The Pension Plan of Bethlehem Steel (2001)

(We are) deeply concerned that there is a pension crisis in America that threatens the financial strength and solvency of many corporations, cities, states and even our federal government.

—Ryan Labs, Inc.[1] newsletter

Anita Cavell grabbed the pension reports she photocopied in Baker Library—many of which, like the above, foretold of impending doom—and ran off to her afternoon class at Harvard Business School (HBS). Although she was just 28 years old and decades from retirement, Cavell suddenly developed a keen interest in pensions. It was October 16, 2001—the day after Bethlehem Steel, her father's pension plan sponsor and his employer for 36 years, filed for bankruptcy protection. Cavell's father planned to retire within months and was counting on Bethlehem Steel for annual pension income roughly equal to 40% of his current yearly wages. It was hard-earned income he now feared he might never see.

Under normal circumstances, Cavell thought, her father's fears, probably shared by many of Bethlehem Steel's 100,000 current and future pensioners, might have attracted public concern. But circumstances were anything but normal. The world was rapt with the monumental tragedies of Tuesday morning, September 11, 2001, and that day's continuing aftermath around the world. An already fragile U.S. economy reacted dramatically to the news of that day. All U.S. financial markets closed indefinitely on September 11 for the first time since World War II. When markets reopened September 17, the Dow Jones Industrial Average lost 7% of its value in one of the largest one-day losses in its 105-year history. Similarly, the broader S&P 500 index closed down 5% on September 17. Confirming signs of economic weakness, the Federal Reserve cut its benchmark U.S. short-term interest rate on October 3, for the tenth time in 2001. This "discount rate" was slashed to 2.0%, a rate unseen since 1958. Understandably, Bethlehem Steel's news on October 15 did not capture national attention.

Cavell knew she couldn't do much about the condition of the markets or of Bethlehem Steel. However, she decided to focus on something she *could* do—help her father—by evaluating the financial outlook for her father's retirement income.

[1]Ryan Labs was a New York City–based registered investment advisor specializing in asset management, liability consulting and research, and trademarked a pension fund Liability Index. More information is available at <http://www.ryanlabs.com>.

Dean's Research Fellow Akiko M. Mitsui prepared this case under the supervision of Professor Peter Tufano and Boston University Professor Zvi Brodie. This case was developed from published sources and uses a disguised protagonist. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

Employment-Based Pensions in the United States

Historical Background

Pensions were designed to provide incomes to retired workers. Government-sponsored pensions were the most prevalent form of pensions worldwide. In several countries such as the United States, United Kingdom, the Netherlands, Japan, and Switzerland, employer-sponsored pensions for former workers played important roles in supplementing government pensions. (See Exhibit 1, Samples of Worldwide Pension Structures.)

In the United States, the government-sponsored Social Security program was not introduced until 1935. However, employer-sponsored pension programs dated back to the 19th century and supported retired public workers such as teachers, police officers, and fire fighters. American Express Company established the first U.S. corporate pension plan in 1875, and was followed by utilities, banks, railroads, and manufacturing companies.

Government tax and income policies fostered the growth of private pensions in the early- and mid-1900s. Since the 1920s, a corporation could generally deduct its contributions to a pension fund from taxable income, and assets in a pension fund could grow tax-free. In the 1940s, pension plans enabled employers to effectively increase employee compensation without violating the wage and price controls in effect during World War II.[2] After World War II, organized labor bargained for private pensions, starting with a 1946 grievance filed by the steelworkers' union against Inland Steel.

In the latter half of the 1900s, the government introduced funding and reporting standards for private pensions. In addition, insurance from the Pension Benefits Guaranty Corporation (PBGC), a federal agency, was mandated for certain types of pension plans sponsored by companies.

In 2000, 67 million U.S. workers, or 45% of the workforce, participated in employer-sponsored pension plans.[3] Financial assets of employment-based pension funds were substantial, when compared both with the market values and assets of individual companies (see Exhibit 2), and with total financial assets in the United States. For instance, out of the $6.1 trillion total value of pension assets in the United States as of September 30, 2001, $2.7 trillion was invested directly in corporate equities, an amount that represented almost one-fourth of the $11.9 trillion market value of U.S. corporations at that date.[4] (See Exhibit 3, U.S. Pension Assets by Fund Type and Asset Category.)

Pension Plan Terminology

A pension *plan* was a contractual arrangement under which benefits were paid to retired workers. An employer who committed to pay pension benefits was a plan *sponsor.* A current or former employee who was eligible for benefits was a plan *participant.* A pension *fund* or *trust* was an entity that was legally separate from the employer, and which held and invested funds to pay benefits to participants.

Defined Benefit (DB) Plans

In a defined benefit (DB) plan, the plan sponsor committed to make fixed monthly payments, similar to annuities, to plan participants (and often to surviving spouses) from retirement until death. For each year of employment, participants earned future

[2]Richard M. Steinberg, Ronald J. Murray, and Harold Danker, *Pensions and Other Employee Benefits: A Financial Reporting and ERISA Compliance Guide,* 4th ed. (New York: John Wiley & Sons, 1993), p. 4.

[3]U.S. Census Bureau and Bureau of Labor Statistics, *Annual Demographic Survey March Supplement Table NC8: Pension Plan Coverage of Workers by Selected Characteristics: 2000* (November 2001).

[4]Federal Reserve System, *Flow of Funds Accounts 3rd Qtr. 2001* Tables L.1, L.119, L.120, L.213 (Washington: December 7, 2001).

benefits according to a plan formula that typically was a function of salary and length of service, and subject to a vesting schedule.[5] The benefits that participants earned by any given date were the sponsor's long-term liabilities, which linked DB plans intimately to corporate financial policy. Sponsors were obligated to pay benefits earned by a vested employee after the employee reached normal retirement age, whether the employee retired from the sponsor firm or left the firm before retirement due to job change or termination. A discount rate and other assumptions (such as mortality and retirement ages) were applied to pension liabilities to estimate their present value.

DB plans operated as *funded* plans or as *pay-as-you-go* plans. In a funded plan, the sponsor regularly contributed funds to a legally separate pension trust so that the trust's assets would equal or exceed the present value of the plan's liabilities. While the trust assets served as collateral for the firm's pension liabilities to participants, gains and losses on these assets did not affect participants, since their benefits were defined. Investment performance did affect the sponsor. If fund assets grew in value, the sponsor's next contribution to match the plan's liabilities would decrease and vice versa.

Alternatively, defined benefit plans operated as *pay-as-you-go* plans. In these plans, sponsors simply paid pension benefits to participants from funds available when the payments were due.

Defined Contribution Plans[6]

In contrast to a defined benefit plan, in a defined contribution (DC) plan the sponsor did not promise retirees pre-calculated benefits, but instead arranged for pre-determined contributions to individual employee accounts. Depending on the plan, the contributions to employees' accounts were made by employees themselves and/or by the employer. An employee usually had some choice of how to invest funds in his or her individual account, and gains and losses were reflected in the account balances. If an employee resigned from the company or was terminated, the employee's contributions to the individual account, plus any gains or losses, were still owned by the employee. Any employer contributions to the individual account were also available to the employee, subject to vesting rules. At retirement age, employees received their final account balances. Thus, a DC plan, by design, was always "fully-funded," which meant that the pension fund's assets equaled its liabilities. Retirees generally received final account balances as lump sums.

Almost 75% of DC plan assets at year-end 2000 were in 401(k) plans, which were named after the section of U.S. tax law that permitted employees to contribute a portion of their wages to their individual accounts on a pre-tax basis. Corporations often made tax-deductible contributions to 401(k) accounts to match a portion of employees' contributions. From the introduction of 401(k) plans in the early-1980s through 2001, DC plans accounted for most of the growth in new privately sponsored retirement plans. (See Exhibit 4, Number of Privately Sponsored DB, DC, and 401(k) Plans, 1975–2000.)

[5]Vesting referred to the time period that an employee had to work with the pension plan sponsor before the employee had a right to claim benefits that were earned. U.S. tax laws required employees to be eligible for 100% of their earned benefits after five to seven years of service. A formula for a typical defined benefit plan might have provided 1.5% of an employee's average income over the final five years of employment for each year of employment with the sponsor, with 100% vesting after five years and pension payments starting at age 65. Assuming that a 45-year-old employee with 20 years of service with the sponsor resigned, and that this person's average annual salary over the last five years was $100,000, in 20 years, at age 65, this fully vested employee would receive annual defined benefit pension payments of 1.5% × 20 (service years) × $100,000, or $30,000 per year until death.

[6]Technically speaking, DC plans were not pension plans, but were retirement savings plans.

Regulation and Valuation of Basic Corporate DB Plans

Legally, corporations were not required to provide pensions to employees. If offered, however, pension plans and sponsoring firms were subject to complex rules and regulations that differed according to plan type. The following discussion focuses on rules for basic DB plans sponsored by corporations in the United States. Pension plans for state or local government employees were not subject to these rules. In addition, DC plans and plans that offered "non-basic" benefits, such as healthcare or supplemental executive benefits, were subject to different rules.

Employee Retirement Income Security Act of 1974 (ERISA)

In 1963, the Studebaker auto company shocked the American public when it shut down without enough money to pay the pensions earned by the company's 4,000 workers. Reacting to this and other similar instances, the U.S. Congress passed the Employee Retirement Income Security Act (ERISA), which was enacted in 1974. ERISA fundamentally changed the way in which corporations were required to operate pension plans and introduced several forms of protection for pension plan participants.

Funding Requirements

ERISA required basic-benefit corporate DB plans to operate as fully funded plans, so that collateral was available to pay retirement benefits. ERISA granted such plans favorable tax treatment, but applied heavy penalties against sponsors with underfunded plans.

Officially, there were no limits to a sponsor's contributions to its pension fund. However, all assets in a pension trust were earmarked solely to pay pension benefits, even any assets that exceeded liabilities. The only way an employer could use excess pension assets for non-pension use was to terminate the plan, pay all accrued benefits, and revert excess cash back to the company. Indeed, in the early 1980s, due to strong equity market performance and high interest rates, several corporate pension plans became significantly overfunded, and corporate raiders in some cases acquired companies, terminated overfunded pension plans and paid off the accrued benefits to reclaim excess pension cash. In one celebrated case, the takeover of The Great Atlantic and Pacific Tea Company, Inc. (which owned the A&P grocery chain) appeared to be executed solely to tap into A&P's overfunded pension plan.[7] Such takeovers became so notorious that a blockbuster 1980s Hollywood movie, *Wall Street,* was based on the "greed is good" character Gordon Gekko in just such a pension/takeover scheme. From 1980 to 1986, almost 1,500 defined benefit pension plans with assets of over $36 billion were terminated. Companies recaptured $19 billion from these plans.[8]

PBGC Insurance

In addition to introducing minimum funding requirements, ERISA further protected DB plan participants by creating a new government agency, the Pension Benefit Guaranty Corporation (PBGC). PBGC insurance became mandatory for all basic-benefit DB plans, which were also the only plans eligible for PBGC insurance. In some ways, PBGC was similar to another government agency, the Federal Deposit Insurance Corporation (FDIC), which guaranteed deposits at U.S. banks. When an overfunded insured plan was terminated, all benefits earned by employees were paid by the plan and

[7]Lynn Asinov, "Excess Pension Assets Lure Corporate Raiders," *The Wall Street Journal,* September 11, 1985.

