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Pension Policy at The Boots Company PLC

In the Spring of 2000, the trustees of the pension scheme at The Boots Company PLC ("Boots") considered a radical and unprecedented investment policy change for the assets in the scheme. Boots was a leading retailer of cosmetics and toiletries in the United Kingdom, and the company pension scheme, with £2.3 billion in assets, was one of the largest in the country. At stake was a proposal to move 100% of Boots' pension scheme assets into a passively managed bond portfolio. Until now, Boots' pension investment strategy had been similar to that of other large U.K. pension funds. In general, such funds used external managers for active and passive portfolios of roughly 75% equities, 17% bonds, 4% real estate and 4% cash.[1] Appointed by the company, the pension scheme's Board of Trustees was responsible for overseeing the scheme's assets and complying with pension rules.

The trustees worked in cooperation with the company in considering this bond proposal, since the company was responsible for funding the plan. Boots, like many other U.K. companies with pension schemes, had enjoyed a long "pension holiday" from making contributions to the pension scheme, as the bonanza of equity markets in the 1990s had translated the pension scheme's large equity holdings into surplus pension assets. However, the latest actuarial analysis of Boots' pension scheme, dated April 1, 1998, indicated that Boots' pension holiday was likely to end by 2002,[2] prompting the company to evaluate funding and investment strategies for the scheme.

The idea to invest Boots' pension assets 100% in bonds emerged during a period in which the U.K. government was implementing several changes to the tax and regulatory regimes for corporate pensions. For example, effective July 1997, the U.K. government eliminated dividend tax credits for nontaxable entities such as pension funds, effectively reducing U.K. pension schemes' total returns from owning equities. In addition, new pension funding requirements and accounting standards, to be fully implemented within the next few years, would make the cash flows and earnings of U.K. companies that sponsored pensions much more sensitive to mismatched volatilities between pension assets and liabilities.

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[1] UBS Asset Management estimates for year-end 1999. According to Boots Pension Scheme Report and Statement of Accounts for March 31, 2000, Boots' pension scheme was invested 74% in equities, 20% in fixed income, 5% in cash and 1% in property.

[2] "2000 Annual Reports and Accounts," The Boots Company PLC.

Professor Luis M. Viceira and Research Associate Akiko M. Mitsui prepared this case from published sources. 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.

Upon the trustees' approval and implementation, a new 100% bond portfolio would more closely align pension assets and liabilities. This would benefit the scheme's 70,000 members, since movements in financial markets would be less likely to reduce the value of assets below the accrued pension benefits. Furthermore, longstanding academic principles of corporate pension fund management suggested that this move might also have significant effects on Boots itself, its shareholders, and other stakeholders.[3] However, in a pension investment environment that emphasized the superior returns of equities, such a move by a pension scheme as large as Boots' would almost surely capture the attention and scrutiny of corporate board members, pension trustees, investment managers, employees, actuaries and shareholders nationwide.

The Boots Company PLC in 2000[4]

After his father's death in 1860, Jesse Boot, age 10, helped his mother run the family's herbal medicine shop in Nottingham, England. In 1871 Boot became a full partner with his mother, expanded the store's product line and began selling proprietary medicines. In 1883 Boot & Company was formed, and by 1900, the company had 180 stores.

The company was renamed The Boots Company PLC in 1982.[5] In 2000, Boots was a leading retailer of cosmetics, toiletries, baby products, car parts, and film and film developing in the United Kingdom and Ireland. Boots operated 1,404 drug stores in the United Kingdom and Ireland, and 69 stores in The Netherlands, Thailand and Japan. Boots developed and produced private label products, which represented 41% of retail sales. In addition, Boots operated several health services outlets for optical, dental, and footcare services. Halford's, a Boots subsidiary, was the largest car parts, accessories, cycle and cycle accessories chain in the United Kingdom, with 410 stores. Boots marketed their consumer healthcare products and sold OTC drugs in 130 countries through Boots Healthcare International. Boots also engaged in property management and development for their retail locations. In late-1999 Boots launched a joint venture lifestyle website for women, handbag.com.

In the cosmetics and toiletries segment, Boots faced domestic cost competition from the supermarket channel through stores such as Sainsbury's, as well as competition from department stores such as Marks & Spencer. Nevertheless, ranked by sales, Boots was the largest cosmetics and toiletries chain in the United Kingdom by a factor of over five times against its nearest competitor, the 8th largest retailer of any product in the United Kingdom, the world's fourth largest health and beauty retailer, and the world's 72nd largest retailer of any product.[6]

Boots' EBIT for the fiscal year ending March 31, 2000 was £623 million on sales of £5,187 million. Book value of assets was £3,390 million, with £1,153 million in current liabilities and £516 million in long-term debt and other liabilities. Book value of equity was £1,720 million. Aside from pension liabilities, Boots' off-balance sheet liabilities included lease obligations with a capitalized value of

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[3] See Fischer Black, "The Tax Consequences of Long-Run Pension Policy," *Financial Analysts Journal*, March/April 1980, Jack Treynor, "The Principles of Corporate Pension Finance," *Journal of Finance*, 1977, Irwin Tepper, "Taxation and Corporate Pension Policy," *Journal of Financial Finance*, 1981, William Sharpe, "Corporate Funding Pension Policy," *Journal of Financial Economics, 1976* and Zvi Bodie, "The ABO, PBO, and Pension Investment Policy," *Financial Analysts Journal*, 1990.

[4] Unless specifically noted otherwise, data in this section is derived from One Source, Hoover's Online, and The Boots Company PLC Annual Reports and Accounts 2000, and The Boots Company website at www.boots-plc.com.

[5] In 2003 the company changed its corporate structure to a holding company and its name to The Boots Group PLC.

[6] *Cosmetics International*, August 15, 2001; *Retail Week*, April 20, 2002; *MMR*, August 20, 2001.

