognized Prior Service Liabilities Due to Plan Amendments	50,000
Pension Expense	304,000

At year-end, the plan is underfunded. The best measure of the degree of the underfunding is the difference between the projected benefit obligation and the value of the plan assets ($\$1,879,000 - 1,165,000 = \$714,000$). However, FASB 87 does not require that this liability as shown on the balance sheet; instead, it requires a balance sheet liability to be recorded equal to the difference between the accumulated benefits obligation and the value of the plan assets ($\$1,254,000 - 1,165,000 = \$89,000$), if the ABO exceeds the plan assets. This smaller liability represents the

degree of underfunding that would exist if the pension plan were terminated.

The journal entry that puts this additional minimum pension liability adjustment onto the balance sheet requires the crediting of an Unfunded Pension Liability account by \$89,000.

FASB 87 specifies that the offsetting debits are to be to (potentially) two accounts:

- Intangible Pension Asset – this account is equal to the lesser of: (a) the Unfunded Pension Liability or (b) the Unrecognized Past Service Liabilities.
- Pension Charge to Shareholders' Equity – This account (which is a negative equity account) will be the additional necessary debit/charge required to balance the journal entry if the Unfunded Pension Liability account exceeds the firm's Unrecognized Past Service Liabilities

In the example above, the journal entry that required to record the \$89,000 unfunded pension liability is :

Intangible Pension Asset	50,000	
Pension Charge to Shareholders' Equity	39,000	
Unfunded Pension Liability		89,000

The reason the Intangible Asset can be equal to the Unrecognized Prior Service Liability is that the FASB did not want to penalize companies for improving or starting a pension plan. Since FASB 87 requires unrecognized prior service liabilities to be written off over the remaining service life of the employees anyway, there is no need to further penalize a firm for having such liabilities. If the underfunding is due to factors other than the existence or prior service liabilities, however, the FASB believed that some penalty should be attached because such shortfalls are caused by underfunding the pension fund or by poor investment performance.

If, at the end of any year, the fair market value of the plan assets exceeds the firm's accumulated benefit obligation, then no funded pension liability nor their offsetting debits (e.g., Intangible Pension Asset or Pension Charge to Shareholders' Equity) are shown on the balance sheet. As these are direct charges, adding them to, or taking them off, the balance sheet has no impact on the income statement, net income, or earning per share. However, they do impact the firm's net worth, book value, and book value per share.



ACCOUNTING FOR OTHER POST-RETIREMENT BENEFITS

In addition to offering pension plans, many companies provide other benefits to retirees as well. The largest of these other post-retirement benefits is the provision of healthcare benefits. The accounting for these other retirement benefits is similar to that done for pension benefits, with two differences:

1. Non-pension benefits are typically not pay related and as a result, there is only one measure of the obligation (referred to as the accumulated postretirement benefit obligation or APBO).
2. There is no minimum liability provision required for these other post-retirement benefits. The balance sheet will reflect the difference between the periodic cost and the contributions.

The amount of expense recognized for other post-retirement benefits has the same components as was previously discussed for pension. **The computations are similar, except benefits such as healthcare are not impacted by expected wage increase, but are impacted by expected changes in healthcare costs (healthcare inflation rate).** The only other major difference is that FASB 106, which addresses other post-retirement benefits accounting, allow companies to immediately recognize the transition amount rather than requiring this transition amount be amortized.

ANALYZING PENSION DISCLOSURES

To understand a firm's pension accounting methods, an analyst must review the firm's consolidated statement of income, consolidated balance sheet and pension related footnotes prepared under U.S. GAAP. Particular attention should be paid to the pension disclosures.

Consider Textron Inc., a U.S. manufacturer of electronic equipment. Textron's financial statements for 20X1 are detailed below. Textron will serve as an example to demonstrate pension accounting analysis.

1. Reconciling the Projected Benefit Obligation

U.S. GAAP requires companies to show a reconciliation of their projected benefit obligation (PBO) from the beginning of the year to the end of the year. This reconciliation is show below:



Textron, Inc.

Reconciliation of Projected Benefit Obligation for 20X1

	U.S. Plans	Japanese Plans
Change in Projected Benefit Obligation		
PBO at beginning of year	\$25,198	\$32,020
Foreign exchange rate changes	0	5,328
Service cost	534	860
Interest cost	1,512	2,370
Plan amendments	0	3,966
Actuarial losses (gains)	(56)	(4,284)
Acquisitions	136	1,036
Benefits paid	(1,078)	(2,140)
PBO at end of year	\$26,246	\$39,156

2. Reconciling the Plan Assets

U.S. GAAP requires companies to show a reconciliation of their plan assets from the beginning of the year to the end of the year. This reconciliation is shown below

Textron, Inc.

