



C A M B R I D G E   A S S O C I A T E S   L L C

## AN INTRODUCTION TO FIXED INCOME INVESTING FOR ENDOWMENTS

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## Introduction

Bonds serve three primary roles in a U.S. institutional portfolio: a hedge against deflation, a source of liquidity and income, and diversification to a portfolio. Investors frequently hold bonds as a form of catastrophe “insurance,” as they protect both capital value and income streams of a portfolio during periods of extended economic contraction or deflation. In such periods, corporate profits fall sharply, often resulting in severely depressed stock prices. Companies cut stock dividends and the government usually lowers interest rates. These actions reduce the income stream from stocks and short-term fixed income securities. In this environment, the best performers are likely to be high-quality, long-term non-callable bonds.

Bonds provide a portfolio with a source of liquidity and income, as well as diversification. Through periodic payments to the purchaser in the form of coupons, this consistent source of income can help meet current spending needs of the institution when equity performance disappoints. Since bond returns are not perfectly correlated to stock returns, a hybrid stock and bond portfolio can offer an investor a risk/return tradeoff superior to an all-equity portfolio. By diversifying among active, strategy-focused bond managers, such as high-yield or emerging markets bond managers, there are opportunities for potentially enhanced portfolio returns. Yet, it is important to note that the high-yield and emerging debt markets are significantly more volatile than investment-grade U.S. bonds, and investors must be careful when deciding to enter and exit these markets.

## The Evolution of Fixed Income Investing

In the 1950s, prudent institutional investors held most of their assets in fixed income securities because they considered equities too speculative to warrant a dominant allocation. After all, in the first 45 years of the twentieth century, bonds returned 5.1% annually, with a standard deviation of 3.9%, while stocks returned 7.3% annually with a standard deviation of 23.2%. Although such precise measures as Sharpe ratios were not part of the investment vocabulary of those days, investors have always understood the trade-off between risk and return; the Sharpe ratio for bonds during these 45 years was 0.41 while for equities it was 0.16—indicating that bonds generated a higher risk-adjusted return than equities. As postwar inflation eroded the value of fixed income holdings and the earnings power of U.S. companies expanded, institutional thinking gradually shifted toward a realization that the need to preserve purchasing power necessitated increased long-term allocations to equities, despite the greater variability of their returns. As investors became increasingly aware of the long-term opportunity cost of a significant allocation to fixed income, they still valued bonds for their shorter-term diversification benefits: during the period 1945-69, stock and bond returns had a correlation of -0.04, in contrast to a correlation of 0.49 for the period 1901-45. By the early 1980s, most institutional investors had asset allocation policies of 60% in stocks and 40% in bonds, or 70%/30% for more aggressive investors seeking to earn higher real returns.

Today, institutions measure variability at the total portfolio level, rather than by the volatility of individual asset classes. They realize that relatively risky but uncorrelated asset classes can be combined to construct a portfolio with aggregate risk significantly below the weighted average of its components, and

regard themselves as long-term investors that can tolerate the greater short-term variability associated with higher allocations to equities. The relatively high correlation of stock and bond returns in the early 1990s (0.60, more than double the 0.27 correlation of the previous decade) further encouraged investors to seek other asset classes to enhance portfolio diversification,<sup>1</sup> while the sharp decline in bond yields pointed to future nominal bond returns in the low single digits. This created a heavy opportunity cost for institutions like endowments and foundations that aimed to earn a real return in excess of their spending rate of 5% or so. In addition, the proliferation of total return spending policies had reduced institutions' dependence on current cash flow, allowing them to reduce fixed income holdings in favor of assets that promise greater real growth over time.

### **Is Insurance Really Necessary and Does it Work?**

Bonds do provide protection during periods of economic contraction or virulent deflation. For example, in the early 1930s, when severe deflation pressured already depressed stock prices, bonds were the only asset class that offered investors shelter from the storm. The relative performance of the Japanese stock and bond markets since 1990 illustrates vividly the effects of the threat of deflation: since 1990, the stock market has had an average annual compound return (AACR) of -5.1%, while bonds have had an AACR of 5.2%. During this period, inflation averaged 0.6% annually, including six years of deflation (1995 and 1999-2003).