[8]Marcia Parker, "Goodyear Using Pension Surplus to Reduce Debt," *Crain's Cleveland Business,* September 18, 1998.

PBGC had little to do with it. However, upon termination of an underfunded insured plan, PBGC became the trustee of the plan by taking the plan's assets and paying the participants' benefits when they retired. Upon retirement, participants of PBGC-trusteed plans were guaranteed to receive the benefits they earned as of the plan's termination date. However, the benefits were subject to a limit of $40,705 per year per participant for plans taken over by the PBGC in 2001, or whatever greater limit was possible from the plan's assets. In ERISA's early years, even if a sponsor company with the ability to fully fund its underfunded, insured plan decided to terminate the plan, PBGC took over and made up the deficits.

PBGC charged yearly insurance premiums to plan sponsors and did not use federal tax dollars for operations. PBGC charged sponsors a flat-rate $1 per participant insurance premium in 1974 when PBGC was created. The flat rate was changed to $2.60 in 1979 and to $8.50 in 1986. From 1987, premiums included flat-rate and variable-rate charges. In 2001, premiums were $19 per plan participant, plus $9 per year for every $1,000 that a plan's liabilities exceeded its assets. PBGC's premium income did not always leave PBGC in strong financial shape relative to its expenses and possible future plan takeovers. (See Exhibit 5 for selected PBGC data and Exhibit 6 for historical PBGC claims.)

Revised Termination Criteria for PBGC-Insured Plans

In response to perceived abuses[9] in terminations of both overfunded and underfunded insured plans, the government introduced restrictions on plan terminations in 1986. To discourage terminations of overfunded insured plans, an employer was required to pay a 10% penalty tax on money reclaimed from the plans. (Reclaimed pension assets were also added to the sponsor's gross income subject to regular income tax.) In addition, starting in 1987, sponsors could not take tax deductions for contributions to plans that were over 150% funded.[10] Terminations of overfunded pensions continued unabated, however, and the penalty tax on reversions was increased to 50% in 1990.[11]

The government also introduced restrictions on terminations of underfunded plans. Under the new rules, an underfunded insured plan could not be terminated unless the sponsor company had filed for bankruptcy or the PBGC decided that the plan caused financial distress to the sponsor. After termination, the sponsor was technically liable to the PBGC for the plan's full unfunded liability, plus interest.[12] As a practical matter, however, the PBGC recovered only a very small fraction of the unfunded liabilities of underfunded, terminated plans.[13]

[9]For instance, LTV Steel Corp. filed for bankruptcy protection in 1986 and terminated its insured pension plans, leaving PBGC with over $2 billion of LTV's unfunded pension liabilities. Then LTV created new pension plans that were similar to the terminated plans. In 1990 the U.S. Supreme Court ruled that LTV staged the bankruptcy to pass its onerous pension liabilities on to PBGC. The Court required LTV to restore the original plans and take responsibility for $1.8 billion of remaining unfunded liabilities. LTV emerged from bankruptcy in 1993 and filed for bankruptcy protection again in 2000.

[10]The tax-exempt limit increased to 155% in 1999, 160% in 2001, 165% in 2002, 170% in 2003, and would be repealed in 2004.

[11]Under some circumstances, such as for a company that is in Chapter 7 bankruptcy liquidation or for a company that replaces the terminated plan with a new one, this 50% penalty tax on reverted assets could be reduced to 20%.

[12]To collect an unfunded liability, PBGC could assert a tax lien against the company for up to 30% of the company's net worth. Net worth was measured by PGBC as of any date within 120 days prior to the plan termination date, and could be based on the sponsor's equity market value or any other reasonable measure of net worth as determined by PBGC. Certain liens, such as those for taxes and unpaid wages, are priority claims under U.S. bankruptcy law, and must be paid in full before creditors can collect general unsecured claims.

[13]PBGC Corporate Policy and Research Division.

Fiduciary Duties and Asset Management

ERISA required a sponsor to appoint fiduciaries to control and manage pension plan operations, administration, and assets. A fiduciary could be an executive of the sponsor company, but in the role of fiduciary, a fiduciary's legal duties were to:

- Manage assets *solely in the interest of participants* and according to the plan document, and
- Diversify plan assets to minimize risk of large losses from any one investment, considering asset risk/return ratios, and the portfolio's liquidity relative to cash flow needs of the plan.

ERISA did not fully specify the requirements for either of these fiduciary duties. However, one notable specification required that no more than 10% of a pension fund's assets could be invested in the stock and other marketable securities of the sponsor company.[14] In aggregate, U.S. DB pension funds allocated approximately 55% of their assets in equities and mutual funds, 29% in bonds, and 16% in other assets at year-end 2000. (See Exhibit 3 for more details.)

Reporting, Disclosure, and Valuation Protocols

ERISA subjected DB plans to extensive reporting and disclosures to several government agencies, including the U.S. Department of Labor (DOL), PBGC, and the Internal Revenue Service (IRS). ERISA also required sponsors to release annual reports to employees about their plans. Separately, FASB (Financial Accounting Standards Board) accounting guidelines required sponsors to report pension costs, pension income, and net pension assets/liabilities in the company's annual financial reports. DOL, IRS, PBGC, and FASB each applied different methodologies for valuing assets and liabilities. These methodologies were notoriously complex, but a few basic protocols are highlighted below.

Asset Valuation

Pension assets were recorded at fair market value, the price at which assets could be exchanged between willing buyers and willing sellers. Alternatively, assets were valued at actuarial value, or 80–120% of fair market value. Finally, FAS 87, the FASB accounting standard required for company balance sheets and income statements, permitted the use of market-related value. Market-related value either was fair market value or was based on a smoothed average of fair market values over the prior 2–5 years. Market-related value also permitted smoothing over time of large yearly losses or gains on pension assets. Market-related value was compared with plan liabilities to calculate a pension plan's funding status and expenses on company financial statements, which partially protected reported corporate results from volatile returns on pension assets.

Liability Valuation

The valuation of pension plan liabilities was essentially a two-step process—calculation of future cash payments and discounting them to present value. Numerous assumptions, which were determined by an actuary specifically for each pension plan, were used to estimate timing and amounts of payments. For example, *timing* of cash flows was affected by average participant age, the employee-to-retiree ratio, average retirement age, and retiree life expectancies. The *amounts* of future cash flows were affected by employee turnover and wage increases.

Liabilities were also valued by separately estimating cash flows as if the plan would terminate or as if the plan would continue indefinitely. On a terminating basis, often

[14]DC funds such as 401(k) plans and employee stock ownership plans were not subject to this limit.

called the accumulated benefit obligation (ABO) method, liabilities included only those benefits already earned by employees. Liabilities measured for an ongoing plan, often called the projected benefit obligation (PBO) method, additionally considered projected wage increases and future years of service expected from employees.

The second step in pension liability valuation—the selection of a discount rate—was perhaps the most debated, most important, and least standardized factor affecting pension valuations. (See Exhibit 7.) Some discount rates were based on 30-year U.S. Treasury bond rates, a practice that caused uproar in the pension industry in late 2001 after continued declines in these rates. (See Exhibit 8, Selected Market Data.) Some argued that discount rates should reflect market rates at which plan liabilities could be settled, i.e., a "settlement rate." To settle liabilities, firms often bought long-term annuities that provided cash flows equaling future pension payments from highly rated insurance companies. The rates on such annuities were similar to long-term, AA-rated corporate bond rates, which many companies thus used to approximate settlement rates.

In addition to the debate over Treasury rates or market settlement (long-term AA-rated corporate bond) rates, agencies differed over whether to apply recent rates or historical average rates.

The U.S. Steel Industry and Bethlehem Steel

The 1997–2001 American Steel Crisis

U.S. market conditions following the September 11, 2001, terrorist attacks and valuation techniques required for DB pension plans negatively affected all DB plan sponsors. However, the situation was especially sensitive for traditional U.S. steel companies, which already were distressed, typically had large DB pension plans, and whose market demand was highly correlated with economic activity.

The American steel crisis was triggered in 1997, after financial turmoil in Asia and slowing world economies resulted in dramatic reduction in steel demand. Global overcapacity and overproduction led to the lowest world steel prices in 20 years toward the end of 2001, of approximately $200 per ton for basic traded hot-rolled band (a basic flat-sheet product). These factors, combined with the strength of the U.S. dollar, high labor costs, and aging equipment, made it difficult for U.S. steel producers to compete in the domestic market against lower-priced imports. An influx of steel from countries such as Russia, Japan, The Republic of Korea, Brazil, and Canada resulted.[15]

Major integrated U.S. steel producers, such as U.S. Steel and Bethlehem Steel, also faced domestic competition from newer technologies. Minimills, which emerged in the 1960s, used scrap metal and non-unionized labor to remain competitive with import prices. Furthermore, the older, integrated steel companies incurred "legacy costs"—contractual obligations to pay pension and health benefits to retirees. These obligations became part of union contracts long before minimills emerged as a competitive threat. Few, if any, minimills incurred such costs.[16]

From January 1, 1999, to October 15, 2001, 24 U.S. steel companies, responsible for 35 million out of 124 million tons of total U.S. steelmaking capacity and 53,000 employees, filed for bankruptcy protection.[17] In October 2001, the U.S. steel industry employed just over 200,000, the lowest number ever recorded by the U.S. Bureau of Labor

[15]U.S. Department of Commerce, *U.S. Industry and Trade Outlook 2000: Steel Mill Products* (2001).

[16]Standard & Poors, *Industry Surveys, Metals: Industrial* (July 12, 2001).

[17]OECD, "Follow Up Special Meeting at High Level on Steel Issues, U.S. Government Report" (Paris: December 17, 2001); United Steelworkers of America, "Steel Companies Filing for Bankruptcy, 1997–2001" (December 10, 2001).