Reconciliation of Plan Assets for 20X1

	U.S. Plans	Japanese Plans
Change in Plan Assets		
Fair value of plan assets at beginning of year	\$5,796	38,848
Foreign exchange rate changes	0	6,618
Actual return on plan assets	309	7,034
Employer contribution	8,118	332
Plan participant contribution	0	54
Acquisitions	0	996
Benefit paid	(298)	(2,128)
Fair value of plan assets at end of year	\$13,925	\$51,754

3. Calculating the Underlying Economic Liability

The funded status does not appear on the company's balance sheet as an asset or liability. Rather, the prepaid pension expense asset or the accrued pension expense liability that appears on a firm's balance sheet equals the funded status after it is adjusted for various amortizations and deferrals. A prepaid pension expense asset increases (or an accrued pension expense liability decreases) on a firm's balance sheet only if the firm makes cash contributions to the pension fund that exceed the pension expense reported on the income statement for period. Conversely, an accrued

pension liability increases (or a prepaid pension asset decreases) if the pension expense reported on a firm's income statement exceeds its cash contributions to the pension fund for the period.

The funded status of each plan should be determined by comparing the PBO to plan assets. Looking at the data, it is apparent that the U.S. plans are underfunded by \$12,321 million, while the Japanese plans are overfunded by \$12,598 million. This funded status reflects Textron's underlying economic liability based upon PBO. U.S. GAAP permits the deferral of some items, such as unrecognized prior service costs and unrecognized actuarial net gains or losses, rather than reporting them in the financial statements. These items are generally disclosed in the footnotes of a firm's financial statements. A review of Textron's balance sheet reveals a liability of \$10,782 million for U.S. plans and an asset of \$12,336 million for Japanese plans. The difference between the liability for the U.S. plans reported in the financial statements and the economic liability results from deferred items, such as the difference between the actual and the expected return on plan assets. An analyst should reconcile the difference between these two types of liabilities by restating the balance sheet to the plan's current fund status (the PBO-based underlying economic liability). This can be accomplished by increasing pension liabilities for U.S. plans by \$1,539 million, which is the difference between the funded status of \$12,321 million and the amount recognized on the balance sheet of \$10,782 million. Alternatively, an analyst could review Textron's pension footnotes in the financial statements and increase the pension liabilities to account for the impact of all off-balance sheet items (e.g., unrecognized prior service costs, unrecognized actual net gains or losses, etc.).

For Textron's Japanese plans, the analyst would increase the pension assets by \$262 million, the difference between the funded status of \$12,598 million and the pension asset of \$12,336 million. Scrutiny of Textron's pension footnotes show that the majority of the prepaid amount shows up as prepaid pension cost. Nonetheless, the balance sheet adjustments are to increase Textron's liabilities by \$1,539 million and increase assets by \$262 million. The difference represents the cumulative effect on earnings of Textron's off-balance sheet items, which can be adjusted to shareholders' equity and deferred taxes. The adjustments are as follows:

Reported 20X1 Total Assets	\$349,334 million
Additional Pension Assets	262
Adjusted 20X1 Total Assets	\$349,596
Reported 20X1 Total Liabilities	\$277,214 million
Additional Pension Liabilities	1,539
Impact on Deferred Taxes	(498) ⁽¹⁾
Adjusted 20X1 Total Liabilities	\$278,132

- (1) Based on the above, Textron's net liabilities increases \$1,277 million (\$1,539 million - \$262 million) due to the pension adjustments. Assuming that the firm's average tax rate was 39% in 20X1, deferred taxes would decrease by \$498 million (\$1,277 million times 39%). As such, shareholders' equity would increase by \$779 million (\$1,277 million - \$498 million)

Upon reviewing Textron's reconciliation of PBO and plan assets, an analyst can determine that the company's Japanese plan are highly overfunded. This has been due to the excellent return on plan assets that the plan has experienced from a booming Japanese stock market. These strong returns should not be expected to continue. Nevertheless, Textron should not anticipate having to make large cash outflows to fund its Japanese plans in the near future. On the other hand, Textron's U.S. plans are severely underfunded and will most likely require the company to make large cash contributions in the upcoming years, thereby adversely impacting its cash flow.

4. Calculating Pension Expense

The purpose is to calculate the pension or other post-retirement benefit expense (income) to be reported on a company's income statement based upon footnote and other disclosures under U.S.GAAP.

The table below shows how the pension expense components are reported in a company's earnings.