Bonds also tend to outperform stocks during economic contractions and equity bear markets. During the twentieth century, all economic pullbacks followed relatively long periods of economic expansion or equity outperformance. For example, the eight-month contraction between August 1957 and March 1958, during which ten-year government bonds outperformed equities by 29.3%, followed a three-year expansion when equities returned 22.6% annually, bonds, -2.1%, and inflation, 1.6%. The 16-month recession from July 1981 until October 1982, during which ten-year government bonds outperformed equities by 23.7%, followed a six-year inflationary expansion when equities returned 13.1% annually, bonds, 2.6%, and inflation, 9.0%. Although each period had its own set of unique circumstances and economic conditions, one consistent trend emerges: prolonged equity bull markets were followed by rather abrupt periods of severe equity underperformance and high absolute returns for bonds.

In addition, there may be some correlation between economic conditions and the surplus/deficit status of some institutions' budgets. For example, if an economic downturn reduced a university's gift flow, it could be forced to lean more heavily on the investment portfolio to meet spending needs. Presumably, this would also coincide with higher demand for student financial aid, which is typically supported from endowment spending.

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<sup>1</sup> For example, from 1980-2003 the returns of venture capital, real estate, and emerging markets equity had correlations in the range of 0.32-0.29 with the returns of U.S. equities, while commodities provided the best diversification relative to equities with a correlation of -0.02.

An additional, albeit remote, risk is the possibility that nominal bonds would perform poorly during a prolonged economic downturn should US\$ interest rates need to rise to attract capital to fund the current account deficit. The United States needs roughly 80% of global savings to fund the current account deficit. Only 10% of this is through private investments, with the remainder coming from governments. If non-U.S. investors stop investing at the current rate or sell what they already own, interest rates may rise and bond values fall even under conditions of severe economic contraction.

## Investment Approach

As an institution develops an investment plan, it must determine its own risk profile to assess its tolerance level for portfolio returns that fall at the lower end of the expected range and how capable its trustees are of maintaining a disciplined investment policy. Such periods of dismal equity performance imply spending shortfalls, the magnitude of which are highly correlated with an institution's spending rate and relative allocation to bonds.

How much an institution should invest in fixed income is very much a function of the role bonds are intended to play in the total portfolio,<sup>2</sup> which is why defining that role is a prerequisite for sizing the bond allocation. Increasingly, institutions are maintaining a relatively small allocation (e.g., 10% to 15%) in an attempt to minimize the long-term opportunity cost of bonds while simultaneously mitigating the higher risk of equities by diversifying among many different kinds of equity assets. Those adopting this approach have determined (or should have determined) that they have the financial resources and political will to withstand a prolonged period (e.g., five or more years) during which equity returns are *not* sufficient to support their spending rates, forcing them either to cut spending or to tolerate depreciation in the real value of their fund.

It should be emphasized, however, that institutions taking this approach should ensure not only that they have sufficient duration in the bond portfolio to realize sharp gains in the event of a decline in equities triggered by a prolonged economic contraction, but also that this duration is pure—that is, bond prices will not be adversely affected by poor economic conditions (as is the case with low-quality corporate bonds), or fail to participate fully in rallies induced by aggressive rate cuts (as is the case with mortgage-backed securities [MBS]). In other words, if an institution holds a relatively small allocation of bonds intended to serve primarily as insurance<sup>3</sup> against a severe and protracted decline in equity prices, it should understand the duration needed to provide sufficient protection. The institution should also minimize the dilution of the quality of the bonds by not allocating funds to sectors of the market liable to underperform Treasuries under such conditions.

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<sup>2</sup> For endowments and foundations, this is generally one or more of the following: serve as a hedge against a prolonged economic contraction, such that program spending could be maintained without the wholesale liquidation of equity holdings at fire-sale prices; offset specific liabilities (e.g., debt); enhance total portfolio diversification; earn the best possible risk-adjusted return; and/or generate current income.