£1,277 million (discounted at Boots' after-tax cost of borrowing of 4.5%). Boots was listed on the London Stock Exchange under the symbol BOOT, and was a longstanding component of the FTSE 100, the U.K.'s benchmark large capitalization equity index. As of March 31, 2000, Boots' market capitalization was approximately £4,831 million. Boots' debt was rated A1/P1 by Moody's and A+/P1 by Standard & Poor's. Please see **Exhibit 1** for Boots' financial information and **Exhibit 2** for Boots' equity market information at Boots' fiscal years ending March 31, 1998, 1999 and 2000.

Occupational Pension Schemes in the U.K.

Occupational pension schemes were first established in the U.K. public sector in 1712 for customs and excise officers. Following the introduction of actuarial tables by the Equitable Life Assurance Society in 1762, private sector companies such as the East India Company started introducing pensions for their employees.[7] In 2000, the United Kingdom utilized a three-tier pension system, with the government supplying a basic, flat-rate pension for residents in retirement age, the government or an employer providing an earnings-based pension for retired employees, and individuals contributing to their own savings for their retirement years.

In 2000, in addition to paying National Insurance contributions towards a basic government pension, employees and employers paid a percentage of salaries towards secondary, earnings-based government pensions. An employee could opt out of the state earnings-based pension by participating in an occupational pension scheme or an individual pension scheme. If an employee opted-out of the state earnings-related pension, the employee's and the employer's pension taxes to the government were reduced and instead could be used to fund the employer's pension scheme. During the tax year ending in April 2000, approximately 27 million U.K. workers paid National Insurance contributions, of whom 8 million contracted out of the secondary government pension.[8]

There were approximately 110,000 occupational pension schemes in the United Kingdom in 2000.[9] 70% of U.K. employees were offered occupational pension schemes by their employers in 2000.[10] Approximately 5.7 million employees were accruing benefits (i.e., they were current members) in occupational pension schemes in 2000. Another 5.2 million employees had accrued benefits from past employment that were payable in the future (deferred members), and 5.2 million current retirees were receiving pensions (pensioners or retirees) from occupational pension schemes. Among the 5.7 million employees who were accruing occupational pension benefits, 4.6 million participated in defined benefit (DB) schemes.[11] In a DB scheme, an employer promised to pay a retired employee a fixed amount from retirement through the end of that employee's life. Generally this amount was based on years of service and some percentage of final salary. In contrast, for a defined contribution (DC) scheme, the amount due to the retiree was based on annual contributions and the contributions' actual investment returns, and was typically paid to the employee as a lump sum upon retirement. DB schemes accounted for approximately 80% of occupational pension assets in the United Kingdom, with a trend away from DB schemes to DC schemes widely expected.[12] On a long-term basis, it was

[7] David Blake and J. Michael Orszag, "Annual Estimates of Personal Wealth Holdings in the United Kingdom Since 1948," *Applied Financial Economics*, Volume 9, 1999.

[8] "Annual Abstract of Statistics, 2003 edition," National Statistics, Table 10.2.

[9] "Regulating Pensions—Introducing OPRA," Occupational Pensions Regulatory Authority, January 2001.

[10] "Living in Great Britain: Results from the 2000 General Household Survey," Office of National Statistics.

[11] "Eleventh Survey of Occupational Pension Schemes," Government Actuary's Department, August 23, 2002.

[12] Ibid.

estimated that an average U.K. employer with a DB pension contributed approximately 15% of pensionable salaries annually to fund its pension scheme.[13]

Assets of U.K. occupational pension schemes (both DB and DC) were valued at £776 billion at year-end 1999.[14] Over 70% of the members, and over 70% of the assets held in occupational pension schemes were associated with the largest 300 schemes, each with over 10,000 members.[15] The asset allocation of private U.K. pension funds (both DB and DC) at year-end 1999 was approximately 51% invested in domestic equities, 24% in international equities, 9% in domestically-issued nominal bonds, 4% in domestically-issued inflation-indexed bonds, 4% in international bonds, 4% in cash and 4% in real estate.[16] U.K. pension funds held over one-fifth of the value of listed U.K. equities at year-end 1999, owning approximately £390 billion of domestic equities out of a £1.8 trillion total market capitalization.[17] U.K. pension funds also owned over one-fourth of U.K. government debt outstanding on March 31, 2000, representing £75 billion of the total £291 billion total market holdings of U.K. government debt.[18] U.K. pension funds held an estimated £26 billion of corporate bonds issued in the United Kingdom, representing 30% of the £87 billion outstanding at year-end 1999.[19] Please see **Exhibit 3** for historical asset allocation and equity share ownership for U.K. pension funds.

Defined Benefit (DB) Occupational Pension Schemes

U.K. companies were not required to offer defined benefit pension schemes to their employees in 2000. However, if a company offered such a benefit to employees, the scheme was required to meet certain guidelines. Typically, members of a defined benefit scheme earned an annual pension income of 1/60th of their final salary for each year of service in the scheme; thus, a person with 30 years of service would be eligible for 30/60, or 50%, of his or her final salary per year in retirement. U.K. pension law required that payments made to retirees be indexed to inflation for up to 5% per year. Benefits of deferred pension scheme members were also indexed to inflation for up to 5% per year. In the case of deflation, benefits were not reduced.

Basic Structure and Funding Requirements

Separate trust In the United Kingdom, a company operating a defined benefit pension scheme was required to establish a trust, separate from the assets of the company, with funds to pay the pension beneficiaries. Trustees were appointed by the company to oversee the schemes' assets and compliance with pension rules. Scheme members earned benefits for every year they participated in the scheme, and the sponsor company put assets in the trust to pay these benefits to members in the future. If the company went out of business, pension scheme members counted primarily on the

[13] "Pension Fund Indicators 2002," UBS Global Asset Management.