Statistics. Employment totaled 515,500 when data was first collected in 1939; the number peaked at 726,100 in 1953.[18]

Industry Response

In response to the domestic steel crisis, the U.S. industry sought trade protection, encouraged worldwide negotiations to cut capacity, and attempted to consolidate. All three strategies gained momentum in late 2001. The U.S. International Trade Commission was expected to recommend that President Bush impose tariffs on several imported steel products. The world's steelmakers agreed to meet in Paris by year-end to discuss management of global steel oversupply. Finally, it was rumored that U.S. Steel might propose to take over three bankrupt, integrated steelmakers if the government paid for unfunded portions of the firms' pension and retiree health plans. While bankrupt U.S. steel firms were responsible for supporting 600,000 retirees, their unfunded pension and retiree health plan liabilities were estimated to be $3 billion to $12 billion.[19]

Bethlehem Steel

Bethlehem Steel Corporation (NYSE:BS) was the second largest U.S. integrated steel producer with $4.2 billion in sales and approximately 14,700 employees in 2000. The company was a symbol of the success and subsequent troubles of the integrated steel industry in the United States.

The company began as Saucona Iron in Bethlehem, Pennsylvania, in 1857, rolling iron railroad rails. It was incorporated in 1904 and was renamed Bethlehem Steel.[20] The company's profile in 2001 highlighted its long history:

> For 97 years, Bethlehem Steel has provided the steel to build, transport, and defend America. Its products have produced enduring structures such as the Golden Gate Bridge, U.S. Supreme Court Building, Chicago's Merchandise Mart, and much of New York City's skyline. A major producer of armaments for the military, Bethlehem Steel's workforce in World War II numbered about 300,000. In addition to its steel plants, Bethlehem had shipyards on both U.S. coasts that delivered a ship a day (1,121 in total) to the Allied war effort. The Company's support of the military continues today as it was the sole supplier of armor plate steel for the repair of the USS Cole.

Bethlehem Steel had been a component of the S&P 500 and its forerunner since 1918. However, the steel crisis greatly affected the firm, which had the highest labor costs in the industry. Despite attempts to streamline costs, the souring market conditions, an eroding financial position, and additional loss of clients after the September 11, 2001, tragedies forced Bethlehem Steel to file for bankruptcy protection on October 15, 2001. With 11 million tons of steelmaking capacity at stake, Bethlehem Steel became the largest of the bankrupt U.S. steel companies. The stock price closed at $8.38 at year-end 1999 but only at $0.22 on October 16, 2001. The company's equity market value fell from $1.1 billion to $29 million over the same period, which resulted in Bethlehem Steel's elimination from the S&P 500 index, and threatened its listing on the New York Stock Exchange. One issue of the company's bonds, which traded on September 14, sold at 31% of face value.[21]

Bethlehem Steel's pension and retiree health plans appeared to play a large role in the company's condition. Chairman and CEO Robert S. Miller commented: "The major

[18]Standard & Poors, *Industry Surveys, Metals: Industrial* (July 12, 2001).

[19]Len Boselovic, "U.S. Steel Pushes Tariffs to Fund Retiree Liabilities Pitch Comes Same Day Allegheny Technologies Lays Off 520 Workers," *Pittsburgh Post-Gazette,* December 11, 2001; and Leslie Wayne, "Parched, Big Steel Goes to Its Washington Well," *The Sunday New York Times,* January 20, 2002.

[20]Bethlehem Steel Corporation, "Corporate Profile," <www.bethsteel.com> (December 11, 2001).

[21]Bloomberg.

issues facing Bethlehem . . . include . . . unfair trade practices and relatively high levels of steel imports. We are also grappling with high employment costs due to significant legacy obligations and productivity issues."[22]

The company's employment costs were predicted to be 37% of sales in 2001. Employment costs included $48 per ton of steel in legacy costs for pension and retiree health plan expenses out of a total average company production cost of $484 per ton of steel.[23] The bankruptcy filing listed $4.2 billion in company assets, $4.5 billion in liabilities, and negative stockholders' equity of $300 million at September 30, 2001. Liabilities included $540 million of unfunded pension liabilities and $1.8 billion of unfunded retiree health plan liabilities. (The health plan was not insured by PBGC and, like most retiree health plans, was a pay-as-you-go plan.) The assets of Bethlehem Steel's pension plan were invested approximately 70% in equities and equity mutual funds as of year-end 2000.

The numbers reported in the bankruptcy filing were calculated using FAS 87 guidelines. Using market interest rates and fair market asset values as of September 30, 2001, Bethlehem Steel estimated unfunded pension liabilities to be $1.85 billion and unfunded retiree healthcare liabilities to be $3 billion. With these estimates, the company's total liabilities as of September 30 would have ballooned to $6.75 billion, increasing negative net worth to over $2.5 billion. The September 30 deficits existed despite the company's claim that "it has always met or exceeded the minimum pension funding requirements under ERISA."[24] (See Exhibit 9, Selected Financial Data, Bethlehem Steel, and Exhibit 10, Estimated Data, The Pension Plan of Bethlehem Steel and Subsidiaries.)

The company noted that it expected to continue operating the health and pension plans while under Chapter 11, but that if the company filed for Chapter 7 liquidation, it would be likely that the plans would be terminated.[25]

Anita Cavell

It was time for Cavell to "crack the case." She reflected upon one of her many readings, in which four U.S. Congressmen warned the U.S. Treasury Secretary of the effects of current market conditions on pension plans. "The historic low rate of 30-year Treasury bonds . . . [has] potential to create a major crisis for defined benefit [pension] plan sponsors and their employees," the Congressmen wrote. From this comment and others, Cavell knew she would have to apply current interest rates, and other current market conditions, to value her father's pension plan.

Cavell was also deeply engaged in thought about some of the broader issues surrounding defined benefit pensions, a topic that she had previously considered to be rather dull. Was it the economic condition of the company that threatened her father's pension plan, or vice versa? What was the effect of all the ERISA rules—funding, PBGC insurance, reporting, asset management—on the current status of her father's pension plan? Was pension funding an issue specific to Bethlehem Steel, or was it possibly part of a much broader industry, national, or international matter? If she were the CEO of Bethlehem Steel, what could she do to protect both the interests of the company shareholders and the interests of its many loyal employees?

[22]Robert S. Miller, "Letter to Shareholders of Bethlehem Steel," October 15, 2001, <www.bethsteel.com> (December 10, 2001).

[23]Bethlehem Steel, 8-K, 10-K, and financial reports. 10-K reports filed March 9, 2000, and January 31, 2001. Available from Securities Exchange Commission,<http://www.sec.gov> (December 14, 2001).

[24]Bethlehem Steel, "Managing Legacy Costs," 2000 Annual Review <www.bethsteel.com> (December 14, 2001).

[25]Bethlehem Steel, "Employee Benefit Q&A," November 2 and December 10, 2001, <www.bethsteel.com> (December 14, 2001).

EXHIBIT 1 Samples of Worldwide Pension Structures[a]

Sources: Colin Gillion, John Turner, Clive Bailey and Denis Latiulippe, "*Social Security Pensions: Development and Reform*" (Geneva: International Labour Organization, 2000); HSBC, "Strategy Ideas, Pension Problems: A Global Special," November 26, 2001; International Labour Office, "Social Security: Issues, Challenges and Prospects," International Labour Conference, 89th Session 2001; OECD, "Private Pension Systems: Regulatory Policies," Working Paper AWP 2.2; OECD, "Private Pension Systems and Policy Issues," Private Pensions Series No. 1; OECD, "Financial Market Trends No. 73," June 1999; OECD, "Institutional Investors Statistical Yearbook 2001"; Eurostat, "Statistics on Pension Funds" Theme 4 - 29/2001; Federal Reserve Board, "Flow of Funds Third Quarter 2001," December 7, 2001; U.S. Social Security Administration, "Social Security Programs Throughout the World, 1999"; Casewriter interpretations.

	Government Social Security Pensions			Occupational/Employer Sponsored Pensions				Pers. Savings
Country	Basic Pension Benefits Are Based on Prior Wage or Are Flat-Rate for All Workers?/ Normal Retirement Age	Average Pension Benefit as a % of Disposable Income in 1992 or Average Pension Benefit as a % of Average Earnings in 1996	Employee + Employer Contributions to Government Pensions as % of Labor Costs, 1998	Private Employer-Sponsored Pension Plans	Occupational Pensions Are Primarily DB or DC?/Is Pre-Funding Required or Can Plans Be Pay-As-You-Go?	Financial Assets of Occupational Pension Funds 1999 (US$ Billion)/ Pension Assets as % of GDP 1999	Investment Management Requirements/Actual Allocations 1999	Household Savings Rates as a % of Disposable Household Income, 2000
Canada	Flat rate and wage based/65	32% of average earnings	5 + 6	Voluntary	Pre-funding required	$310/48%	Max. 5% real estate, 10% in own company, 30% in shares of one company/Actual 41% debt, 27% equities, 32% other	3.9
Finland	Flat rate and wage based/65	49% of average earnings	6 + 21	Mandatory	100% DB/ Pre-funding required	$60 (2000)/ 50%	Max 30% equities, 5% unlisted shares, 40% real estate, 30% in own company/Actual 69% bonds, 9% equities, 22% other	1.7
France	Wage based/60	83% of disposable income	9 + 28	Voluntary	Majority DC/ Pay as you go	$64 (2000)/ 5%	Min. 50% in EU gov't bonds/ Actual 1998 83% debt, 10% equities, 7% other	15.8
Germany	Wage based/65	54% of average earnings	17 + 17	Voluntary	DC/Pay as you go[b]	$63/3%	Max. 20–25% equities, 15–20% property, 10% own company/ Actual (1998) 76% debt, 10% equities, 14% other	9.8
Japan	Flat rate/65	24% of disposable income	7 + 7	Required if co. has >15 employees	100% DB/ Most pre-funded, but not required	$937/21%	Trustee must exercise "care, loyalty" and asset-liability match considered./Actual (1998) 48% debt, 23% equities, 29% other	11.3
Rep. of Korea	Wage based/65	40% of average earnings	4 + 9	Mandatory	DC/Pre-funding not required	$14/3%		16.6

EXHIBIT 1 (*concluded*)

	Government Social Security Pensions			Occupational/Employer Sponsored Pensions				Pers. Savings
Country	Basic Pension Benefits Are Based on Prior Wage or Are Flat-Rate for All Workers?/ Normal Retirement Age	Average Pension Benefit as a % of Disposable Income in 1992 or Average Pension Benefit as a % of Average Earnings in 1996	Employee + Employer Contributions to Government Pensions as % of Labor Costs, 1998	Private Employer-Sponsored Pension Plans	Occupational Pensions Are Primarily DB or DC?/Is Pre-Funding Required or Can Plans Be Pay-As-You-Go?	Financial Assets of Occupational Pension Funds 1999 (US$ Billion)/ Pension Assets as % of GDP 1999	Investment Management Requirements/Actual Allocations 1999	Household Savings Rates as a % of Disposable Household Income, 2000
The Netherlands	Flat rate/65	78% of disposable income	23 + 14	Voluntary	Almost 100% DB/Most pre-funded	$449/113%	Max 5% own co. & assets to be diversified/Actual 30% debt, 47% equities 23% other	7.6
Switzerland	Wage based/ 63 women, 65 men	91% of disposable income	10 + 10	Mandatory	DB and DC/ Pre-funding required	$267 (1998)/ 102%	Actual 26% bonds, 21% equities, 53% other	8.8
United Kingdom	Flat rate and wage based/ 60 women, 65 men	49% of disposable income	8 + 9	Voluntary	Pre-funding required	$1,226/85%	Max. 10% in any one mutual fund and 25% with one fund manager, 5% own company/ Actual 71% equities, 29% other (2000)	5.0
United States	Wage based/ 65–67	38% of average earnings	7 + 7	Voluntary	DB and DC; Majority DC/ Most require pre-funding	$6,901 ($4,674 corp. plans, $2,227 gov't employee)/ 75%	DB plans: Assets must be diversified and max. 10% in own corp./Actual 44% equities, 27% debt, 12% mutual funds, 17% other (Sept. 2001)	1.0

[a]Pension structures are difficult to compare across countries due to different financial, regulatory, and labor conditions. This exhibit is designed to provide a general sense of comparability only, and nothing should be inferred from any missing data, nor should the data be considered up-to-date in all circumstances.