Textron, Inc
Components of Pension Expense for 20X1

	U.S Plans	Japanese plans
Service cost	\$ 534	\$ 860
Interest cost	1,512	2,370
Expected return on plan asset	(446)	(3,744)
Amortization of		
Unrecognized actuarial losses (gains)	2	82
Unrecognized prior service cost	0	428
Unrecognized net obligation	0	258
Other	2	4
Pension expense	\$1,604	\$258

The amortization of the following items: 1) unrecognized losses (gains), 2) unrecognized prior service cost, 3) unrecognized net obligation and 4) other, are the impact of the off-balance sheet items that are being brought into the financial statement over time. Textron is reporting \$1,604 million as pension expense for U.S. plan and \$258 million for Japanese plans. If an analyst were to ignore the amortized items, he/she would obtain the following measure of pension expense:

	U.S. Plans	Japanese Plans
Service cost	\$ 534	\$ 860
Interest cost	1512	2,370
Expected return on plan asset	(446)	(3,744)
Pension expense excluding amortization	\$1,600	\$(514)

By doing so, it can be ascertained that U.S. plans would have a pension expense of \$1,600 million while Japanese plans would have pension income of \$514 million.

However, this is not Textron's true economic pension expense because it deducts the expected, not the actual, return on plan assets. Using the actual return on plan assets, the following pension expense is obtained:

	U.S. Plans	Japanese Plans
Service cost	\$ 534	\$ 860
Interest cost	1,512	2,370
Actual return on plan asset	(309)	(7,034)
Pension expense excluding amortization	\$1,737	\$(3,804)

The pension expense for U.S. plans has not changed too much. Textron's Japanese plans, however, are much more economically profitable for the current year due to the strong return on plan assets.

5. Calculation Pension Expense: Operating and Net

The purpose is to calculate the underlying economic pension and other post-retirement expense (income) based upon disclosure on both an operating and net basis.

Analysts often decompose pension expense into operating and non-operating components to help understand the company's operating results. It is common to classify service cost as an operating expense and interest cost and return on plan assets are reclassified as non-operating income. As such, the adjustment for 20X1 would be:

	20X1	Percentage of Sales
Operating income	\$18,648	8.4%
Add: reported pension expense (\$1604+258)	1,862	
Subtract: service cost (\$534+860)	(1,394)	
Adjusted operating income	\$1,9116	8.9%

For Textron, the adjustment shown above increases the operating margin. However, if Textron had experienced a return on plan assets that exceeded service cost and interest cost (i.e., net pension income), the operating margin would have declined.

Textron's income before taxes (net basis) can be further adjusted to reflect all pension costs as follows:

	20X1	Percentage of Sales
Income before taxes	\$19,314	8.9%
Add: reported pension expense (\$1,604+258)	1,862	
Subtract: pension expense excluding amortization (\$1600-514)	(1,086)	
Adjusted income before taxes	\$20,090	9.2%

Note: The adjusted pension expense incorporates the expected return on plan assets, but does not include the amortization items. As such, Textron's profit margin increases when the adjustments are reflected. An analyst could have also opted to

use the firm's actual return on plan assets.

Finally, an analyst should review any changes in assumptions that Textron made during the year and their impact on pension expense. Particular attention should be paid to changes such as: 1) reducing the assumed rate of compensation growth which would result in an increase in earnings; 2) increases in the expected return on plan assets which would lead to higher reported earnings; 3) and an increase in the firm's discount rate which would serve to decrease pension expense and increase net earnings. Such change could make the firm to seem more profitable than it really is and adversely affect future earnings.

6. Selecting a Meaningful Measure of Pension Expense

Based upon the above, which pension expense should an analyst use? The answer is that it depends on the purpose of the analysis. **If an analyst is attempting to evaluate current performance he/she should probably use a figure that includes an adjustment for the actual return on plan assets.** As stated earlier, Textron's Japanese plans are over-funded due to strong market return. Most likely, it would be less useful for the analyst to use the reported financial statement expense to evaluate current performance because Textron has extensive off-financial statement items that are being amortized over future years.

To forecast future performance (e.g., future expenses and future cash flow), an analyst would probably be better served by using the firm's expected return on plan assets. Using the expected return on plan assets smoothes out the impact of market volatility. However, it leaves part of Textron's real position off its financial statements.