<sup>3</sup> Temporary disability insurance provides the closest analogy. Just as such insurance is designed to ensure that employees can maintain something close to their previous standard of living during a prolonged illness, without eating up their accumulated savings, so a core bond portfolio should be designed to ensure that an institution can maintain something like its former level of program spending without liquidating equities at fire-sale prices, since this would be tantamount to eating the seeds of its portfolio's recovery and subsequent growth.

Unfortunately, many institutions have sharply reduced their allocations to bonds (copying a trend set by leading endowments and foundations), but have changed neither their benchmark nor their manager guidelines to align their actual portfolio with the narrower mandate of a reduced fixed income allocation. This is dangerous because it may result in an institution discovering, after the fact, that it has failed to buy the necessary level of insurance. The danger arises because (1) a diversified bond portfolio, including MBS, lower-grade corporates, and other instruments, will outperform plain, boring, government-only bond portfolios *most of the time*, and (2) bond managers have far greater opportunity to beat their benchmark, net of fees, if they are free to buy “spread product” (i.e., securities that trade at a higher yield than Treasuries because they have higher credit or prepayment risk). Consequently, when an institution reduces its bond allocation and redefines the purpose of the bond portfolio as insurance against a prolonged downturn in equities, its incumbent manager may point out, with supporting documentation, that a narrower mandate of this sort means the bond portfolio will almost certainly generate lower returns over time, and argue for the maintenance of a broad index as the performance benchmark. Although the data marshaled in support of this argument may be accurate, both the premise and the conclusion are wrong. When the purpose of a fixed income portfolio is to provide enough disability insurance to sustain a defined level of program spending during a prolonged downturn in the equity market, how that portfolio performs *most of the time* is a secondary question, entirely subordinate to the question of how well it performs when the insurance is needed. No doubt one can save a little money buying disability insurance from a poorly rated rather than a highly rated underwriter, but is that a sensible gamble? Similarly, why incur the risk that mortgage-backed or corporate spread products might underperform during a flight to quality occasioned by severe economic contraction, when the critical point is to ensure that the insurance pays off in full when needed?<sup>4</sup> After all, the margin of return one might forgo by investing the bond portfolio conservatively is minimal by comparison with the increase in return expected from a larger allocation to equities. In other words, if one shrinks the bond allocation from, say, 25% to 15% of the total, and eliminates spread products from the bond portfolio, the long-term estimated return on the *total* portfolio should still be substantially greater than before.

Essentially, the smaller the allocation to fixed income, the more the need for longer and purer-duration bonds increases. This applies even to portfolios that are not heavily invested in stocks, but are broadly diversified among various equity investments—including absolute return strategies—that may prove more vulnerable to economic stress than anticipated if the alternative investments have a common risk factor of minimal cash flow. Because no one really knows how these eclectic strategies might perform during a severe bear market, there is an unusually high risk of estimation error in the assumptions about correlation and standard deviation that provide the rationale for diversified equity portfolios. On the other hand, it seems reasonable to assume that high-quality bonds will continue to provide a safe haven and bring valuable stability to a fund during periods when there is a negative risk premium for equities and investors become highly sensitive to the risk of absolute loss.

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<sup>4</sup> Note that we do not *know* that highly rated corporate bonds or carefully structured mortgage portfolios will necessarily underperform under such conditions—this is a topic of many debates and much data mining from the 1930s (corporates only, since MBS are a more recent invention)—but why take the risk that they *might* do so?

For institutions that retain a higher allocation to bonds than may be necessary for insurance purposes alone, we would recommend a two-tiered approach to implementing the allocation. The portion of the portfolio designed to absorb short-term volatility and protect spending during periods of economic contraction or financial distress should be invested specifically for that purpose. The rest of the bond portfolio can then be invested opportunistically in spread products, such as high-yield and emerging markets debt, with the objective of providing both diversification and incremental return to the total portfolio.