[b]Germany uses a "book-reserve" system, whereby pension benefits earned each year are charged on a book basis to company financial statements, but are not necessarily funded.

EXHIBIT 2 U.S. Corporate Pension Funds by Total Pension Assets, Dec. 31, 2000[a]

Sources: 2002 Nelson Information Directory of Plan Sponsors; Compustat; Casewriter interpretations.

	Sponsor Company	Total U.S. Pension Fund Assets[a,b] ($ mil.)	U.S. Defined Benefit Pension Assets[b] ($ mil.)	U.S. Defined Benefit Pension Liabilities[b] (PBO, $ mil.)	Total Assets of Sponsor ($ mil.)	Equity Market Value of Sponsor ($ mil.)
1	General Motors	$104,881	$85,263	$86,042	$303,100	$27,923
2	Verizon Comm.	85,756	55,225	33,136	164,735	135,460
3	General Electric	76,656	49,757	28,535	437,006	476,115
4	Lucent Tech.	75,185	45,262	26,113	48,792	103,434
5	IBM	66,548	44,594	37,539	88,349	148,146
6	SBC Commun.	63,518	40,814	25,577	98,651	161,715
7	Ford Motor Co.	60,000	54,544	50,200	284,421	44,716
8	Boeing Co.	53,900	42,856	29,102	42,028	55,198
9	AT&T Corp.	37,718	21,863	13,063	242,223	64,863
10	Lockheed Martin	36,000	22,738	18,524	30,349	14,632
11	E.I. DuPont	31,484	20,314	17,763	39,426	50,213
12	DaimlerChrysler AG	31,445	24,373	20,539	187,088	42,141
13	BellSouth Corp.	31,368	19,406	12,264	50,925	76,635
14	ExxonMobil Corp.	25,819	14,575	18,714	149,000	301,238
15	Qwest Commun.	23,401	13,594	9,470	73,501	68,352
16	Raytheon Company	22,550	13,821	10,469	26,777	10,373
17	United Tech. Corp.	20,730	13,119	12,232	25,364	36,978
18	Honeywell Int'l.	20,000	12,264	10,132	25,175	38,195
19	Citigroup	19,948	9,899	9,176	902,210	256,447
20	United Airlines	18,300	8,511	9,252	24,355	2,046
21	Northrop Grumman	17,150	11,763	9,121	9,622	5,981
22	Philip Morris Inc.	16,964	13,018	10,785	79,067	97,191
23	Delta Air Lines	16,751	10,398	9,263	21,931	6,174
24	BP	20,900	9,070	5,546	143,938	181,753
25	Procter & Gamble	15,491	1,691	2,627	34,194	74,761
26	Royal Dutch Shell	15,459	6,678	5,405	73,499	129,865
27	Bank of America	15,165	8,652	8,011	642,191	74,025
28	Prudential Ins. Co.	15,055	9,797	n/a	n/a	private co.
29	United Parcel Serv.	14,701	7,661	4,547	21,662	66,663
30	P G & E Corp.	14,061	7,808	5,405	35,291	7,268
31	Eastman Kodak Co.	13,355	9,170	7,291	14,212	11,438
32	Alcoa, Inc.	13,050	9,790	8,270	31,691	28,995
33	Minn. Mining & Manuf.	12,719	8,965	8,273	14,522	47,728
34	American Airlines	12,655	5,731	6,434	26,213	5,959
35	Chevron Texaco	12,200	4,225	3,836	41,264	54,129
36	World Bank	12,000	11,000	n/a	n/a	private co.
37	U.S. Steel Group	11,990	9,312	6,291	8,711	1,598
...						
66	**Bethlehem Steel**	**7,171**	**5,735**	**6,060**	**5,467**	**231**

[a]Some data in Total U.S. Pension Fund Assets column may be latest available as of September 2001.
[b]Data in these columns were derived from 10-Ks, which use FASB valuation guidelines. Liabilities are based on Projected Benefit Obligations (PBOs), and assets may be fair market or market-related values.

EXHIBIT 3 U.S. Pension Assets by Fund Type and Asset Category

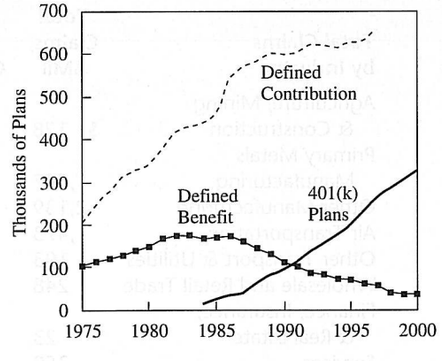
Source: Federal Reserve Board, "Flow of Funds Report Third Quarter 2001," December 7, 2001; Casewriter's interpretations. Numbers may not add up due to rounding.

	Corporate-Sponsored Funds (9/30/01)		State and Local Government-Sponsored Funds (9/30/01)		Total (9/30/01)	
	$, Billions	%	$, Billions	%	$, Billions	%
Equities	$1,591	39%	$1,100	53%	$2,692	44%
Debt instruments	822	20	806	39	1,628	27
Mutual fund shares	706	17	0	0	706	12
Cash	244	6	62	3	306	5
Insurance contracts	440	11	0	0	440	7
Miscellaneous assets	235	6	109	5	345	6
Total	**$4,039**	**100%**	**$2,078**	**100%**	**$6,117**	**100%**

	Corporate-Sponsored Funds as of 12/31/00			
	Defined Benefit		Defined Contribution	
	$, Billions	%	$, Billions	%
Equities	$1,009	49%	$993	41%
Debt instruments	595	29	223	9
Mutual fund shares	122	6	716	29
Cash	125	6	113	5
Insurance contracts	112	5	349	14
Miscellaneous assets	100	5	50	2
Total	**$2,062**	**100%**	**$2,444**	**100%**

EXHIBIT 4 Number of Privately Sponsored DB, DC, and 401(k) Plans, 1975–2000

Sources: U.S. Department of Labor, Pension Benefits Welfare Administration, "Private Pension Plan Bulletin, Abstract from 1997 Form 5500 Reports" and "Abstract from 1993 Form 5500 Reports"; Pension Benefits Guaranty Corporation; Casewriter's interpretations.



Defined contribution line includes 401(k) plans, 403(b) plans, employee stock ownership plans, and profit-sharing plans.

Latest available data for number of total DC plans is for 1997.

EXHIBIT 5 PBGC Net Assets, Premiums, and Insured DB Plan Funding Status, 1980–2000

Sources: Pension Benefits Guaranty Corporation Data Books; Pension Welfare Benefits Admin.; Casewriter's interpretations.

Year	PBGC Net Asset (Liability) Position[a], $ Mil	Total Underfunding of Plans That Are "Reasonably Possible"[b] to Terminate, $ Mil	PBGC Insurance Premiums Charged to Plan Sponsors, per Participant	PBGC Insurance Premiums Charged per $1,000 of Underfunded Amount of Plan and Maximum Premium per Participant	Total PBGC Insurance Premiums Collected, $ Mil	Aggregate Funding Ratio of All Insured Plans
1980	$ (104)	n/a	$ 2.60	None	$ 76	114%
1981	(190)	n/a	2.60	None	87	134
1982	(322)	n/a	2.60	None	93	147
1983	(517)	n/a	2.60	None	95	144
1984	(445)	n/a	2.60	None	94	152
1985	(1,298)	n/a	2.60	None	94	153
1986	(3,826)[c]	n/a	8.50	None	215	145
1987	(1,481)	n/a	16.00	None	283	133
1988	(1,451)	n/a	16.00	$6, max. $34	482	137
1989	(1,001)	n/a	16.00	$6, max. $34	620	130
1990	(1,781)	$ 8,000	16.00	$6, max. $34	679	132
1991	(2,340)	13,000	19.00	$9, max. $53	764	120
1992	(2,568)	12,360	19.00	$9, max. $53	875	115
1993	(2,621)	13,060	19.00	$9, max. $53	890	110
1994	(1,043)	18,230	19.00	$9, max. $53	955	104
1995	(123)	14,560	19.00	$9, max. $53+	838	112
1996	993	22,470	19.00	$9, max. $53+	1,146	102
1997	3,700	20,730	19.00	$9, no max.	1,067	111
1998	5,353	15,380	19.00	$9, no max.	966	111
1999	7,237	17,500	19.00	$9, no max.	902	n/a
2000	9,971	3,790	19.00	$9, no max.	807	n/a

[a]PBGC's net asset/liability position is the difference between PBGC's total assets and total liabilities.
[b]Value of reasonably possible terminations is underfunded amount of pension plans at below-investment grade rated firms.
[c]1986 figure includes $1.8 billion in liabilities from LTV Corp. that were later returned to LTV by a Supreme Court ruling.

EXHIBIT 6 Largest PBGC Claims[a] and Claims by Industry, 1975–2000

Source: Pension Benefits Guaranty Corporation 2000 Data Book; Casewriter's interpretations.