In summary, to compare a firm with its competitors and evaluate trends over time, an analyst should adjust a company's balance sheet and income statement pension amounts to incorporate the underlying economics before calculating financial ratios. Furthermore, the analyst should ensure that he/she understands the impact of assumptions (e.g., discount rate, compensation rate, inflation, etc.) on amounts reported on the financial statements and keenly observe and changes in these assumptions. Any changes should be reasonable relative to the economy and the industry as well as have a conservative effect on reported earnings. Analysts often decompose pension expense into operating and non-operating components to help understand the company's operating results. It is common to classify service cost as an operating expense and interest cost and return on plan



assets are reclassified as non-operating income. As such, the adjustment for 20X1 would be:

FINANCIAL STATEMENT ANALYSIS AND THE QUALITY OF EARNINGS

The first step in analyzing a company is to compile relevant, meaningful, consistent, and comparable data about the company's financial condition and operating activities. Unfortunately, the financial information that is based on GAAP may not be the best kind of data to use for this purpose. A much better starting point would be a set of adjusted financial statements where:

- The asset, liabilities, and equity on the balance sheet are restated to reflect fair market values, rather than historical costs
- The sales and expenses on the income statement are restated to a current basis, with the effects of nonrecurring items removed, so that the normalized, ongoing, sustainable earnings power of the company is revealed.
- The statement of cash flows is adjusted so that the operating, investing, and financing cash flows are allocated properly to measure the firm's free cash flow, that is required for valuation purpose, rather than relying on the reported statement that categorizes the sources of cash and the uses of cash from a corporate accounting perspective.

A. ADJUST THE BALANCE SHEET TO REFLECT FAIR MARKET VALUES (AS BEST AS POSSIBLE)

Adjusting the balance sheet requires the analyst to:

1. Restate marketable securities to their market value.
2. Adjust inventory on the balance sheet to a FIFO basis, which will approximate fair market value. If the company uses the FIFO method for valuing inventory, accept the stated inventory at face value. However, if the company uses the LIFO method, restate the inventory on the balance sheet to a FIFO basis by adding the LIFO reserve to the LIFO-stated inventory.

$$\text{Inventory (fifo)} = \text{Inventory (lifo)} + \text{Lifo Reserve}$$

3. Attempt to revalue the property, plant, and equipment to fair market value.
4. Adjust any investment accounts to their fair market values. If no market value, estimate the value by calculating the present value of the expected future cash flows that the investment will generate.
5. Estimate the value of the company's intangible assets. The procedure for determining their value is to calculate the present value of the cash flows

that the company can generate because of them.

6. All liabilities should be restated to their market values by computing the present value of the cash flows required to service them, using the current interest rates as the discounting factor.
7. Liabilities that are unlikely to be paid in cash or reversed should be eliminated.
8. Make the necessary adjustments for off-balance sheet liabilities by explicitly including them on the balance sheet.
9. The equity portion of the balance sheet should be adjusted, accordingly, to reflect the adjusted net worth of the company, measured at fair market value.

B. ADJUST THE INCOME STATEMENT TO REFLECT THE FIRM'S NORMALIZED EARNINGS

Typical income statement adjustments are:

1. Deal properly with nonrecurring events by eliminating them from a single year's consideration, but including them in looking at multi-year trends.
2. Eliminate income and expenses generated in the accounting process that have no real economic substance.
3. If there are any direct entries to shareholders' equity that did not flow through the income statement, adjust reported income to reflect the equity change where appropriate.
4. Adjust the cost of goods sold to reflect current costs, rather than historical costs.
5. Adjust the reported depreciation expense to reflect current cost depreciation. This can only be done by approximation, based on the fair market value of the property, plant, and equipment account on the restated balance sheet.
6. Make all adjustments to interest expense for off-balance sheet liability adjustment.
7. Analyze the earnings contributions from subsidiaries and affiliates to obtain their economic substance.
8. For cyclical firms, another complicating factor is that the ongoing earnings power should be based on the income that the firm should earn in a "normal" year during the course of a business cycle.
9. Adjust the reported income tax expense to properly reflect what the income tax would be if all of the above adjustments had been recorded in the financial statements.
10. The comprehensive income of the firm should also be computed, by component. These components include the reported net income of the firm, and the year-to-year changes in unrealized gains on marketable securities, the



minimum pension liabilities, the cumulative effect of currency translation, and other factors that cause the year-to-year value of the equity account to change.