## What Type of Bonds?

While bonds of all types significantly outperform equities during periods of economic contraction, long-term government bonds perform best because they lack the call risk and reinvestment rate risk associated with MBS and the quality and call risk associated with corporate bonds. During a recession or severe economic slowdown, the Federal Reserve typically cuts interest rates in an effort to reinvigorate economic activity. The bond market tends to anticipate such rate cuts, with the earliest adjustments occurring at the long end of the yield curve. This usually results in falling rates and significant price appreciation for holders of long-term bonds. However, a rapid decline in mortgage rates results in a concomitant increase in the level of refinancing and mortgage-backed bonds are often called. The result is that the price appreciation of MBS is capped on the upside (i.e., they exhibit negative convexity)<sup>5</sup> and investors are faced with reinvesting the proceeds at substantially lower rates.

Investment-grade corporate bonds will only be called if interest rates fall rapidly and remain low. In addition, many corporate bonds issued today no longer include embedded call options. However, corporate bonds contain quality risk, which increases as the bond slides down the quality scale from investment-grade bonds to sub-investment-grade, or junk bonds. While AAA corporate bonds have a very remote chance of actual default, they do not perform as well as Treasuries during a rapid flight to quality such as that of 1998. In addition, the supply of non-callable ten-year+ AAA corporate bonds pales in comparison to the supply of Treasury bonds of the same maturity. As a result, many investors would find it impossible or prohibitively expensive to construct a portfolio with a relatively large allocation to ten-year+ AAA corporate bonds.

When the economy shows signs of overheating, the Federal Reserve generally raises short-term interest rates in an explicit attempt to control growth by raising the cost of capital. As a result, the yield curve typically flattens, as short-term rates rise while long-term rates, which are less responsive to the Fed's actions, may remain unchanged, or even drop slightly if the market anticipates a dramatic slowdown. When the Fed subsequently lowers short-term interest rates, however, the curve typically steepens, with long-term rates remaining more-or-less flat (on occasion even rising slightly) while short-term rates decline. Long-term bonds are therefore likely to be most rewarding in prerecession periods during which the curve is flattening, while short- to intermediate-term bonds (e.g., two to ten years) may perform better as the curve steepens in

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<sup>5</sup> In a bond portfolio with negative convexity, duration increases as interest rates rise, resulting in higher risk.

response to Fed easing.<sup>6</sup> The key to surviving a *prolonged* economic contraction is to make sure there is sufficient duration in the portfolio to realize capital gains large enough to help sustain a minimal level of spending.

Investors looking to add incremental return in addition to protecting against economic contraction may want to include an allocation to high-quality investment-grade corporate bonds. While such investments are a less efficient hedge against contractions and distress, their relative outperformance when conditions are more benign suggests that they do have a role in a diversified portfolio of bonds. In addition, these bonds have only slightly underperformed long-term Treasuries during recent recessionary periods, while significantly outperforming equities.

### Choosing a Benchmark

Although many endowments and foundations have reduced their allocations to bonds, most continue to benchmark their fixed income portfolios to broad market indices, such as the Lehman Brothers Aggregate or Government/Credit indices, that are becoming less and less suitable for core bond allocations designed to protect portfolios during difficult economic conditions. The weights of U.S. Treasury bonds in the Lehman Brothers Government/Credit and Aggregate indices are now just 38% (from 68% in 1994) and 23% (from 47% in 1994), respectively, and are projected to shrink even more dramatically in coming years. As Treasuries have been replaced by corporates in the Government/Credit index and by MBS in the Aggregate index, the quality of the former and the call-protection of the latter have diminished appreciably.

Approximately 35% of the Lehman Brothers Aggregate Index is composed of MBS, while the Lehman Brothers Government/Credit Index excludes MBS, but has a relatively higher weight in investment-grade corporate bonds (35.8% versus 21.8% for the Lehman Brothers Aggregate Index). The inclusion of MBS in the Lehman Brothers Aggregate Index results in higher call risk and a relatively lower maturity (7.6 years versus 8.0 years) and duration (4.7 years versus 5.2 years) than those of the Lehman Brothers Government/Credit Index. However, MBS are quasi-government securities and, despite recent speculation over the underlying risks in their portfolios of assets, they have the highest-quality rating (AAA). As a result, the inclusion of more corporate bonds in the Lehman Brothers Government/Credit Index, in lieu of MBS, results in higher-quality risk. For example, 76.2% of the holdings in the Lehman Brothers Aggregate Index are rated AAA, compared to only 61.6% rated AAA in the Lehman Brothers Government/Credit Index.