[14] "Annual Abstract of Statistics, 2003 edition," National Statistics, Table 22.18.

[15] "Eleventh Survey of Occupational Pension Schemes," Government Actuary's Department, August 23, 2002.

[16] "Pension Fund Indicators 2002: A long-term perspective on pension fund management," UBS Global Asset Management, May 2002.

[17] "Share Ownership, 2001 Edition," National Statistics.

[18] "Holdings of the British government securities by sector," Bank of England Statistical Abstract 2002, Part 1, Table 15.4.

[19] Casewriter's calculations based on UBS Global Asset Management pension asset allocation data and Bank of England Statistical Abstract 2002, Part 1 Table 19.2.

assets in the trust for any accrued retirement benefits. In this sense, a pension trust was like a collateralized loan from the scheme members to the corporation. While in the United States, a government agency, the Pension Benefit Guaranty Corporation (PBGC) insured the accrued pension benefits of employees of bankrupt companies up to certain limits, in the United Kingdom, no government protection was available for underfunded corporate pensions.

The Maxwell scandal After the so-called Maxwell scandal of 1991, pressure mounted for stricter funding requirements and other protections for corporate pensions. In the Maxwell scandal, just after media mogul Robert Maxwell died in November 1991, it was revealed that he diverted over £400 million from his company's pension schemes.[20] Shortly thereafter, Maxwell's company, The Mirror Group PLC, declared bankruptcy, leaving the pension schemes' 32,000 members without enough money to cover their accrued pension benefits. In response, The Pensions Act of 1995 took effect in 1997, and introduced a Minimum Funding Requirement (MFR) for defined-benefit pension schemes sponsored by corporations.

The Minimum Funding Requirement (MFR) The Pensions Act required an actuarial valuation of a pension scheme's assets and liabilities to be completed at least once every three years. At this valuation, the MFR was calculated by comparing the market value of a pension scheme's assets with the actuarial value placed on the scheme's accrued liabilities. The ratio of the fund's assets to its accrued liabilities was called the MFR funding ratio. For example, if assets equaled liabilities, the MFR funding ratio was 100%.

At each actuarial valuation, the company committed to a contribution schedule, approved by the scheme's trustees, to maintain the MFR funding ratio at 100%. For a scheme at less than 100% of MFR, the contribution schedule would show how the scheme would be brought to 90% of the MFR within one year, and up to 100% of MFR within five years. The scheme actuary certified the contribution schedule, and trustees monitored the company's contributions against this schedule annually until the next MFR valuation.[21]

Three discount rates were used to value MFR pension liabilities. Liabilities for benefits of current retirees were discounted using a U.K. government bond yield. The liabilities for future retirees (both current members and deferred members) were discounted at a rate based on an assumed long-term rate of return in U.K. equities. A blend of equity and government bond returns was used to value liabilities for scheme members within 10 years before normal retirement age.

Wind-up Members of a terminated, or wound up, pension scheme had claims against the pension trust and the sponsor company for the greater of 100% of the MFR or the amount of assets in the pension trust necessary to fund all accrued liabilities and inflation increases. In other words, at the time of scheme termination, if the scheme was funded at less than 100% of the MFR, the pension trustees calculated a debt against the company for the MFR shortfall. The lien against the company did not have a senior status, but if a company failed to make payments required by the MFR, the trustees notified a government pension regulator that could levy fines or penalties against the company.[22] If the scheme was funded at greater than 100% of the MFR, scheme members had a claim on all assets of the scheme up to the amount needed to pay accrued liabilities and inflation increases.

A specified priority schedule was used to distribute assets of a wound-up pension scheme. Current retirees were paid first. A scheme funded at 100% of the MFR would generally have enough

[20] "The Pensioner's Tale," BBC News, March 29, 2001 at <http://news.bbc.co.uk>, accessed January 24, 2003.

[21] "Review of the Minimum Funding Requirement," The Pensions Board, Faculty and Institute of Actuaries, May 2000.

[22] "A Guide to the Minimum Funding Requirement," Occupational Pensions Regulatory Authority, 1999bid.

money to purchase annuities for all current retirees or fully pay these retirees the full present value of their accrued benefits. After all current retirees were paid, any remaining funds were used to pay future retirees—both current scheme members and deferred members— a pro-rata share of their accrued benefits. Typically, these younger members of a scheme funded at 100% of the MFR could expect to collect a transfer value of 50-70% of their accrued benefits. It was assumed that the full value of their accrued benefits could be replaced if the transfer value would later be invested in equities.[23] If funds remained in the pension trust after all members were paid their full basic benefits, the next order of priority was to pay inflation increases for current retirees, followed by inflation increases for non-retired scheme members.

In principle, after all benefits and inflation increases were paid, any surplus funds in the trust could be used to enhance members' benefits. Alternatively, subject to the rules of each specific pension scheme, surplus funds could be returned to the employer.[24] If funds were reverted to the employer, the trustees withheld a 35% tax from the reverted assets, but the employer was not subject to additional taxes for reclaiming the funds.[25]

Tax Issues

Employer's contributions into a pension trust were deductible from corporate income for tax purposes. Income earned from pension assets, whether in the form of dividends, capital gains, interest or other, generally accumulated tax-free. In addition, until April 1999, the government gave U.K. residents a dividend tax credit equal to 20% of their dividend income. Taxpayers applied dividend tax credits against any taxes they owed. Non-taxpayers such as pension funds received their dividend tax credits in cash. However, after June 1997, tax-exempt entities such as pension funds were no longer eligible for dividend tax credits, and the credit for taxable entities was reduced to 10% in April 1999. U.K. pension funds lost an estimated £5 billion per year due to this change.[26]

With regard to corporations, the statutory income tax for large U.K. corporations in 2000 was 30%. Interest expense was tax deductible. Capital gains, dividends and interest income received from owning securities of other companies were subject to normal corporate income tax. Taxes were not imposed on the issuing, buying or selling of a company's own shares. Dividends were paid to shareholders on an after-tax basis.[27]

Asset Management Requirements

A pension trustee had a fiduciary duty to preserve the trust capital and apply the capital and its income according to the trust deed. However, other than a limit of 5% of investments in the company's own securities, there were no quantitative portfolio restrictions for the pension fund. In effect, trustees could invest pension assets in any combination of equities, bonds, real estate,

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[23] "Review of the Minimum Funding Requirement," The Pensions Board, Faculty and Institute of Actuaries, May 2000.