Companies with Largest Claims	Claims, $Mil	Year(s) of Plan Terminations	% of Total Claims
Pan American Air	$ 841.1	1991, 1992	13%
Eastern Airlines	552.7	1991	9
Wheeling Pitt Steel	495.2	1986	8
Sharon Steel	290.8	1994	5
LTV Republic Steel	221.9	1986	3
Kaiser Steel	221.6	1987, 1988	3
CF&I Steel	187.6	1992	3
Allis-Chalmbers (Manuf.)	185.7	1985, 1986	3
Uniroyal Plastics	149.9	1992	2
Blaw-Knox (Manuf.)	121.3	1992, 1994	2
Top 10 total	**$3,268.0**		**51%**
All other total	**$3,180.7**		**49%**

Total Claims by Industry	Total Claims, $Mil	% of Total Claims
Agriculture, Mining & Construction	$ 128	2%
Primary Metals Manufacturing	1,887	29
Other Manufacturing	2,139	33
Air Transportation	1,473	23
Other Transport & Utilities	193	3
Wholesale and Retail Trade	248	4
Finance, Insurance, & Real Estate	23	0
Services	359	6
Total	**$6,449**	**100%**

[a]Claims are the excess of plan liabilities over plan assets. With the exception of LTV (1986), numbers may not account for money later recovered by PBGC from plan sponsors. Recoveries, if any, were generally no more than 5% of claims.

EXHIBIT 7 Simplified Samples of Liability, Discount Rate and Asset Valuation Guidelines for U.S. DB Pension Plans

Source: Casewriter

	PBGC	IRS—ERISA "RPA 94"	FASB "FAS 87"
Liability measurement	Accumulated benefits (ABO-type)	Accumulated benefits (ABO-type)	Projected benefits (PBO)
Base rate for discount rate	85% of 30-year Treasury bond rate	90–105% of 30-year Treasury bond rate	Long-term, AA- or better-rated corporate bond rate
Measurement date for base rate	Last month-end rate before the start of the pension plan's accounting year	Wtd. avg. of rates at end of calendar year: 40% weight for prior year-end rate, 30% for 2-yr. ago rate, 20% for 3-yr. ago rate, 10% for 4-yr. ago rate	Most recent year-end rate
One major use of discounted liability value using this discount rate	To measure the funding status of a plan for PBGC insurance-premiums. Additional premiums are required if fund liabilities exceed assets.	To compute "funding ratio" (assets:liabilities). Ratio will reveal: (a) minimum that sponsor *must* contribute to meet funding rules and (b) maximum that sponsor *can* contribute on a tax-deductible basis.	To specify the plan's net assets/liabilities reported on the sponsor company's annual balance sheet, and to calculate part of annual pension cost/income for sponsor company income statement.
Rate on 12/31/00 for plans w/ Jan.–Dec. accounting yr	5.51% (85% of 6.48%, 30-yr. T-bond rate at year-end 1999)	6.27%= 1.05*[(.4*6.48)+ (.3*5.09)+(.2*5.93)+ (.1*6.64)] weighted T-bond rates at year-end 1996–1999.	Mean used by S&P 500 firms at YE 2000: 7.5% Moody's AA Corporate Bond Yield, 12/31/00: 7.48%
Asset valuation method	Actuarial value = 80% to 120% of fair market value	Fair market value	Market-related value = fair market value or value based on smoothed average of prior 2–5 years' fair market values. Also smooths large annual gains or losses in asset values resulting from investment returns on assets.

EXHIBIT 8 Selected Market Data: Total Returns, Yields, and Volatility

Sources: Bloomberg, Datastream, Global Financial Data, Federal Reserve System.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Oct 15 2001[a]
One Year Total Returns at Year-end, %												
S&P 500 Index	–6.56	26.31	4.46	7.06	–1.54	34.11	20.26	31.01	26.67	19.53	–10.14	–16.59
Dow Jones Ind. Avg.	–4.34	20.32	4.17	13.72	2.14	33.45	26.01	22.64	16.10	25.22	–6.18	–12.19
NASDAQ Composite	–17.81	56.84	15.45	14.75	–3.20	39.92	22.71	21.64	39.63	85.59	–39.29	–31.18
Wilshire 5000 Total Market index	–9.31	29.43	6.87	8.58	–2.52	33.40	18.84	29.17	21.72	22.05	–11.85	–20.78
U.S. Treasury bills (3-month maturity)	8.09	5.69	3.58	3.10	4.42	5.80	5.32	5.33	5.02	4.88	6.14	3.17
U.S. Treasury bills (1-year maturity)												
U.S. Treasury bonds (10-year maturity)[a]	7.26	18.52	8.52	13.45	–7.31	24.86	1.63	10.89	13.44	–7.12	17.53	7.98
Year-end Yields, %												
Moody's AA Corp. Long-Term Bonds	9.39	8.61	8.24	7.12	8.62	6.99	7.41	6.99	6.65	7.78	7.48	7.17
U.S. Treasury 10-year	8.55	7.86	7.01	5.87	7.09	6.57	6.44	6.35	5.26	5.65	6.03	4.61
U.S. Treasury 30-year	8.25	7.41	7.40	6.35	7.88	5.96	6.64	5.93	5.09	6.48	5.45	5.34
S&P 500 Annual Volatility												
Historical (weekly observations over past year)	15.7%	13.4%	8.9%	7.6%	10.0%	6.8%	12.8%	15.4%	18.6%	18.4%	23.0%	23.5%
Call Implied	n.a.	n.a.	n.a.	n.a.	10.5%	8.5%	17.0%	21.5%	24.9%	20.8%	23.2%	30.7%

[a]2001 total returns are year-to-date October 15, 2001, with the exception of total return on 10-year Treasury bond, which is as of September 30, 2001. 2001 yields and volatilities are as of October 15, 2001.

EXHIBIT 9 Selected Financial Data, Bethlehem Steel

Source: Company 10-Ks and annual reports, Compustat, U.S. Geological Surveys; Bloomberg; Casewriter interpretations.

		December 31,									
($, millions)	(Sept. 30) 2001[b]	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991
BALANCE SHEET											
Total Current Assets	987	1,146	1,209	1,495	1,464	1,488	1,526	1,569	1,591	1,470	958
TOTAL ASSETS	4,129	5,467	5,536	5,622	4,803	5,110	5,700	5,782	5,877	5,493	4,128
Curr. Portion Long-Term Debt	388	55	110	44	42	49	92	89	96	69	110
Other Current Liabilities	755	872	923	941	869	908	958	922	818	824	821
Long-Term Debt	579	798	754	628	452	497	547	668	718	727	762
Net Pension Liability[a]	540	442	410	415	440	870	1,115	1,117	1,614	1,189	965
Other Net Postretirement Liabilities[a]	1,836	1,955	1,820	1,790	1,595	1,595	1,565	1,579	1,581	1,540	444
TOTAL LIABILITIES	4,501	4,347	4,259	4,132	3,588	4,144	4,462	4,627	5,180	4,704	3,454
Shareholders' Equity (Deficit)	–303	1,120	1,277	1,490	1,215	966	1,238	1,156	697	789	675
TOT LIAB & NET WORTH	4,129	5,467	5,536	5,622	4,803	5,110	5,700	5,782	5,877	5,493	4,128
INCOME STATEMENT	(9 mo.)										
Net Sales	2,614	4,197	4,090	4,666	4,631	4,679	4,868	4,819	4,323	4,008	4,318
Cost of Sales	2,670	3,919	3,889	4,072	4,053	4,168	4,203	4,287	3,834	3,790	4,060
Pension Cost[a]	n.a.	55	40	85	131	170	198	192	173	184	180
Other post-retirement cost[a]	n.a.	264	200	165	150	146	143	137	145	141	113
GROSS INCOME (LOSS)	–419	278	201	595	578	511	665	532	489	218	258
NET INCOME (LOSS)	–1,403	–118	–183	120	281	–309	180	81	–266	–550	–767
STATEMENT OF CASH FLOWS											
Cash Flow from Operating Activity	–57	288	217	432	281	363	466	384	203	135	119
Cash Flow from Investing Activity	44	–96	–380	–388	–36	–251	–249	–414	–306	–197	–480
Net Cash from Financing Activity	42	–181	125	–158	–129	–155	–197	–40	124	186	171
CASH, END OF PERIOD	50	110	99	138	252	137	180	160	229	208	84
MARKET AND OTHER DATA											
Steel Shipments, Thousands of Tons		8,546	8,416	8,683	8,802	8,782	8,986	9,262	9,016	9,062	8,376
Stock Price, $		1.75	8.38	8.38	8.69	8.88	13.88	18.00	20.38	16	14.75
Equity Market Value, $ millions		231	1,098	1,089	982	993	1,536	1,978	1,862	1,448	1,119
Beta (monthly, 5-year historical)		1.35	1.32	1.42	0.73	1.02	1.50	1.53	1.39	1.62	1.55
Employees (avg. over year)		14,700	15,500	17,000	15,600	17,500	18,300	19,900	20,700	22,200	26,400
Pensioners Receiving Benefits		73,700	74,600	74,300	70,400	70,100	71,000	71,700	70,900	70,500	70,200
S&P Long-Term Debt Rating		B+	BB–	BB–	B+	B+	B+	B+	B+	BB–	BB
Pension Projected Benefit Obligation[a]		6,060	6,115	6,255	5,495	5,325	5,365	4,579	5,209	4,823	4770
Value of Pension Plan Assets[a]		5,735	6,090	5,915	4,930	4,215	3,950	3,276	3,366	3,301	3492
FAS 87 Discount Rate Used[a]		8.00%	8.00%	6.75%	7.38%	7.25%	9.00%	7.50%	8.50%	8.50%	9.25%
Steel Imports, % of U.S. Consumption		27%	26%	30%	23%	24%	23%	21%	24%	18%	18%
Minimill Share, U.S. Steel Production		47%	46%	45%	44%	43%	40%	39%	39%	38%	38%
U.S. DollarIndex, Major Trade Partners		100	93	92	95	86	83	84	90	89	82

[a]Note: Pension data in this exhibit is as reported on corporate financial statements, in accordance with the accounting standard FAS 87, Employers' Accounting for Pensions. On the balance sheet, FAS 87 directed a company to record any excess of pension liabilities over pension assets as a corporate liability. For the income statement, FAS 87 guidelines were to offset annual pension costs by investment income earned on the assets in the pension fund in the year. If income from fund assets was high, it was possible for the sponsoring company to record pension income, rather than pension expense, on its financial statements. According to a Bear, Stearns study, two S&P 500 companies, U.S. Steel and McDermott, recorded pension income that even exceeded operating income in 2000.

It is important to note one caveat to the highly simplified explanation of FAS 87 noted above. FAS 87 employed numerous "smoothing mechanisms" that allowed unexpected pension costs or income to be recognized over several years. For example, if a plan's assets earned a 1% rate of return instead of 10% as expected for the year, the company still recorded a 10% return on assets, and recognized the 9% difference as a smaller cost over several years. This treatment affected the reported pension annual pension cost or income, which in turn also affected the reported pension asset value.

[b]Sept. 2001 financial statement data is unaudited.