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<sup>6</sup> This suggests that an institution with the requisite expertise might add value by shifting the maturity structure of the portfolio when the yield curve flattens or inverts, reducing the weight of longer-term Treasury bonds and increasing that of short- to intermediate-term bonds. If one assumes that the Fed would continue to ease as the economy weakened, pushing real short-term interest rates to zero (or less), an aggressive approach would be to leverage the two-year note, on the assumption that the carry would become increasingly positive as the curve steepened. The risk here is stagflation, which could result in a negative carry for a protracted period during which the fund desperately needed *positive* cash flow, or policy mistakes by the Fed.

Empirical evidence suggests that the trade-off between quality and call risk results in relatively similar performance results. For example, during the 16-month recession from July 1981 to October 1982, the Lehman Brothers Aggregate Bond Index had a cumulative return of 36.6%, while the Lehman Brothers Government/Credit Index returned 35.6%. During the eight-month recession from July 1990 to February 1991, the Lehman Brothers Aggregate Index returned 8.2%, compared to a return of 7.8% for the Lehman Brothers Government/Credit Index. Finally, during the most recent recession lasting from March 2001 until November 2001, both the Lehman Brothers Government/Credit Index and the Lehman Brothers Aggregate Bond Index returned 6.5%. However, during August and September of the 1998 flight to quality, the Treasury-laden Government/Credit index returned 4.9%, while the Aggregate index returned 4.0%.

It is worth noting that Wall Street firms do not create and maintain fixed income benchmarks as a public service, but in order to improve the breadth and liquidity of the markets so that order flow is enhanced for the benefit of their trading desks. Consequently, their interest is served by increasing the scope of the fixed income indices as much as possible—bringing into the fold high-yield and non-dollar bonds, asset-backed securities, and all manner of other instruments of recent vintage, few of which should be included in the fixed income portfolio of an endowment or foundation seeking to maintain a core allocation of bonds of pure duration for portfolio hedging purposes. Thus, for example, the relatively new Lehman Brothers Universal Bond Index is even less relevant than the Aggregate as a benchmark for such a core allocation, while global bond indices—with their increasing allocation to Japanese government bonds—are positively dangerous.

### **Implementing the Fixed Income Policy**

Once investors have defined the purpose of fixed income in their portfolios and the types of bonds best suited to perform this task, implementing the policy is relatively straightforward. The four determinant characteristics are the duration, sector allocations, management approach, and appropriate benchmark.

Above all, the role of bonds in the policy portfolio should dictate their duration. For example, if bonds are held solely as a hedge against economic contraction or equity price deflation, they should be of intermediate- to long-term duration, with the duration determined by the size of the allocation (i.e., a smaller allocation requires a longer duration). At the other end of the spectrum, funds that are more concerned with protecting themselves against inflation should own Treasury Inflation-Protected Securities (TIPS) whose effective duration is short.<sup>7</sup> In all instances, however, maturity and duration targets should be set with a view to their effect on the variability of the total portfolio, not simply of the fixed income portfolio measured in isolation. For example, long-term bonds may appear unduly volatile when viewed in isolation, but in the context of the total portfolio the increase in variability resulting from an allocation to long-term, as opposed to intermediate-term bonds, may prove marginal.

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<sup>7</sup> For an analysis of the likely performance of TIPS during deflationary conditions, please see our 2001 paper, *U.S. Treasury Inflation-Protected Securities: Fixed Income Substitute?*



Sector allocation should also reflect the role of bonds in the total portfolio. When the bond portfolio is managed to maximize total return and can incur substantial volatility in doing so, non-dollar, high-yield, corporate, and MBS may be included to provide the flexibility needed to outperform broad domestic fixed income benchmarks. In addition, managers may make economic sector bets that strongly influence portfolio performance (e.g., underweighting telecom or overweighting financials). On the other hand, when the objective is portfolio protection, U.S. Treasury securities will provide the best insurance, and high-yield and emerging markets bonds have no place.