[24] "Winding Up of Pension Schemes," Office of the Pensions Advisory Service, <http://www.opas.org.uk>, accessed February 12, 2003.

[25] Casewriter discussion with U.K. Inland Revenue, Department of Occupational Pensions, on July 8, 2003.

[26] "British Chancellor Urged to Restore Pension Credit for Company Plans," *Pension and Benefits Daily*, March 6, 2002.

[27] "A Survey of the UK Tax System," Institute for Fiscal Studies, at <http://www.ifs.org.uk/taxsystem/corp1time.shtml>, accessed December 20, 2002.

international assets, bank deposits or other assets as long as trustees considered appropriate diversification and suitability of investments for the pension.

Three-fourths of U.K. pension funds managed assets exclusively through external managers, with asset management fees averaging 17 b.p. for active bond managers and 29 b.p. for active domestic equity managers in 2000.[28] However, in addition to asset management fees, the all-in transaction costs for the U.K. equity portion of a pension schemes' assets were estimated to be 50 b.p. for stamp duty, 15 b.p. for commissions and 20 b.p. for less visible costs such as market impact and implementation shortfall, or a total of 85 b.p. in addition to asset management fees.[29]

Accounting for Corporate Pension Sponsors—FRS 17

In January 2000, the U.K. Accounting Standards Board announced its intention to implement a new pension accounting standard, FRS 17. Implementation of FRS 17 would start in 2001 and take full effect in 2003. Under FRS 17, a U.K. company would include the net asset or net liability value of its DB pension fund(s), if any, on the company's own balance sheet. Assets would be recorded at market values. Liabilities, after accounting for expected future wage increases and other items, would be discounted to present value using the prevailing AA corporate bond yield.

FRS 17 represented a significant departure from current practice. The pre-FRS 17 accounting regime allowed smoothing of pension gains and losses over time, discretion over the measurement of liabilities and discount rates, and relegated pension information to off-balance sheet footnotes in company financial reports. Pension experts noted that similar lack of transparency and smoothing functions of U.S. accounting rules enabled U.S. pensions to invest in an inordinate amount of equities.[30] Thus, experts debated FRS 17's possible effects on pension fund asset allocation. Some felt FRS 17 would introduce large swings in pension funding positions for the typical, equity-weighted U.K. scheme. Since these swings would show up on corporate balance sheets, FRS 17 might encourage pension funds to reduce equity exposures. One analyst estimated that the balance sheet of a U.K. company with a typical pension fund would be 15 times more volatile with FRS 17 than with the existing U.K. accounting.[31]

Bond Markets in the U.K.[32]

The U.K. fixed income market shared in the trends that had characterized the world's major fixed income markets since the mid-1990s. Three major trends were operating in these markets.

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[28] "Market Size and Asset Mix -- United Kingdom," Greenwich Associates, September 26, 2002 and "Manager Fees and Directed Commissions -- United Kingdom," Greenwich Associates, September 26, 2002.

[29] "Pension Fund Indicators 2002," UBS Global Asset Management, May 2002.

[30] Jeremy Gold, "Biased Methodology Enables Equity Investment By Defined Benefit Pension Plans," Pension Research Council Working Paper, University of Pennsylvania Wharton School, 2001.

[31] Ian Martin, "FRS 17 -- The Implications for Pension Funds," Morgan Staley Global Pensions Group, October 2001.

[32] Unless specifically noted otherwise, data in this section is derived from "The changing shape of fixed income markets," Bank of International Settlements Papers No. 5, October 2001, and "Gilt Review, 1999-2000," U.K. Office of Debt Management.

Fiscal Balance and Liquidity in Gilt Markets

First, substantial progress toward fiscal balance led many governments to reduce the size of new public debt offerings, even to buy back outstanding public debt. The U.K. public sector deficit as a percentage of gross domestic product (GDP) declined from 7.9% in 1993 to 2.2% in 1997, and the U.K. budget was in surplus in 1998 and 1999.[33] In 2000, the public sector surplus was expected to reach 2% of GDP. As a result, the net issuance of U.K. government debt securities declined dramatically, from about £50 billion in 1993 to about (£14) billion in 1999. In that year, gross issuances of gilts amounted to about £14 billion. The nominal value of gilts outstanding in 2000 was £291 billion.

One effect of the decline in new public debt offerings had been a decrease in liquidity of the gilt market, particularly in longer-dated issues. In response, The Bank of England and the Debt Management Office had initiated a program of "switch auctions"[34] and larger offerings of particular bonds aimed at improving market liquidity. Since 1997, most new debt offerings had been focused on the long end of the yield curve, mainly 10-year nominal gilts. As a result, gilts were still the most liquid bond market in the United Kingdom.