EXHIBIT 10 **Estimated Data, The Pension Plan of Bethlehem Steel and Subsidiaries**

Sources: IRS 5500 filings, 1999 and 2000; Ryan Labs; Casewriter's interpretations

ASSETS at Fair Market Values Plan year = Jan. 1–Dec. 31 $ Millions	Dec. 31, 2000	Other Data, Dec. 31, 2000	Dec. 31, 1999
CASH	214		216
FIXED INCOME SECURITIES			
Government securities	633		598
Corporate debt	613	Portfolio	604
International bonds	249	Modified Duration	234
TOTAL, FIXED INCOME SECURITIES EQUITIES	1,494	5.21 years	1,436
Corporate stocks	2,301		2,462
Bankers Trust Equity Index Fund	1,568		1,971
Putnam International Trust	149	Portfolio Beta	162
TOTAL, CORPORATE EQUITIES	4,017	1.00 to S&P 500	4,595
TOTAL ASSETS	5,725		6,247

Projected Liabilities (PBO Basis)[a] as of Year-End 2000 ($ millions)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Payments due, nominal	585	583	582	581	581	579	577	575	573	569	564	557
Year	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Payments due, nominal	549	540	529	517	504	488	471	453	434	415	395	375
Year	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Payments due, nominal	356	337	320	302	285	268	251	234	218	202	186	171
Year	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**			
Payments due, nominal	156	142	129	117	105	94	84	75	67			

PV of Projected Liabilities (PBO) @PBGC rate, 5.51%	$7,907	Modified Duration[b]	11.42
PV of Projected Liabilities (PBO) @IRS rate, 6.27%	7,299	Modified Duration[b]	10.88
PV of Projected Liabilities (PBO) @AA Corp. Bond Rate, 7.48%	6,482	Modified Duration[b]	10.09
PV of Projected Liabilities (PBO) @FAS87 rate used by company 8%	6,179	Modified Duration[b]	9.78

Other Information as of January 1, 2000

Total plan participants	99,723	Approx. share of benefits due
Active (employed) participants	15,840	26%
Retired and beneficiaries receiving benefits	68,803	70
Terminated vested	15,080	4
Weighted average age of active participants	49 years	
Weighted average retirement age	60 years	
Weighted average years of service	22 years	

[a]Liabilities in this exhibit estimate a Projected Benefit Obligation (PBO), which adds liabilities earned to date and liabilities that are expected to be earned in the future through wage increases and additional years of employment. After discounting to present value, an Accumulated Benefit Obligation (ABO) could be assumed to be roughly equal to 92% of the PBO in this case.

[b]Duration represents approximate % change in value/nominal change in yield, and is expressed in years. In approximation, the formula for Macaulay duration is: $\Delta P \approx -P^*(D/[1+Y])^*\Delta Y$, where P is price, D is Macaulay duration, and Y is the yield expressed in decimal form. The expression D/(1+Y), or modified duration, is also a commonly used basic measure of bond sensitivity to interest rates.

Tiffany & Company (1993)

In July 1993, Tiffany & Company concluded an agreement with its Japanese distributor, Mitsukoshi Ltd., that would fundamentally change its business in Japan. Under the new agreement, Tiffany's wholly owned subsidiary, Tiffany & Company Japan Inc. (Tiffany–Japan), assumed management responsibilities in the operation of 29 Tiffany & Company boutiques previously operated by Mitsukoshi in its stores and other locations in Japan. Tiffany looked forward to the new arrangement, as it was now responsible for millions of dollars in inventory that it previously sold wholesale to Mitsukoshi, resulting in enhanced revenues in Japan derived from higher retail prices. It was also apparent, however, that fluctuations in the yen/dollar exchange rate would now affect the dollar value of its Japanese sales, which would be realized in yen. Since Japanese sales were large and still growing, it seemed evident such fluctuations could have a substantial impact on Tiffany's future financial performance.

Company Background

Founded in New York in 1837, Tiffany & Company was an internationally renowned retailer, designer, manufacturer, and distributor of luxury goods. The famous blue-box company found its initial success in fine jewelry, most notably diamonds, but had since expanded its product line to include timepieces, china, crystal, silverware, and other luxury accessories. In the fiscal year ending January 31, 1993 (FY 1992), Tiffany earned $15.7 million on revenues of $486.4 million and had total assets of $419.4 million. Recent financial statements are provided in Exhibits 1 and 2. An historical summary of operations is provided in Exhibit 3.

After more than a century of independence, Tiffany was acquired by Avon Products, Inc. in 1979. For the next several years, Avon, a nationwide door-to-door cosmetics marketer, worked to expand Tiffany's product line to reach beyond its traditional affluent customer base to the larger middle market. While this diversification strategy resulted in enhanced sales for Tiffany from $84 million in 1979 to $124 million in 1983, operating expenses as a percentage of sales grew inordinately from 34% to 43% in 1978 and 1983, respectively. Avon soon realized that Tiffany's traditional market niche was substantially different than its own and, in 1984, decided to put the company up for sale. The most attractive offer came from Tiffany's own management, who agreed to buy back Tiffany's equity and the Fifth Avenue store building for a total of $135.5 million. In what ultimately took the form of a leveraged buyout (LBO), the terms of the deal distributed virtually all of the equity shares to three key investor groups. Management ended up with 20% of total equity shares. Investcorp, the Bahrain- and London-based merchant bank that backed management in the deal, received 49.8% of total equity shares. The third player, General Electric Credit Corporation (GECC), ended up with 25.7% of total equity shares. It was

This case was prepared by Research Associate Kendall Backstrand under the supervision of Professor W. Carl Kester.

through an $85 million credit arrangement with GECC that management was able to refinance a substantial portion of the purchase price.[1]

The aftermath of the LBO was marked by very tight free cash flow coupled with significant growth potential on the horizon. After the company had once again become profitable and realizing that the company's growth prospects demanded more cash than could be generated internally, in 1987, management offered Tiffany stock to the public at approximately $15 a share (adjusted for a subsequent stock split). In 1989, Mitsukoshi purchased 1.5 million shares of Tiffany's common stock from GECC.[2] As of January 31, 1993, Mitsukoshi owned approximately 14% of Tiffany stock, the largest percentage of any single institutional investor. Three other institutional investors collectively owned approximately 26% of the stock, followed by all Tiffany executive officers and directors as a group at 4.9%.

In 1993, Tiffany was organized into three distribution channels: U.S. retail, direct marketing, and international retail. U.S. retail included retail sales in Tiffany-operated stores in the United States and wholesale sales to independent retailers in North America. The 16 stores in this channel accounted for 50% of total sales in FY 1992. Direct marketing, representing the smallest channel of distribution, consisted of corporate and catalog sales. In FY 1992, its sales represented 18% of Tiffany's total sales. International retail, which included retail sales through Tiffany-operated stores and boutiques, corporate sales, and wholesale sales to independent retailers and distributors, primarily in the Far East and Europe, accounted for 32% of total sales in FY 1992. Jewelry sales from all three channels accounted for 65% of 1993 sales, making jewelry the most significant product line. Exhibit 4 provides financial results of Tiffany's domestic and foreign operations.

The past several years for Tiffany were marked by a trend of international expansion, beginning in 1986 when it opened a flagship retail store in London. Additional flagship stores were then opened in Munich and Zurich in 1987 and 1988, respectively. In 1990, the Zurich store was expanded. Stores were opened in Hong Kong at the Peninsula Hotel and at the Landmark Center in August 1988 and March 1989, respectively. Taipei saw the opening of a store in 1990, as did Singapore (at the Raffles Hotel), Frankfurt, and Toronto in 1991. Also in 1991, the London store was expanded. In 1992, Tiffany opened five new boutiques in Japan, and two new boutiques were opened by an independent retailer in Korea. Early 1993 saw continued international growth, with the opening of two more boutiques in Japan, a second store in Singapore's Ngee Ann City, two boutiques by independent retailers in Saipan and the Philippines, and the expansion of the Peninsula Hotel store in Hong Kong.

Exhibit 5 shows the growth in the number of Tiffany stores and boutiques around the world from 31 to 79, implying a 250% increase from 1987 to 1993. These 79 retail locations included 16 stores in the United States, 56 stores in the Far East, 6 stores in Europe, and 1 store in Canada, all of which ranged in size from 700 to 13,000 gross square feet, with a total of approximately 127,000 gross square feet devoted to retail purposes.

[1]This included a $75 million secured revolving credit facility; a $10 million, 16% subordinated note due in 1992; and common stock warrants to purchase approximately 25% of the company's equity on a fully diluted basis.

[2]Prior to Mitsukoshi's purchase of Tiffany's common stock from GECC, Tiffany and Mitsukoshi entered into an agreement by which Mitsukoshi agreed not to purchase in excess of 19.99% of Tiffany's issued and outstanding common shares. This agreement would expire on September 31, 1994.

Tiffany's worldwide capital expenditures were $2.28 million in FY 1992, compared with $41.4 million in FY 1991. These expenditures were primarily for the opening of new stores and boutiques and the expansion of existing stores. Management anticipated capital expenditures to drop further to $18.0 million in FY 1993 before rebounding to approximately $25.0 million in FY 1994. Management also expected to open four or five new stores per year in the foreseeable future.[3] To support future expansion plans, and fluctuations in seasonal working capital needs, management planned to rely upon internally generated funds and a $100 million noncollateralized revolving credit facility available at interest rates based upon Eurodollar rates, a prime rate, certificate of deposit rates, or money market rates.[4] As in the past, cash dividends were expected to be maintained at a relatively moderate level, which would permit the company to retain a majority of its earnings.

Impetus for Change in the Japanese Operations

While Tiffany found new market potential across the globe, nowhere was it as promising as in Japan, where Tiffany's sales accounted for only 1% of the $20 billion Japanese jewelry market. The thriving Japanese economy of the late 1980s and very early 1990s stimulated a booming demand for certain types of expensive and glamorous Western goods. Among these were Tiffany products, principally those of the fine jewelry line marketed toward older women. However, as the Japanese economy finally slowed and Japanese consumers became more cautious in their spending, the demand for Tiffany's luxury items also slumped. In response to soft consumer demand in Japan, Mitsukoshi cut back on Tiffany inventory levels. Mitsukoshi's wholesale purchases from Tiffany-Japan declined from 23% of Tiffany's total sales in FY 1991 to 15% in FY 1992. Declining wholesale shipments were also accompanied by a small decline in gross margin from 49.4% in FY 1991 to 48.7% in FY 1992. Despite lackluster consumer demand in the first half of FY 1993, however, Tiffany continued to believe that Japanese sales had attractive long-run growth potential. It was for this reason that Tiffany sought greater control over its future in Japan and ultimately decided to restructure its Japanese operations.