How the fixed income portfolio is managed should depend on the role of bonds in the portfolio. In this context, we are concerned that many institutions have slashed their fixed income allocations (implicitly redefining the role of bonds), but have retained the same manager, with the same mandate, as when their bond allocation was twice the size. Active managers construct portfolios that differ from their benchmark in various ways through duration, sector weights, and quality ratings. Of these strategies, the most common is to overweight higher-yielding, lower-quality bonds, as this approach will generally produce higher returns over time (although perhaps not in risk-adjusted terms). As noted above, however, this approach is entirely at odds with the concept of fixed income as an insurance policy because such a portfolio will perform relatively poorly precisely when the investor most needs to cash in the policy.

A second approach is a passive strategy, which can take the form of immunization, cash flow matching, or indexing. (Immunization and cash flow matching are more appropriate for pension funds that have defined liabilities whose duration changes with changes in interest rates.) An institution that indexes, however, should take care to identify an index whose characteristics properly reflect the role bonds are intended to play in the portfolio. Thus, for example, a small (e.g., <15%) bond allocation whose purpose is to ensure spending can be maintained even during a prolonged economic contraction and equity bear market should never be invested in a Lehman Brothers Aggregate or Lehman Brothers Government/Credit index fund since neither of these has the characteristics needed to fulfill such a purpose.

A variant on this approach is to buy and hold a laddered portfolio of intermediate- to long-term government securities as a plain vanilla insurance policy. This costs very little to implement and requires minimal maintenance—just an annual check-up to gauge whether the current insurance coverage is sufficient.

For those institutions that have decided to shrink their bond portfolios to what they regard as the minimum size needed for portfolio hedging purposes, we would recommend these relatively passive approaches to implementing the bond allocation. Active managers have almost no scope to add value when their mandate is reduced to holding only government or AAA corporate securities, and will constantly seek permission to invest in spread product in order to find some way of at least earning their fees. Meanwhile, the investor incurs a risk not only that the manager underperforms the appropriate, government securities benchmark over the long term, but—more importantly—underperforms badly at exactly the wrong time. In addition, active managers need to be selected, monitored, and measured, all of which occupy resources that might be better employed elsewhere in the portfolio, where there may be more need for value performance.

## **APPENDICES**

## Appendix A

### THE CASE FOR REDUCING THE BOND ALLOCATION

**The opportunity cost of holding bonds is too high.** Endowment funds are typically long-term investors that can tolerate the greater short-term variability, which results from higher allocations to stocks and thus avoid incurring the opportunity cost of significant allocations to less variable, but lower-returning asset classes like bonds. Not only can stocks be shown to generate higher returns over time, but the risk of owning stocks decreases with the length of the holding period. Historically, investors have rarely been adequately compensated for the risk of owning long-term bonds precisely because their value has been diluted by unanticipated increases in inflation. Because most institutions have adopted total return spending policies, the importance of current cash flow has diminished and fixed income holdings can be reduced in favor of assets that promise greater real growth over time.

**Bonds have become increasingly risky investments.** Since the late 1970s, the risk of bonds, as measured by their standard deviation of returns, has substantially increased. Gone is the era of sedate coupon clipping; bondholders today must be prepared for such rocky periods as 1994's steep and sudden rise in yields. The risk of bonds relative to that of stocks has also increased, and it is not clear that long-bond yields (which is their expected return) adequately compensate investors for this shift in relative risk. In addition, bond investors continue to incur purchasing power risk—the risk that higher-than-expected inflation confiscates the real value of their fixed return—which they have generally underestimated.