Non-government Debt

Second, while issuance of new government debt securities had slowed down significantly, the issuance of new debt by corporations, supranational financial institutions (such as the World Bank or the European Bank of Reconstruction and Development) and other non-government institutions had grown spectacularly. As a result, the market value of outstanding of non-gilt sterling-denominated bonds, including corporate, financial institution, utility, supranational and non-U.K. sovereign bonds, had almost doubled from £75 billion at year-end 1995 to £147 billion at year-end 1999.[35] Supranational institutions had played an active role in the U.K. debt market, with issuance that amounted to 1% of GDP in 1998-1999. Similar to government issues, the maturity of new non-government debt was focused on longer-term issues. Please see **Exhibit 4** for yields on U.K. government securities and AAA and AA rated corporate bonds prevailing on March 31, 2000.

Derivatives

Finally, over-the-counter fixed income derivative markets, particularly for interest rate swaps and credit default swaps, was growing rapidly.[36] Average daily turnover in the United Kingdom for over-the-counter interest rate instruments, which are typically measured by notional amounts traded in U.S. dollars,[37] was estimated at $123 billion in April 1998, of which approximately 13%, or $16 billion a day was for contracts denominated in British pounds sterling.[38] The overall turnover of

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[33] EIU Data Services. U.K. GDP was approximately £859 in 1998 and £902 in 1999.

[34] A switch auction allows bondholders to convert their holdings of less liquid bond issues into more liquid ones.

[35] Barclays Capital Sterling Bond Non-Gilt Credit Index.

[36] In a typical interest rate swap agreement, one party agrees to periodically pay a fixed interest on a notional amount to the other party, in exchange for a floating interest on the same notional amount. In a default swap agreement, one party agrees to pay a fixed spread in exchange for the opportunity to sell a reference bond at face value to the other party in the event of default.

[37] The average GBP/USD exchange rate in 1998 was .60 in 1998, and .62 in 1999.

[38] "The U.K. Foreign Exchange Market and Over-the-Counter Derivatives Markets in April 2001—Results Summary," The Bank of England, 2001.

interest rate derivatives in the United Kingdom in 1998 represented over 100% growth in turnover volume since 1995. Out of a global market of $60 trillion in notional value of interest rate derivatives outstanding at December 31, 1999, contracts in pounds sterling represented $4.6 trillion.[39] Interest rate derivatives denominated in British pounds sterling had grown by over 200% from the notional amount outstanding in 1997 of $1.5 trillion.[40]

Inflation-indexed Bonds

A special characteristic of the U.K. bond market was that inflation-linked debt comprised a significant fraction of the market. This was largely the result of consistent issuance of inflation-linked debt by the government since 1981. In 2000, inflation-linked gilts comprised 23% of the gilt market.[41] The principal and coupons of inflation-linked bonds were adjusted to reflect changes in an inflation index from the bond's issue date and the coupon payment and redemption dates. In the United Kingdom, inflation-linked gilts were tied to the Retail Prices Index, or RPI, with an eight-month indexation lag. The primary issuer of sterling-denominated inflation-linked bonds in 2000 was the U.K. government, which was committed to issue a minimum of £2.5 billion per year of new inflation-linked gilts, with maturities ranging from 10 to 30 years. Non-government issuers were also issuing sterling-denominated inflation-linked bonds with increasing frequency. Please see **Exhibit 5** for government and non-government issued inflation-linked bonds as of March 31, 2000.

In general, inflation-linked bonds were traded less actively than nominal bonds, with 80% of such bonds in the United Kingdom owned by long-term investors such as life insurance companies and pension funds.[42] By 2000, a market for inflation swaps[43] was also developing in the United Kingdom, with several banks acting as market makers in such derivatives.

The Boots Pension Scheme[44]

In April 2000 the Boots Pension Scheme was one of the largest pension funds in the United Kingdom, with about 70,000 members and £2.3 billion in assets. About 54% of the scheme's members were current members, 22% were deferred members, and 25% of the scheme's members were retired and collecting pensions. Annual contributions into Boots' pension fund were about the same as

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[39] "The global OTC derivatives market at end-December 1999," Bank for International Settlements press release, May 18, 2000.

[40] "ISDA Market Survey," International Swaps and Derivatives Association, 2003.

[41] Bank of England Statistical Abstract 2002 Table 15.2.

[42] "Inflation Linked Bonds -- A User's Guide," Barclays Capital, September 2002.

[43] Inflation swaps were similar to interest rate swaps, except that instead of one party typically swapping a fixed interest rate for a floating interest rate, one party might agree to pay a floating, inflation-indexed interest rate on a notional amount in exchange for a nominal fixed rate. Alternatively, one party may contract to pay the current expected inflation over a period of time, in exchange for another party paying actual inflation during that period.

[44] Unless specifically noted otherwise, data in this section is derived from "Boots Pension Scheme Report and Statement of Accounts for the year ended 31 March 2000," "Boots Pension Scheme Report and Statement of Accounts for the year ended 31 March 2001," and The Boots Company PLC, "Annual Reports and Accounts 2000."

annual payments made to current pensioners.[45] The duration of Boots' pension scheme liabilities was estimated to be approximately 17 years.[46]

For the decade before Boots' actuarial valuation in 1998, Boots had enjoyed a "pension holiday," during which time the pension trust assets exceeded the pension's liabilities, and the company did not have to contribute additional funds to the pension scheme. In addition, Boots' pension assets had grown consistently over the decade as U.K. equity markets exhibited strong performance. Please see **Exhibit 6** for information on the assets of the Boots pension scheme as of March 31, 2000, **Exhibit 7** for historical return statistics on U.K. equities, government bonds and other assets, **Exhibit 8** for average U.K. pension fund returns, wages and retail price inflation for 1990–1999.

But despite the pension's asset valuation of £2.0 billion and accrued liabilities of £1.7 billion at the actuarial valuation on April 1, 1998, company actuaries noted that Boots' pension holiday would soon end. Boots decided in 1999 "as a matter of prudence" to resume pension contributions at £50 million per year, or about 10% of pensionable salaries, until the next actuarial valuation in 2001.