From 1972 through July 1993, Mitsukoshi acted as the principal retailer of Tiffany products in Japan, purchasing selected goods from Tiffany–Japan on a wholesale basis. Mitsukoshi sold the products on a retail basis to the Japanese consumer, realizing profits in the form of relatively higher retail prices. Since the wholesale transactions were denominated entirely in dollars, fluctuations in the yen/dollar exchange rate did not represent a source of volatility for Tiffany's expected cash flows. Instead, Mitsukoshi bore the risk of any exchange rate fluctuations that took place between the time it purchased the inventory from Tiffany and when it finally made cash settlement. Typically, Tiffany merchandise sold by Mitsukoshi was priced at a substantial premium (100% in some cases) over the domestic U.S. retail price for such merchandise.[5]

[3]Due to the significant number of Tiffany boutiques already operating in Japan, future openings there were expected to occur only at a very modest rate, if at all, in the near-term future.

[4]Tiffany's business was seasonal in nature, with the fourth quarter typically representing a proportionally greater percentage of annual sales, income from operations, and net income. In FY 1992, net sales totaled $107,238,000, $120,830,000, $105,897,000, and $152,431,000 for the first, second, third, and fourth quarters, respectively. Management expected this pattern to continue in the future.

[5]Tiffany management believed that a retail price reduction in Japan of 20% to 25% would likely result in a substantial increase in unit volume of jewelry sales.

The new agreement between the two companies, however, fundamentally changed both companies' financial situations. In repurchasing the merchandise previously sold by Tiffany to Mitsukoshi, Tiffany–Japan assumed new responsibility for establishing yen retail prices, holding inventory in Japan for sale, managing and funding local advertising and publicity programs, and controlling local Japanese management.[6] Mitsukoshi, on the other hand, would no longer be an independent retailer of Tiffany products but would still receive fees equaling 27% of net retail sales in compensation for providing boutique facilities, sales staff, collection of receivables, and security for store inventory.[7]

With greater control over retail sales in its Japanese operations. Tiffany looked forward to long-run improvement in its performance in Japan despite continuing weak local economic conditions. However, increased sales and profits were not the only changes that Tiffany could anticipate as a result of the new agreement. Tiffany now faced the risk of foreign currency fluctuations previously borne by Mitsukoshi. Past history warned Tiffany that the yen/dollar exchange rate could be quite volatile on a year-to-year, and even month-to-month, basis. Exhibit 6 illustrates the significant strengthening of the yen against the dollar during the 10 years ending in 1993. While a continuation of this strengthening would enhance the dollar value of Tiffany's yen-denominated cash inflows, there was the distinct possibility that the yen might eventually become overvalued and crash suddenly, just as the U.S. dollar did in 1985. Indeed, there was some evidence that the yen was overvalued against the dollar in 1993 (see Exhibit 7).

Hedging to Manage Foreign Exchange Risk

The possibility of sharp, unexpected movements in the yen/dollar exchange rate had prompted Tiffany's management to study the desirability of engaging in a program to manage exchange rate risk. To reduce exchange rate risk on its yen cash flows, Tiffany had two basic alternatives available to it. One was to enter into forward agreements to sell yen for dollars at a predetermined price in the future. The other was to purchase yen put options. The terms at which Tiffany could purchase forward contracts and put options, along with other financial market data, are shown in Exhibit 8.

Before committing Tiffany to a hedging program, management wanted to be sure it understood what the potential risks and rewards were for each of these so-called "derivative" instruments. Perhaps more importantly, it was essential to determine whether or not a risk management program was appropriate for Tiffany, what its objectives should be, and how much, if any, exposure should be covered.

[6]The repurchase of inventory by Tiffany necessitated the reversal of $115 million in sales and related gross profit previously recognized on merchandise sold to Mitsukoshi. Accordingly, Tiffany recorded a $57.5 million reserve to provide for product returns, which reduced the second fiscal quarter's (ended July 31, 1993) net income by approximately $32.7 million, or $2.07 per share. Of the $115 million of sales being reversed, only $52.5 million of inventory held in Mitsukoshi boutiques was actually repurchased during the month of July 1993 (Mitsukoshi agreed to accept a deferred payment on $25 million of this repurchased boutique inventory, which was to be repaid in yen on a quarterly basis with interest of 6% per annum over the next 4½ years). Approximately $62.5 million of Tiffany & Company inventory maintained in Mitsukoshi warehouses would be repurchased throughout the period ending February 28, 1998. Payment for this warehouse inventory was to be made in yen 40 days following actual receipt of the inventory.

[7]Fees were reduced to 5% on certain high-value jewelry items repurchased from Mitsukoshi. Tiffany–Japan would also pay Mitsukoshi incentive fees equal to 5% of the amount by which boutique sales increase year-to-year, calculated on a per-boutique basis. In Tokyo, Tiffany boutiques could be established only in Mitsukoshi's stores, and Tiffany-brand jewelry could be sold only in such boutiques (though Tiffany–Japan reserved the right to open a single flagship store in Tokyo).

EXHIBIT 1
Consolidated Income Statements (thousands of dollars)

Annual Income Statements

	Years Ended January 31,	
	1992	1993
Net sales	$491,906	$486,396
Cost of goods sold	248,897	249,363
Gross profit	243,009	237,033
Selling, general, and administrative expenses	180,939	209,140
Provision for uncollectible accounts	1,042	1,152
Income/(loss) from operations	61,028	26,741
Interest expense and financing costs	6,337	7,231
Other income	375	415
Income/(loss) before income taxes	55,066	19,925
(Benefit)/provision for income taxes	23,261	4,213
Net income/(loss)	$ 31,805	$ 15,712

Second Quarter Income Statements (thousands of dollars)

	Six Months Ended July 31,	
	1992	1993[a]
Net sales	$228,068	$223,714
Product return for Japan realignment	0	(115,000)
	228,068	108,714
Cost of goods sold	119,481	117,486
Cost related to product return for Japan realignment	0	(57,500)
Gross profit	108,587	48,728
Selling, general, and administrative expenses	92,578	99,792
Provision for uncollectible accounts	458	906
Income/(loss) from operations	15,551	(51,970)
Other expenses, net	3,453	3,410
Income/(loss) before income taxes	12,098	(55,380)
(Benefit)/provision for income taxes	5,106	(23,867)
Net income/(loss)	$ 6,992	$ (31,513)

[a]Data reflect the loss in net income for the second fiscal quarter ending July 31, 1993, due to the repurchase.

EXHIBIT 2
Consolidated Balance Sheets (thousands of dollars)

	July 31, 1993	Years Ended January 31, 1992	1993
Assets			
Current Assets			
Cash and short-term investments	$ 6,665	$ 3,972	$ 6,672
Accounts receivable, less allowances of $4,170 and $7,293	51,432	51,687	51,378
Income tax receivable	10,630	—	—
Inventories	247,891	213,435	224,151
Prepaid expenses	14,058	12,777	10,107
Total current assets	$330,676	$281,871	$292,308
Property and equipment, net	$ 96,320	$ 88,975	$ 94,454
Deferred income taxes	21,205	5,047	5,723
Other assets, net	26,204	18,989	25,770
Total assets	$474,405	$394,882	$418,255
Liabilities and Stockholders' Equity			
Current Liabilities			
Short-term borrowings	$ 24,235	$ 43,566	$ 22,458
Accounts payable and accrued liabilities	98,497	66,781	61,919
Income taxes payable	0	7,371	2,679
Merchandise and other customer credits	6,029	4,687	5,318
Total current liabilities	$128,761	$122,405	$ 92,374
Long-term trade payable	$ 26,472	—	—
Reserve for product return	31,768	—	—
Long-term debt	101,500	50,000	101,500
Deferred income taxes	0	7,957	3,858
Postretirement benefit obligation	14,510	11,960	13,560
Other long-term liabilities	$ 1,921	$ 2,521	$ 2,157
Shareholders' Equity			
Common stock, $.01 par value; authorized 30,000 shares, issued 15,660 and 15,620	$ 157	$ 159	$ 156
Additional paid-in capital	69,969	67,927	69,553
Retained earnings	107,002	129,364	140,705
Foreign currency translation adjustments[a]	(7,655)	2,680	(5,608)
Total stockholders' equity	$169,473	$200,130	$204,806
Total liabilities and shareholders' equity	$474,405	$394,973	$418,255

[a]The accounting for foreign exchange translation gains and losses is governed by the Statement of Financial Accounting Standards #52 (FASB #52). Under this accounting method, all foreign assets and liabilities are translated at the exchange rate prevailing on the balance sheet date. Equity accounts are translated at historical rates. Income statement items are translated at either the prevailing rate on the date that a sale or purchase occurred, or a weighted average of exchange rates for the appropriate period. An important provision in FASB #52 is that translation gains and losses are *not* flowed through the income statement. Instead, they are booked directly to a separate equity account such as "Foreign Currency Translation Adjustments" or "Cumulative Translation Adjustment." Only if and when an asset is sold or liquidated does the realized translation gain or loss move from the translation adjustment account to flow through the income statement.

EXHIBIT 3 Historical Summary (thousands of dollars except per share amounts)

	January 31, 1988	1989	1990	1991	1992	1993
Summary of operations						
Net sales	$230,488	$290,344	$383,964	$455,712	$491,906	$486,396
Income/(loss) from operations	33,691	44,193	60,977	67,806	61,028	26,741
Interest expense and financing costs	2,174	826	2,578	4,475	6,337	7,231
Income/(loss) before income taxes	31,194	43,032	58,387	63,475	55,066	19,925
Net income/(loss)	$ 16,176	$ 24,901	$ 33,305	$ 36,661	$ 25,470	$ 15,712
Capital expenditures	$ 1,895	$ 9,680	$ 14,040	$ 24,835	$ 41,385	$ 22,754
Depreciation and amortization	1,118	1,634	3,455	5,487	8,134	11,425
Common shares outstanding	12,570	15,370	15,560	15,670	15,870	15,620
Income/(loss) per share	$ 1.17	$ 1.62	$ 2.13	$ 2.34	$ 20.1	$ 1.00
Cash dividends per share	—	$ 0.10	$ 0.18	$ 0.26	$ 0.28	$ 0.28
Dividend payout (%)	0.0%	6.0%	8.0%	11.0%	14.0%	28.0%
Financial position						
Net working capital[a]	$ 66,772	$ 89,082	$127,074	$162,265	$203,032	$220,813
Inventories	70,778	103,771	142,545	173,964	213,435	224,151
Total assets	126,669	162,648	237,061	307,268	394,882	419,355
Total debt	—	7,253	32,565	49,272	93,566	123,958
Shareholders' equity	71,621	99,193	135,568	176,183	200,039	204,806
Book value per share	$ 5.70	$ 6.29	$ 8.71	$ 11.24	$ 12.61	$ 13.11
Average annual P/E	14.5	14.3	19.8	16.9	24.2	34.0
Stock price						
High	$ 27.30	$ 29.70	$ 61.30	$ 53.80	$ 57.50	$ 52.90
Low	$ 9.70	$ 14.00	$ 26.00	$ 27.50	$ 32.60	$ 23.00
Equity beta (β)						1.35
Selected ratios						
Current ratio	2.4	2.5	2.5	2.3	2.3	3.2
Net profit margin (%)	7.3%	8.6%	8.7%	8.0%	6.5%	3.2%
Return on assets (%)	13.0%	15.0%	14.0%	12.0%	8.0%	4.0%
Return on equity (%)	23.0%	25.0%	25.0%	21.0%	16.0%	8.0%
Asset turnover	1.82	1.79	1.62	1.48	1.25	1.16
Total debt/total capital (%)	0.0%	4.0%	14.0%	16.0%	24.0%	30.0%

[a]Excluding short-term borrowings.