**Bonds do not offer an efficient means of diversification.** Although the inclusion of bonds in a portfolio enhances diversification, the extent to which it does so is unstable and may well diminish in the future. In addition, there now exist alternative asset classes and strategies that have both higher expected returns and more powerful and consistent diversification properties. These include private equity, commodities, distressed securities, market-neutral arbitrage, hedge funds, and short-selling strategies, which might be expected to perform well during periods of stock market weakness. In theory, a carefully selected combination of these asset classes might provide greater diversification benefits, higher expected returns, and less variability than could be expected from a bond portfolio. In addition, many of these alternative investments are less efficiently priced than bonds and should support higher levels of manager alpha than could be generated from traditional fixed income investments. There are therefore sound reasons for believing that one can construct a portfolio with an allocation of 20% or less to fixed income securities that has both a higher expected return and a level of risk that is equivalent to or lower than that of a conventional 70% stock/30% bond portfolio.

**The deflation-hedge role of bonds has become less important.** Long-term, high-quality bonds served as an effective hedge against deflation in the 1930s, but another depression is increasingly improbable. With the federal government firmly entrenched as the lender of last resort, further armed with the capability for countercyclical fiscal spending, it is hard to imagine that a recession could turn into a full-fledged deflation as we enter the twenty-first century. These roles of the federal government were highlighted during the S&L bailout in the early 1990s, when the government insurance program and its role

as a lender of last resort were able to contain the psychological threat to the economy posed by the pricking of the real estate bubble. In the postwar period, inflation has proved a far more persistent threat to the economies of the western democracies and is likely to remain so because its deleterious effects are less obvious and politically more palatable than the extreme economic dislocation of deflation.

## Appendix B

### THE CASE FOR MAINTAINING LARGE BOND ALLOCATIONS

**Bonds act to lower risk in the short run.** Although bonds may have failed historically to protect portfolio purchasing power adequately against the corrosive long-term effects of inflation, they certainly serve to reduce risk in the short term. Because the expected stream of cash flows generated by an investment is generally regarded as a primary determinant of its value, the more certain those cash flows the less risky the investment. In other words, all else being equal, portfolios with higher proportions of their expected returns originating from income should be preferable to those that rely more heavily on assumed capital appreciation. Bond investors may hope at times to realize some capital gains from declining interest rates or from credit upgrades of individual issues, but the fixed interest cash flows always constitute the expected (and more or less certain) nominal return from a fixed income investment. In the case of stocks, however, only the dividend payments promise something close to this certainty of cash flows over the short term (but are more vulnerable to reduction than are bond interest payments). Indeed, sophisticated investors from the first half of this century would be astonished today at the comparative lack of attention paid to income streams. They might well caution that a heavy reliance on capital appreciation approaches speculation rather than investment and that investors ignore income at their peril—because in times of stress, a small bird in the hand becomes much more highly valued than the uncertain prospect of several fatter birds in the bush.

This is precisely why investors are prone, during times of increased uncertainty, to shorten their time horizons by shifting assets to investments, which offer greater assurance of a positive return. For this reason, portfolios that are not heavily invested in stocks but are broadly diversified among various equity investments may prove more vulnerable to economic stress than anticipated if those alternative equity investments have a common risk factor of minimal cash flow. No one really knows how these eclectic and relatively new equity investments might perform during a severe bear market, and so there is an unusually high risk of estimation error in the assumptions about correlation and standard deviation which provide the rationale for diversified equity portfolios. On the other hand, it seems reasonable to assume that high-quality bonds will continue to provide a safe haven and bring valuable stability during periods when there is a negative risk premium for equities and investors become highly sensitive to the risk of absolute loss.

**Real world constraints exist on lowering the bond allocation.** The trend toward lower bond allocations has coincided with a period of superior performance for financial assets—a period during which risk-taking has been handsomely rewarded. The key question today is whether diversified equity portfolios will also provide superior returns during periods in which risk-taking is punished. This is a variant form of the question already posed in the preceding paragraph—will the assumptions on which diversified equity portfolios are based prove robust in a bear market, or will alternative equity investments be shown to possess common factors that result in their underperforming? Such an outcome would not, in itself, nullify the arguments in favor of such portfolios, because they might still generate higher returns over longer periods. However, it would make for a hard sell with investment committees that had adopted lower allocations to bonds on the assumption that this entailed no increase in total portfolio risk, only to find that although a higher allocation to equities had not increased the variability of portfolio returns under normal circumstances,

it had increased the risk of ruin under circumstances of extreme stress. Faced with such a situation, many committees would find it difficult to stick with a portfolio that had failed to perform under fire as expected, and in which it was therefore losing faith. After all, in the world of fiduciary fund management, the payoff for unconventional asset allocations, or for incurring more risk than one's neighbors, is asymmetrical—trustees are rarely thanked for reaping the rewards of unconventional or aggressive policies, but may be subjected to withering criticism from the fund's constituents during lean years.