The Boots pension equity portfolio was managed by one of the few large U.K. asset managers that accounted for a large proportion of pension management in the United Kingdom. The asset manager's objective for Boots' pension scheme was to outperform a certain benchmark over rolling three-year periods. In the three-year period ending March 31, 2000, the benchmark return was 14.6%, compared to an annualized return of 13.9% for the equities in Boots' pension funds. However, the equities in Boots' pension scheme were 0.1% ahead of the benchmark for the one-year period ending March 31, 2000, and 1.4% ahead of the benchmark in the first quarter of 2000.

Boots' pension trustees were in the process of divesting of the scheme's real estate assets and reinvesting the proceeds in long-term, inflation-linked government bonds. Real estate was considered by some investment managers to be a good inflation hedge.[47] Nevertheless, Boots, with its vast retail operations, had significant exposure to real estate. The pension trustees thought that if real estate performed well, Boots would be in a good position to fund the pension plan. But if real estate did not perform well, the company could be in distress at the same time that the company's pension assets were exposed to declining real estate values. Boots' Pension Scheme held 4% in real estate as of March 31, 1999 and 1% as of March 31, 2000. The remaining real estate was scheduled to be sold by March 31, 2001.

The 100% Bond Proposal

The trustees of the Boots pension scheme reviewed the investment policy for the scheme's pension assets, and considered the proposal to invest the £2.3 billion pension assets 100% in bonds. The bonds would be passively managed.[48] Legal advisors had informed Boots' pension trustees that, when considering asset allocation, they had a duty to the scheme members, since the assets acted as security for their benefits, and to the company, since it was responsible for the 'balance of cost.' Thus

[45] "Equities and Bonds in Corporate Pension Funds: Is Boots Right?" Merrill Lynch Global Securities Research and Economics Group, June 26, 2002.

[46] Ben Alexander, "Gentlemen Prefer Bonds," MiFFT 2002, London Business School.

[47] "Property is FRS 17 Aid," *The Financial News*, December 17, 2001.

[48] "Equities and Bonds in Corporate Pension Funds: Is Boots Right?" Merrill Lynch Global Securities Research and Economics Group, June 26, 2002.

the trustees worked in consultation with the company regarding the pension scheme's asset allocation decisions.[49]

While the scheme's surplus and Boots' recent pension holiday was directly related to the outperformance of equities over bonds in the previous years, the trustees considered several arguments in support of the unprecedented 100% bond proposal. One of the chief arguments was that such a move would significantly improve the security of the benefits promised to members, by achieving a much closer match of the scheme's assets and liabilities. It would also considerably reduce the potential volatility in the pension scheme's funding levels, thus providing a more stable contribution rate for Boots in the future.

The reduction in funding volatility would not be the only likely effect of such a move on Boots. Financial experts had long argued that a pension scheme was integral part of the balance sheet of a corporation, because the company was ultimately responsible for funding the scheme. From this perspective, a change in Boots' £2.3 billion pension scheme would be viewed as if The Boots Company itself had sold equities on its balance sheet and purchased bonds, effectively reducing leverage and shareholder risk.[50] If so, should Boots relever its balance sheet by engaging in a share buyback plan, and issue new debt? How much additional debt might be desirable, and how much might be feasible?

Regardless of these economic effects, would this move be desirable under the current funding and accounting rules, and in light of the forthcoming changes in these rules? Another possible consideration was the likely evolution of financial markets in the future. However, Boots had always adhered to a rule when considering financial decisions: Do not take positions on the company's share price, which is determined by the market with access to all relevant information.[51] This decision-making framework implied that Boots did not try to guess or time the direction of financial markets.

Finally, in making their decision, the trustees had to consider the practical feasibility of such a plan. Which bonds would best match the liabilities of the pension scheme? Should the trustees publicly announce their intentions? What if other companies decide to follow Boots' proposed move?

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[49] "Boots Pension Scheme Trustee Review 2001," The Boots Company, 2001.

[50] See footnote 3.

[51] The Boots Company PLC, "Annual Reports and Accounts 2002."

Exhibit 1 The Boots Company PLC, Selected Financial Information

Standardized Balance Sheet, Millions of £	31-Mar-2000	31-Mar-1999	31-Mar-1998
Assets			
Cash & Short Term Investments	422.2	138.0	264.3
Receivables - Net	320.6	315.7	293.7
Inventories - Total	689.5	722.0	709.3
Other Current Assets	83.9	72.4	93.2
Total Current Assets	**1,516.2**	**1,248.1**	**1,360.5**
Net Property Plant and Equipment and Other Assets	1,883.3	1,873.3	1,652.9
Total Assets	**3,389.5**	**3,121.4**	**3,113.4**
Liabilities			
Accounts Payable	359.0	363.0	373.2
Short Term Debt and Curr Portion of LT Debt	210.8	246.3	196.9
Other Current Liabilities	583.4	581.7	584.9
Total Current Liabilities	**1,153.2**	**1,191.0**	**1,155.0**
Long Term Debt	449.0	186.5	216.8
Other Liabilities	67.0	69.5	105.3
Total Liabilities	**1,669.2**	**1,447.0**	**1,477.1**
Stockholders' Equity	**1,720.3**	**1,674.4**	**1,636.3**
Total Liabilities & Shareholders' Equity	**3,389.5**	**3,121.4**	**3,113.4**