C. ADJUST THE STATEMENT OF CASH FLOW TO PRODUCE A MORE MEANINGFUL FREE CASH FLOW MEASURE

The adjustment of statement of cash flow should not cause any change in the overall net change in cash. They should only reallocate the sources of the cash flow among the operating, investing, and financing components. The following are typical adjustments:

1. The period-to-period increase in capitalized interest is reported as an investing cash flow. It is best to treat this as part of regular interest expense. That is transfer the period-to-period increase in capitalized interest from being an investing cash flow to being an operating cash flow.
2. For analytical purpose, it is appropriate to reclassify the adjusted interest tax shield from being an operation cash outflow to being a financing cash outflow.
3. Cash flows from nonrecurring items should be separated from other cash flows to indicate that these cash flows are not ongoing
4. Investing cash flows should be separated into capital expenditures for property, plant, and equipment and other investments, both of which will sum to the reported investing cash flow.
5. Cash interest income received should be reclassified from being an operating cash inflow to being an investing cash inflow.
6. Once these adjustments are made, the ongoing, normalized free cash flow can be determined.

D. AN EXAMPLE OF FINANCIAL STATEMENT ADJUSTMENTS AND ANALYSIS

The purpose is:

1. Modify the balance sheet for assets and liabilities that are not recorded.
2. Modify the balance sheet for the current value of assets and liabilities
3. Determine and interpret the effect on reported financial results and ratios of changes in accounting methods and assumptions (e.g., inventory methods, depreciation methods, lease or purchase of long term assets)
4. Determine and interpret the effect on reported financial results and ratios of a company's choices of accounting methods and assumptions (e.g., depreciation methods or assumptions, employee benefit plan assumptions).
5. Determine and interpret the effect of balance sheet modifications and



earnings normalization on a company's financial statements, financial ratios, and overall financial condition.

The financial statements for Powder Explosives Corporation (POW) are presented below, along with additional information in the notes that follow. The objective is to adjust these financial statements to better reflect economic realities for POW and prepare revised ratios

POWDER EXPLOSIVES CORPORATION

Balance Sheet, December 31, 20XX

(000s)

Assets	
Cash and equivalents	\$92,000
Accounts receivables	64,000
Inventories	50,000
Total current assets	206,000
Property, plant & equip(net)	274,000
Goodwill	100,000
Total assets	580,000
Liabilities	
Accounts payable	\$55,000
Current portion of debt	10,000
Income taxes payable	3,000
Other current liabilities	5,000
Total current liabilities	73,000
Long-term debt	225,000
Deferred tax liabilities	15,000
Total liabilities	313,000
Equity	
Common stock	\$50,000
Retained earning	217,000
Total equity	267,000
Total liabilities and equity	580,000



Income Statement
Year Ended December 31, 20XX
(000s)

sales	\$450,000
COGS	250,000
Gross profit	200,000
Operating expense	75,000
Depreciation & amortization	25,000
Operating income	100,000
Interest expense	20,000
Pretax operating income	80,000
Income taxes	32,000
Net income from continue	48,000
Restructuring charge (net of tax)	12,000
Net income	36,000

Statement of Cash Flows
Year Ended December 31, 20XX
(000s)

Net income	36,000
Add: depreciation & amortization	25,000
Add: restructuring charge	12,000
Increase in payables	16,000
(Increase) in receivables	(12,000)
(Increase) in inventories	(8,000)
Cash flow provided from operating activities	69,000
Capital expenditures	(35,000)
Capitalized interest	(2,000)
Cash provided from investing activities	(37,000)
Net increase in debt borrowings	40,000
Dividend paid	(4,000)
Cash provided from financing activities	36,000
Net increase in Cash	68,000

Additional information (all amounts in 000s)

1. Inventories are valued on a LIFO basis and the LIFO Reserve is \$5,000
2. POW has numerous operating leases. The present value of these was \$50,000 at the beginning of 20XX and \$47,000 at the end of 20XX. At the



beginning of 20XX, the lease had an average term of 10 years and an average implied interest rate of 12%. The annual payments are \$8,850, which is recorded as a cost of goods sold on the income statement. Using the annual payment, we can project the present value of the leases to be approximately \$44,000 one year hence. In addition, the equipment being leased had a 10-year remaining life at the beginning of the year and no estimated salvage value. Straight-line depreciation is used.

3. POW capitalized interest of \$2,000 during 20XX. This capitalized interest increased the property, plant and equipment.
4. The restructuring charge is \$20,000 and is recorded net of the expected tax benefit of \$8,000. The charge is for future expenses related to a change in the way the firm is structured.
5. POW does not believe it will ever have to pay its deferred tax liability.
6. Goodwill amortization in 20XX was \$3,000
7. Based on studies done by a valuation firm, POW estimates the following fair market values:

Goodwill \$60,000

All other assets (except inventories) and liabilities have market values equal to their recorded values in the balance sheet.