EXHIBIT 4
Domestic and Foreign Operations (thousands of dollars)

	Years Ended January 31, 1992	1993
Domestic		
Net sales	$439,055	$414,558
U.S.	316,282	326,828
Export	122,773	87,730
Income/(loss) from operations	98,229	73,559
Identifiable assets	278,730	287,127
Foreign		
Net sales	52,851	71,838
Income/(loss) from operations	3,888	2,381
Identifiable assets	116,152	132,228

EXHIBIT 5 Worldwide Retail Locations

	Tiffany's Subsidiary Companies					Independent		
	North America and Europe			Pacific Rim				
End of Fiscal Year	U.S.	Canada	Europe	Japan	Elsewhere	Mitsukoshi	Others	Total
1987	8	0	2	0	0	21	0	31
1988	9	0	3	0	1	21	0	34
1989	9	0	5	0	2	24	0	40
1990	12	0	5	0	3	27	0	47
1991	13	1	7	0	4	38	2	65
1992	16	1	7	7	4	36	4	75
1993	16	1	6	37	5	8	6	79

EXHIBIT 6
Yen/Dollar Exchange Rates (end of period)

Year/Month	Yen/Dollar	Year/Month	Yen/Dollar
1983	231.70	1992	
1984	251.60		
1985	200.25	January	125.55
1986	158.30	February	129.15
1987	121.25	March	132.92
1988	125.05	April	133.30
1989	143.80	May	127.75
1990	135.75	June	125.87
1991		July	127.20
January	131.45	August	123.08
February	132.95	September	120.07
March	140.60	October	123.45
April	136.38	November	124.75
May	138.45	December	124.86
June	137.90	1993	
July	137.42	January	124.80
August	136.85	February	118.00
September	132.85	March	116.65
October	130.60	April	111.60
November	130.08	May	107.25
December	124.90	June	106.35

End-of-Year Exchange Rates

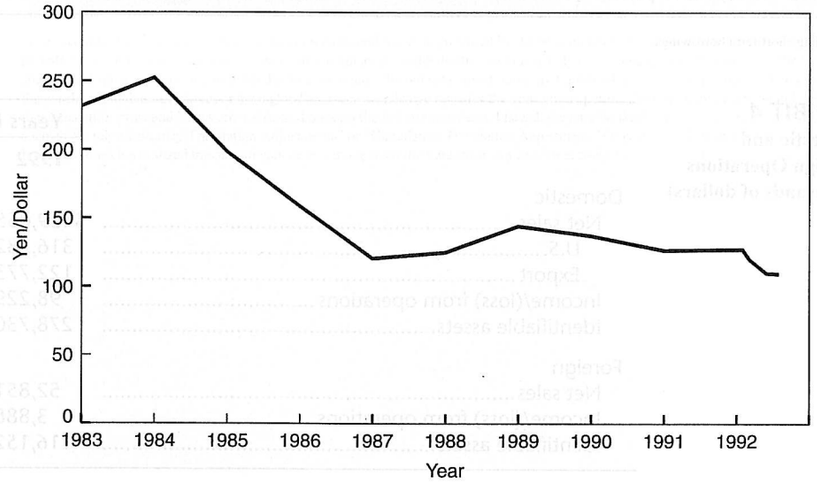
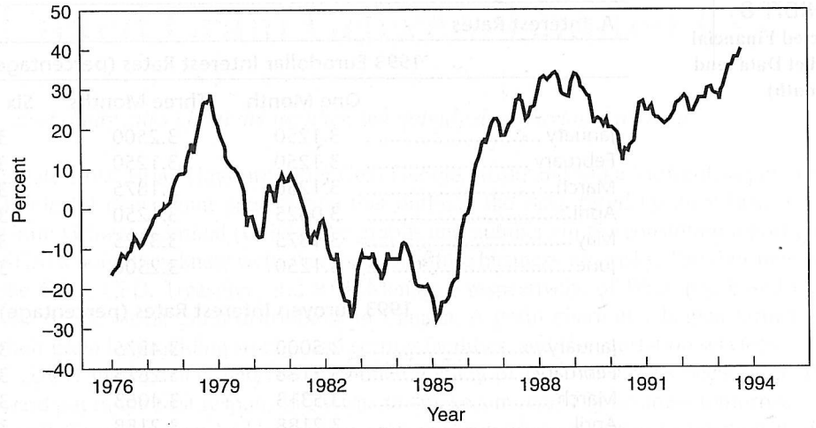


EXHIBIT 7
Japanese Yen: Percent Over-/Under-Valued versus U.S. Dollar[a]

Source: Currency and Bond Market Trends (Merrill Lynch, October 1994), p. 22.



[a]Estimates of over- and under-valued percentages are based on long-run purchasing power parity estimates. The Purchasing Power Parity (PPP) theory of exchange rate determination holds that long-run trends in exchange rates are determined by cumulative differences in national inflation rates. Specifically, PPP maintains that $S = P_F/P_D$, where S is the spot exchange rate expressed as foreign currency per unit of domestic currency, P_F is the foreign national price level, and P_D is the domestic national price level. Relative PPP stipulates that $\hat{s} = \hat{p}_f - \hat{p}_d$, where $\hat{s}$ is the rate of change in the exchange rate, and $\hat{p}_f$ and $\hat{p}_d$ are the national rates of inflation in the foreign and domestic currencies, respectively. Currencies that weaken faster (or strengthen more slowly) than the rate justified by the difference in national inflation rates are said to be depreciating in *real* terms. Likewise, currencies that strengthen faster (or weaken more slowly) than the rate justified by the inflation rate difference are said to be appreciating in *real* terms.

EXHIBIT 8
Selected Financial Market Data (end of month)

A. Interest Rates

1993 Eurodollar Interest Rates (percentage)

	One Month	Three Months	Six Months	One Year
January	3.1250	3.2500	3.3750	3.6875
February	3.1250	3.1250	3.2500	3.5000
March	3.1250	3.1875	3.3125	3.5625
April	3.0625	3.1250	3.2500	3.5000
May	3.1875	3.3125	3.4375	3.8125
June	3.1250	3.2500	3.5000	3.6875

1993 Euroyen Interest Rates (percentage)

January	3.5000	3.4375	3.3750	3.3125
February	3.2188	3.2813	3.2188	3.2188
March	3.5313	3.4063	3.4063	3.4063
April	3.2188	3.2188	3.2813	3.3125
May	3.2500	3.2500	3.3438	3.4375
June	3.1875	3.1875	3.1876	3.2501

B. 1993 Yen/Dollar Exchange Rates (yen per dollar)

	Spot	Forward	
		One Month	Three Months
January	124.800	124.845	124.865
February	118.000	118.015	118.025
March	116.650	116.665	116.675
April	111.600	111.605	111.605
May	107.250	107.255	107.230
June	106.350	106.355	106.330

C. June 1993 Yen/Dollar Foreign Currency Option Prices (100ths of a cent per yen; each option contract is for ¥6,250,000)

Strike Price	Month of Maturity			Strike Price	Month of Maturity		
	July	August	September		July	August	September
Calls				*Puts*			
87.0				87.0			0.36
89.0				89.0			0.54
90.0				90.0	0.25	0.50	0.92
91.0			3.32	91.0			1.04
91.5				91.5		0.85	
92.0	1.54		2.52	92.0	0.57	1.07	1.44
92.5				92.5	0.94	1.12	1.63
93.0	1.02			93.0	1.16		
93.5			2.22	93.5	1.22		2.06
94.0	0.94	1.46	1.99	94.0	1.26		
94.5	0.66	1.15		94.5			
95.0	0.59	1.21	1.33	95.0			
96.0		0.70	0.93	96.0			
97.0		0.55	0.78	97.0			
98.0			0.59	98.0			

United Grain Growers Limited (A)

"Everybody talks about the weather, but nobody does anything about it."

In late 1998, Brian Hayward, Peter Cox, George Prosk, and Mike McAndless pored over a colorful PowerPoint presentation that outlined the risks faced by their firm, United Grain Growers Limited (UGG). The graphs and numbers in the consulting report quantified a point they knew well: that the agriculture business was risky. The four men were the CEO, CFO, Treasurer, and Risk Manager, respectively, of Winnipeg-based UGG, one of the oldest grain distributors in Canada. A grain distributor helped farmers sell their grain by providing storage and sorting facilities, and transportation services.

UGG management had commissioned a study of the firm's risks because, as Hayward put it, his first responsibility was to "make sure we're in business tomorrow." The small Canadian firm had embarked on a modernization program to position itself in the deregulating Canadian agricultural industry. Its grain distribution revenues were largely determined by the amount of grain it handled, so anything that affected the quantity of grain shipped had a material impact on the firm's revenues, profits, and cash flow. Events of the prior two years showed how the firm's future could be threatened by unexpected risks, and UGG's management and Board of Directors were keen to understand these risks in light of their strategic importance. A recent Canadian regulatory guideline also recommended that Boards be held responsible for the "identification of the principal risks of the corporation's business and ensuring the implementation of appropriate systems to manage these risks."

Working with senior line managers, the risk consulting division of Willis Corroon, a leading insurance broker, had quantified the potential likelihood and severity of the six most material risks to UGG. The greatest risk was the impact of weather on the size of the harvest. The report suggested that, on average, once every ten years, UGG might face adverse weather that could reduce after-tax profits by as much as 11 million dollars,[1] or about 70% of its 1998 earnings. UGG's management needed to figure out the implications of this analysis, and what—if anything—should or could be done about the weather.

Grain Distribution

Agriculture—and in particular the grain industry—was one of civilization's oldest industries. Despite advances that had doubled yields per acre in the last 40 years, the industry had always been quite volatile, characterized by boom and bust cycles. This volatility had its roots in the forces of supply and demand in the global market. Grain supplies were variable due to natural forces such as pests, disease, and weather. While farmers could apply a variety of treatments to control insects or protect against disease,

[1]All dollar figures represent Canadian dollars. UGG's 1999 fiscal year began August 1, 1998.

Professors Peter Tufano and Stuart Gilson and Research Associate Joshua Musher prepared this case. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.