Standardized Income Statement, Millions of £	31-Mar-2000	31-Mar-1999	31-Mar-1998
Net Sales or Revenues	**5,187.0**	**4,912.4**	**4,975.6**
Cost of Goods Sold	2,637.9	2,491.0	2,545.3
Depreciation	154.4	140.1	120.7
SG&A Expense	1,821.4	1,719.9	1,767.4
Total Operating Expenses	**4,613.7**	**4,351.0**	**4,433.4**
Operating Income	**573.3**	**561.4**	**542.2**
Extra/Unusual Credit (Charge) [a]	(22.0)	(76.3)	5.5
Non-Operating Interest Income	59.5	22.5	50.7
Other Income (Expenses) [a]	12.9	(296.5)	(131.0)
EBIT	**623.7**	**211.1**	**467.4**
Interest Expense on Debt	53.6	40.8	35.5
Pretax Income	**570.1**	**170.3**	**431.9**
Income Tax	163.3	146.3	169.2
Minority Interest + Equity in Earnings	(7.8)	(0.1)	1.3
Net Income Available to Common	**399.0**	**23.9**	**264.0**

Standardized Cash Flow Statement, Millions of £	31-Mar-2000	31-Mar-1999	31-Mar-1998
Total Operating Activity	**599.3**	**489.5**	**372.8**
Total Investing Activity	**-223.6**	**-403.3**	**-181.3**
Interest Paid	-35.0	-43.1	-44.3
Interest Received	25.2	18.2	33.8
Dividends Paid	-216.3	-207.1	-563.3
Increase (decrease) in Short Term Deposits	-283.6	122.8	371.9
Lease Capital	-6.9	-6.5	-5.5
5.5% Eurobond 2009	300.0	0.0	0.0
Change in Other Borrowings	-25.4	25.9	-15.0
Issue Share Capital	0.5	8.8	11.7
Repurchase Shares	-95.4	0.0	0.0
Total Financing Activity	**-336.9**	**-81.0**	**-210.7**
Net Change in Cash	**38.8**	**5.2**	**-19.2**

Source: Adapted from One Source.

[a]1999 figures are associated with disposal of a business.

Exhibit 2 Equity Market Information, The Boots Company PLC

	31-Mar-2000	31-Mar-1999	31-Mar-1998
Shares outstanding (millions)	899.3	915.20	912.90
Share price, GBP p	537.25	894.50	957.00
Beta (5-year monthly historical observations to FTSE 100 index)	0.70	0.64	0.93

Source: Adapted from Bloomberg.

Exhibit 3 Historical Asset Allocations and Equity Share Ownership by U.K. Occupational Pension Schemes

Year-end	U.K. Equities	Int'l Equities	U.K. Bonds	Index-Linked Bonds	Int'l Bonds	Cash	Real Estate	% Ownership of Total U.K. Equity Market	Total Value of U.K. Listed Shares (£ billion)
1963	47%	–	51%	–	–	2%	–	6.4%	£ 27
1975	45	5	26	–	–	9	15%	16.8	45
1981	45	10	21	2	–	4	18	26.7	92
1989	52	20	7	3	3	4	8	30.6	505
1994	54	23	5	4	4	4	6	27.8	762
1997	52	20	7	5	3	7	5	22.1	1,268
1998	51	20	9	6	4	5	5	21.7	1,504
1999	51	24	9	4	4	4	4	19.6	1,807

Source: Adapted from UBS Global Asset Management, "Pension Fund Indicators 2002: A long-term perspective on pension fund management," May 2002; and "Share Ownership, A Report on Ownership of Shares as at 31 December 2001," National Statistics, 2002.

Exhibit 4 Bond Yields on March 31, 2000

	U.K. Gilts	U.K. Treasury Strips	U.K. Inflation Linked Gilts[a]	Corporate £ AAA	Corporate £ AA[b]	U.S. Treasury Strips
3 month	6.05	6.09		6.45		5.87
6 month	6.29	6.33		6.71		6.09
1 year	6.41	6.30		6.86	1-3 years	6.30
2 year	6.34	6.28	1-5 years	6.80	6.91	6.34
3 year	6.30	6.25	3.72	6.85	3-5 years	6.35
4 year	6.04	6.07		6.71	6.85	6.36
5 year	5.87	5.96		6.65	5-7 years	6.35
7 year	5.76	5.74	5-15 years	6.48	6.83	6.33
8 year	5.60	5.62	2.18	6.37	7-10 years	6.33
9 year	5.48	5.45		6.30	6.64	6.32
10 year	5.26	5.31		6.17	10-15 years	6.33
15 year	4.93	4.89		6.02	6.99	6.27
20 year	4.56	4.65	15+ years	5.75	15+ years	6.18
25 year	4.62	4.52	1.84	5.61	6.29	6.10
30 year	4.40	4.44		5.51		6.00

Source: Adapted from Bloomberg.

[a]Barclays Capital Sterling Inflation-Linked Bond Indices Average Annual Yields for Gilt Linkers 1-5, 5-15, and 15+ years.

[b]Merrill Lynch Sterling Corporate AA Bond Effective Yields for indices# UC21, UC22, UC23, UC24, UC26, UC27 and UC28.