Using the Information Provided Prepare an Adjustment Balance Sheet

POWDER EXPLOSIVES CORPORATION

Balance Sheet, December 31, 20XX

(000s)

	Reported	Adjustment	Adjusted
Assets			
Cash and equivalents	\$92,000	-	92,000
Accounts receivables	64,000	-	64,000
Inventories	50,000	5,000	55,000
Total current assets	206,000	5,000	211,000
Property, plant & equipment(net)	274,000	47,000	321,000
Goodwill	100,000	(40,000)	60,000
Total assets	580,000	12,000	592,000
Liabilities			
Accounts payable	\$55,000	-	55,000
Current portion of debt	10,000	3,000	13,000
Income taxes payable	3,000	-	3,000
Other current liabilities	5,000	-	5,000
Total current liabilities	73,000	3,000	76,000
Long-term debt	225,000	44,000	269,000
Deferred tax liabilities	15,000	(15,000)	-
Total liabilities	313,000	32,000	345,000
Equity			
Common stock	\$50,000	-	50,000
Retained earning	217,000	(20,000)	197,000
Total equity	267,000	(20,000)	247,000
Total liabilities and equity	580,000	12,000	592,000



Income Statement
Year Ended December 31, 20XX
(000s)

	Reported	Adjustment	Adjusted
Sales	\$450,000		450,000
COGS	250,000	(8,850)	241,150
Gross profit	200,000	8,850	208,850
Operating expense	75,000		75,000
Depreciation & amortization	25,000	5,000	
		(3,000)	27,000
Operating income	100,000	6,850	106,850
Interest expense	20,000	5,850	
		2,000	27,850
Pretax operating income	80,000	(1,000)	79,000
Income taxes	32,000	(400)	31,600
Net income from continue	48,000	(600)	47,400
Restructuring charge (net of tax)	12,000	(12,000)	-
Net income	36,000	11,400	47,400

Compute a company's normal operating earning

Example: Suppose Powder Explosives averaged \$2,280 of “nonrecurring” expenses per year over the past 10 years. What would POW’s reported earnings, normalized earnings, and earning power be for 20XX, based on this information and the adjusted income statement in the previous example?

Answer:

Reported Earning	\$36,000
Plus: Adjustments to Earning	11,400
Normalized Earnings	\$47,400
Less: Average “nonrecurring” Charge	2,280
Earning Power	\$45,120

Compute a company's comprehensive income

1. Comprehensive income

Under U.S. GAAP, comprehensive income is defined as the change in equity (net assets) from transactions and other events and circumstances from nonowner sources.

This means it includes all changes in equity during the period, except investments by or distributions to the firm's owners.

For an analyst, this definition can and should be expanded to reflect the amount of change in the adjusted equity. For POW, the adjusted equity for 20XX is 247 million and this amount should be compared to the prior year's adjusted equity. The amount of difference, after adjusting for investments (primarily the issuance of new shares) from equity holders and distributions (primarily dividends paid and the repurchase of shares) to equity holder, is the comprehensive income. This amount should be reconcilable to the adjusted income statement.

Statement of Cash Flows
Year Ended December 31, 20XX
(000s)

Net income	36,000	(2,000)	
		13,200	\$47,200
Add: depreciation & amortization	25,000		25,000
Add: restructuring charge	12,000		12,000
Increase in payables	16,000		16,000
(Increase) in receivables	(12,000)		(12,000)
(Increase) in inventories	(8,000)		(8,000)
Cash flow provided from operating activities	69,000	11,200	80,200
Capital expenditures	(35,000)		(35,000)
Capitalized interest	(2,000)	2,000	-
Cash provided from investing activities	(37,000)	2,000	(35,000)
Net increase in debt borrowings	40,000		40,000
Less after-tax cash interest paid		(13,200)	(13,200)
Dividend paid	(4,000)		(4,000)
Cash provided from financing activities	36,000	(13,200)	22,800
Net increase in Cash	68,000		68,000

Note: We do not need to make statement of cash flows adjustments for the income statement adjustments, as the cash flow to the firm is still the same.

2. The Effect of Financial Statement Adjustment on Key Financial Ratios

The purpose is as following:

- a. Determine and interpret the effect on ratios of changes in accounting methods and assumptions (e.g., inventory methods, depreciation methods, lease or purchase of long term assets)
- b. Determine and interpret the effect on ratios of a company's choices of

accounting methods and assumptions (e.g., depreciation methods or assumptions, employee benefit plan assumptions).

- c. Determine and interpret the effects of balance sheet modifications and earnings normalization on a company's financial ratios.

Financial ratios are most meaningful when they are computed from data that are economically sound. It is usually best to calculate financial ratios from balance sheet data that reflect the fair market value of assets, liabilities, and net worth and from income statement data that are based on current cost accounting. Therefore, it is preferable for the analyst to adjust the financial statements using techniques like the ones described in this example and base financial ratio calculations on the resulting adjusted data. The table below shows several financial ratios for POW based on the adjusted data. The latter are considered more meaningful than the former.