In the long term, the order in which returns are earned makes no difference to a fund's performance; in the world of investment decision making, however, the random nature of returns can dramatically affect the odds that an institution will successfully stick with a disciplined investment philosophy. For example, a fund that realizes excellent returns in the few years immediately following the adoption of an unconventional or aggressive policy is much more likely to be able to weather subsequent periods of disappointing returns than would be the case if the returns for the first few years had fallen near the lower end of the portfolio's expected distribution of outcomes. Under the latter circumstances, the trustees would be much more likely to cut their losses and return to a more conventional or lower-risk portfolio—perhaps suffering whipsaw as a result.

A related threat to broadly diversified portfolios with high equity allocations is that although trustees may approve the adoption of such allocations on the basis of an analysis of total portfolio risk, they may revert to a bottom-up, asset-class-by-asset-class view of risk during periods of below average results. Central to the theory behind the risk-reduction benefits of diversification is that various asset classes will exhibit fairly low correlation of returns in the future. This means that at any given point in time, there will almost certainly be some asset classes that will exhibit returns above their long-term averages while others will be performing poorly. By constantly rebalancing into asset classes with below-average returns, the portfolio gains the benefits of diversification: increased compound growth with lower variability of total portfolio returns. Such a strategy is only effective in the long run, however, if trustees understand that there will almost always be segments of the portfolio that are underperforming, and that assets need to be shifted to those asset classes from those that have recently performed best. Risk assessment must therefore remain firmly focused on the total portfolio in order to withstand the temptation to limit or reduce allocations to poorly performing asset classes, which undermines the diversification strategy. Portfolios with broadly diversified equity portfolios and low fixed income allocations could find themselves more vulnerable to these pressures than other investors with less broadly diversified portfolios.

**The deflation hedge role of bonds should not be ignored.** Although the probability of deflation may have diminished, it would be cavalier to assume that it has disappeared forever. In 1990, the U.S. banking system came uncomfortably close to the situation in which the Japanese find themselves today—fending off runs on financial institutions that are clearly insolvent. The relative performance of the Japanese stock and bond markets since 1990 illustrate vividly the effects of deflation threat: in the five and a half years since the beginning of 1990, the stock market returned -23.6% (an average annual return of -4.8%) and bonds 191.7% (an average annual return of 21.5%)—a cumulative negative risk premium of 215.3 percentage points, or 23.2 percentage points annually. Who would have predicted ten years ago that the Japanese "miracle" economy, which we were then being exhorted to emulate, would shortly undergo such travail?

Portfolios with low bond allocations have no mechanism for hedging income streams during such economic crisis. Lacking bonds, with their ability (albeit imperfect) to hedge spending liabilities, portfolios with very high allocations to equity investments could therefore be forced to liquidate equity holdings to support minimal spending needs at a time when the markets demand a steep liquidity premium. There is no reliable evidence to suggest the existence of investment vehicles other than high-quality bonds that can provide some measure of protection to a portfolio in the event of deflation (or a serious threat of deflation) in the U.S. economy. In such an environment, the financial system would come under extreme stress, and parts of it would fail—just as Japanese banks and credit agencies are failing today. This could leave certain substitute strategies, such as short selling, vulnerable to counterparty defaults, especially if they involve OTC instruments that lack the structured backing of organized clearinghouses. In sum, there is no compelling reason to assume high-quality bonds will fail to fulfill a deflation-hedge role within portfolios, or that such insurance can be obtained with equal certainty, and lower opportunity cost, elsewhere.