Exhibit 5 Sterling-denominated Inflation-linked Bonds as of April 2000

Issuer	Bond	Issue Size (£mm)	Issue Dates
Gilts			
U.K.	2% IL 2006	£ 2,500	Jul-81 to Oct-97
U.K.	2.5% IL 2011	3,475	Jan-82 to Jul-99
U.K.	2.5% IL 2001	2,150	Aug-82 to Oct-96
U.K.	2.5% IL 2003	2,700	Oct-82 to Jan-98
U.K.	2.5% IL 2009	2,625	Oct-82 to Sep-97
U.K.	2.5% IL 2016	4,495	Jan-83 to Oct-99
U.K.	2.5% IL 2020	3,800	Oct-83 to Dec-97
U.K.	2.5% IL 2013	4,200	Feb-85 to Nov-98
U.K.	2.5% IL 2020	3,800	Oct-83 to Dec-97
U.K.	4.125 IL 2030	2,150	Jun-92 to Apr-99
U.K.	4.375 IL 2004	1,300	Sep-92 to Aug-98
Total gilts issued		**34,215**	
Non-government			
Halifax	3.875% IL 2020	£ 15	Oct-85
Nationwide Building Society	3.875% IL 2021	60	Jul-86 and Apr 87
Nationwide Building Society	4.25% IL 2024	50	Feb-89
Dartmoor Investment Trust	6.25% IL 2005	19	Apr-90 and Jun-92
Anglian Water Services Ltd	5.5% IL 2008	100	Jul-90
The Housing Finance Corporation	5.65% IL 2020	100	Nov-90 and Mar-93
Severn River Crossing	6% IL 2012	131	Apr-92
New City & Commercial Invest. Trust	5.06% IL 2006	13	Feb-93
The Housing Finance Corporation	5.5% IL 2024	56	Dec-94 and Dec-95
Dartmoor Investment Trust	5.618% IL 2016	18	Jun-96
Abtrust New Pref. Inc. Invest. Trust	5.375% IL 2007	8	Mar-97
Meridian Hospital Co PLC	4.1875% IL 2028	91	Jul-98
Criterion Healthcare PLC	3.370% IL 2031	65	May-99
Endeavour Schools PLC	3.607% IL 2031	137	Aug-99
BG Transco Holdings PLC	4.1875% IL 2022	503	Dec-99
HpC King's College Hospital PLC	3.443% IL 2036	92	Dec-99
Anglian Water Services Ltd	4.125% IL 2020	150	Apr-00
British Telecommunications PLC	3.5% IL 2025	250	Apr-00
Road Management Services (A13)	3.642% IL 2028	111	Apr-00
Total non-gilts issued		**1,960**	

Source: Adapted from U.K. Debt Management Office.

Exhibit 6 The Boots Company PLC, Market Value of Pension Assets as of March 31, 2000

Asset, Millions of £	Value on March 31, 2000	Percentage of Total Assets
U.K. equities	£ 1,204.1	52.3 %
Overseas equities	504.9	21.9
Fixed interest securities—U.K. gilts	175.8	7.6
Fixed interest securities—Overseas	131.7	5.7
Index-linked—U.K. gilts	128.9	5.6
Index-linked—Overseas	19.1	0.8
Properties and Property Unit Trusts—U.K.	13.8	0.6
Interest in overseas properties	0.9	0.0
Cash and deposits	114.0	5.0
Other	7.2	0.3
Total investments held to fund defined benefits	**2,300.4**	

Source Adapted from "Report of Statement and Accounts for the year ending March 31, 2001, Boots Pension Scheme," Occupational Pensions Regulatory Authority Pension Schemes Registry: Reference Number 101251956.

Exhibit 7 Historical Data for U.K. Equities, Government Bonds and Other Assets

	U.K. Equities	U.K. Government Bonds[b]	U.K. Government Issued Inflation-linked Bonds (1997–1999 only)[c]	U.K. Treasury Bills	U.K. Real Estate (1966–1999 only)
Market Value of Equities/ Nominal Value of Bonds Outstanding, March 2000. (Billions of £)	£1,821[a]	£195[b]	£66[b,c]	£9[b]	n.a.
Real (inflation-adjusted) return data					
Mean annual return					
1950–1999	9.5%	2.2%	9.3%	1.2%	9.3%
1990–1999	11.5%	6.5%	9.3%	4.0%	4.9%
Standard deviation[d]					
1950–1999	18.7%	5.1%	4.8%	2.2%	26.8%
1990–1999	14.4%	4.3%	4.8%	1.6%	18.9%
1950–1999 Correlation of real (inflation-adjusted) returns with:					
U.K. Equities	100%				
U.K. Government Bonds	34%	100%			
U.K. Government Issued Inflation-linked Bonds (1997–1999 only)	7%	40%	100%		
U.K. Treasury Bills	1%	39%	30%	100%	
U.K. Real Estate (1966–1999 only)	77%	34%	-18%	-5%	100%
1990–1999 Correlation of real (inflation-adjusted) returns with:					
U.K. Equities	100%				
U.K. Government Bonds	40%	100%			
U.K. Government Issued Inflation-linked Bonds (1997–1999)	7%	40%	100%		
U.K. Treasury Bills	14%	49%	30%	100%	
U.K. Real Estate (1966–1999)	65%	41%	-18%	-4%	100%

Source: Casewriter's calculations based on data from Global Financial Data, Datastream, London Stock Exchange, Bank of England and U.K. Debt Management Office.

[a]"Primary Market Fact Sheet" London Stock Exchange March 2000.

[b]Bank of England Statistical Abstract 2002 Tables 15.2 and 15.4 Nominal value of U.K. government bonds outstanding includes nominal bonds only and does not included inflation-linked bonds.

[c]Value includes effect of inflation indexation on principal amount. The U.K. government started issuing inflation-indexed bonds in 1981; return data is calculated in this exhibit starting in 1997. The market for corporate and supranational issuers of inflation-indexed bonds was nascent, but growing. As of the end of April 2000, 16 corporations and supranational issuers had sterling-denominated, long-term index-linked bonds outstanding of approximately £2 billion.

[d]Annualized values based on monthly data samples.

Exhibit 8 Average U.K. Pension Returns, Wage and Retail Price Inflation, 1990–1999

Year	Average Pension Fund Index	Wages and Salaries	Inflation (retail prices)
1990	-11.4%	10.3%	9.3%
1991	17.7	5.9	4.5
1992	17.5	4.8	2.6
1993	25.5	2.8	1.9
1994	-3.0	4.2	2.9
1995	19.6	2.7	3.2
1996	10.4	4.4	2.5
1997	16.8	4.9	3.6
1998	14.9	4.3	2.8
1999	20.4	6.3	1.8

Source: Adapted from UBS Global Asset Management, "Pension Fund Indicators 2002: A long-term perspective on pension fund management," May 2002.