Ratio	Based on Reported Data	Based on Adjusted Data
Net profit margin	8.0%	10.5%
Inventory turnover	5.0x	4.4x
Current ratio	2.8x	2.8x
Total debt-to-equity	0.9x	1.1x
Return on common equity	13.5%	19.2%

QUALITY OF EARNINGS ANALYSIS

The quality of earning means one of two things:

1. Conservatism

- Conservative revenue recognition methods
- Use LIFO accounting for inventories and COGS
- High bad reserves relative to the size of the AR
- Use of accelerated depreciation with short useful asset lives
- Rapid write-off goodwill
- Minimal capitalization of expenses
- Expensing of start-up costs, R&D expenses, and so forth
- Use of the completed contract method
- Conservative pension and postretirement benefit assumptions
- Adequate provisions for contingencies
- Minimal use of off-balance sheet financing techniques
- Absence of nonrecurring gains
- Reported earning match cash flows
- Clear and adequate disclosures

2. Predictability

The earnings are predictable. However, be careful of this definition of earnings quality. If earnings are predictable because the firm's sales are not subject to large cyclical or random fluctuations, it has little operating leverage, and little financial leverage, this is positive. However, if earnings are predictable, because management manipulates them, so that the earnings trend is smooth, this should not be viewed positively.

Having good quality earnings (in the sense of the first definition) is considered a positive, because it tends to make the firm less risky. Furthermore, high quality earnings should command a higher price-earning multiple than lower quality earnings.

3. Accounting Practices that Should Be Examined Carefully to Assess the Quality of Earning

Analyst should be aware that **adherence to GAAP does not ensure** that the quality of earning is high. Following are some perfectly “legal” accounting practices that can cause the quality of earning to deteriorate:

a. Research and Development (R&D) Charge

R&D in progress write-offs arising from business acquisitions. In the years thereafter, however, any benefits from such research, such as the revenues generated by new product sale, accrue to the benefit of the acquirer and there is no need to match any research and development costs against the revenue. What the analyst should do, in this case, is **ignore the effect of the write-off at the time it is reported, keep the R&D intangible asset on the balance sheet, and amortize it to get a better picture of the company's true ongoing profitability.**

b. Restructuring Charges

Restructuring charge accounting. The costs associated with a restructuring are often expensed immediately. Typically, a liability reserve is set up. In the future year as the costs of the restructuring are paid in cash, the restructuring reserve liability is reduced. Even worse, if the company were to initially overestimate the amount of the restructuring expense, it could reverse the liability in the future by debiting the restructuring reserve and crediting income. These practices, at best, cause expenses that should be applied against future operations to be incurred immediately (often as part of a “big Bath” strategy); at worst, a company can conveniently overestimate the size of the restructuring reserve and discover this “error” only gradually, reversing the reserve over time

and generating a nice steady flow of (noncash) income for the future.

c. Stock Option

Companies can account for stock options given to employees as part of compensation package in one of two ways: the intrinsic value method or the fair market value method. Under the intrinsic value method, the reported compensation expense is the difference between the fair market value of the stock and the exercise price of the option at the time that both are known. Normally this is zero because the exercise price is usually higher than, or equal to, the price of the stock at the time the option is granted. Thus, no compensation expense is recognized on the income statement.

Under the fair market value, the value of the compensation is determined to be the value of the option based on some option-pricing model, such as the Black-Scholes model. This total compensation is then expensed, gradually, over the service period of the employees who received the options.

If the intrinsic value method is used, footnote disclosures must indicate how net income and earning per share would be affected if the fair market value method had been used.

Analysts should adjust for these affects in determining the true economic earnings of a firm.

d. Deferred of Costs

Some companies capitalize the costs as assets and amortize the deferred expenses over future periods. This can be an earning-smoothing technique. The analyst should be wary of companies that suddenly show an increase in capitalized costs on their balance sheet.

e. Deferred Taxes

Previously unrecognized deferred tax assets are recognized. The firm can increase its earning by recognizing deferred tax credits as assets and reducing reported income tax expense. **To find this type of manipulation, analysts must examine the company's deferred tax asset valuation allowance in the income tax footnote.**

f. Asset Impairment Charges

FASB 121 requires firms to write down the value of assets on their balance sheet whenever the present values of the projected cash flows to be generated by those assets are less than their book values. Unfortunately, this gives management a great deal of discretion because it is management who must make

the cash flow estimates. Analysts can adjust for these effects by restating the balance sheet to reflect what it would look like. Once the assets are written down, however, depreciation and amortization expenses are reduced accordingly for all future years. This causes the future earnings to be much better. Analysts can adjust for these effects by restating the balance sheet to reflect what it would look like if these write-downs had not occurred and continue to depreciate or amortize the assets on a regular basis over future years.

g. Accounting for Consolidation

Currently, the equity method of accounting is widely used for a variety of purposes that tend to distort the true financial picture. The equity method permits companies to report all their share of a subsidiary's income as part of their income, without having to report the assets or liabilities of the subsidiary on their balance sheet. It would be better if companies had to use the consolidation method so that all of the financial data of the subsidiary would be incorporated with the parent, giving a better picture of the overall enterprise's financial condition and operating performance.

With respect to subsidiaries, analysts should examine two other issues:

- (1). Reported gains or losses on the sale of stock of an affiliate or subsidiary that the company still significantly influences or controls after the sale should be questioned.
- (2). Minority interest is treated as a liability on the balance sheet and as an expense on the income statement. In analyzing the financial condition and operating performance of the company, these items should be treated as part of equity and income, respectively.

h. Fair Value Accounting

Valuations shown on the balance sheet are mostly recorded on the basis of historical cost. It would be better if they were recorded at fair market value with the increases and decreases in the resulting equity being reported as part of net income. However, most of these effects elude the analyst because of a lack of information required to make the adjustment.

4. Common Factors that Cause the Quality of Earnings to Decline

- a. Adopting less conservative accounting principles, estimates, or practices.
- b. Engaging in special, one-time transactions to generate gains.
- c. Accelerating or decelerating sales activities.



- d. Using reserves to manipulate the earnings trend.
- e. Adopting new accounting standards early or later as needed.
- f. Manipulating discretionary costs.
- g. Manipulating the cash-flow to reported income gap by building up or depleting AR and inventories.
- h. Relying on sources of earnings that are not part of a company's principal business activities.
- i. Capitalizing expenses as deferred charges of various sorts.
- j. Major acquisitions accompanied by inadequate disclosures that make it impossible to compare earnings with previous periods.
- k. Adopting a new business strategy without making the appropriate adjustments to the accounting methods used.
- l. Writing off relatively new investments.
- m. Rising debt levels that are reaching probable limits.
- o. Slowdowns in finished goods inventory can suggest production or marketing problems

Appendix

Joliet Corp pension footnote is reproduced below. All amounts are in million.

Defined Benefit Plan on December 31:

		20X2		20X3
Actuarial present value of benefit obligation:				
Vested		583		682
Nonvested		66		110
Accumulated benefit obligation		649		792
Effect of projected compensation increase		341		528
Projected benefit obligation (PBO)		990		1320
Plan asset at market value		1650		1892
Plan assets in excess of (less than) PBO		660		572
Transition asset (liability)		638		594
Deferred actuarial gains (losses)		-44		-220
Deferred investment gains (losses)		165		275
Prior service gains (costs)		-66		-55
Accrued pension asset (liability)		-33		-22
Components of Pension Cost				
Service cost		148.50		175.45
Interest cost		66		69.30
Expected return on plan assets:				
Actual return on plan assets	330		258.50	
Less: amount deferred	198	132	110.00	148.50
Amortization of transition investment		-44		-44
Amortization of deferred investment and Actuarial losses (gains)		-		-
Amortization of prior service costs		11		11
Reported Pension Expense		49.5		63.25
Other Data: assumptions				
Discount rate		7.0%		6.0%
Wage Growth rate		3.5%		3.0%
Average Employee Remaining Service Life		15 years		15 years

Approximately how much did the company contribute in 20X3?

- a. \$52.25
- b. \$63.25



- c. \$70.00
- d. \$74.25

Approximately how much in benefits were paid from the pension fund in 20X3?

- a. \$74.25
- b. \$16.50
- c. \$167.75
- d. None of the above

Approximately how much were prior service costs due to plan amendments in 20X3?

- a. \$0
- b. \$11.00
- c. \$22.00
- d. 33.00

Approximately what was the amount of actuarial gains (losses) due to changes in actuarial assumptions in 20X3?

- a. -\$154.00
- b. -\$63.25
- c. -\$69.30
- d. \$175.45

How did the decrease in discount rate from 7.0% in 20X2 to 6.0% in 20X3 affect the PBO and ABO

- | | PBO | ABO |
|----|----------|----------|
| a. | Decrease | Decrease |
| b. | Decrease | Increase |
| c. | Increase | Decrease |
| d. | Increase | Increase |