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Rethinking Real Estate Allocations For Defined Benefit Plans

The pension world is changing dramatically. Defined benefit plans continue to be a smaller part of the whole pension picture. Actuarial assumptions are coming under fire in the press as well as the boardroom. Nominal and real return expectations in the public and private equity markets as well as in the fixed income markets are substantially reduced from a few years ago. The U.S. pension portfolio has gone from a surplus to a deficit position in the past two years. Rather than supporting corporate earnings, plans are about to become a drag on them. Many defined benefit plans are in or approaching a net outflow position. These and other forces have created interest in new allocation models—notably asset-liability matching—and a renewed focus on income rather than capital gains. All these developments will have an influence on how plan sponsors see the real estate asset class.

Current State of the Pension Community

Plan sponsors have several things to worry about in the aftermath of the stock price bubble of recent years. Corporate plans have enjoyed surplus earnings from the plans' equity portfolios over the past several years. Financial Accounting Standard 87 requires 15-year amortization of pension surplus or deficit. The process requires a valuation of liabilities with a fixed income model that uses current and/or recent interest rates. As a result, assets have declined in value while liability values have risen when interest rates used to discount the future obligations fell. A reversal from surplus to deficit will mean a swing in corporate earnings of considerable magnitude. During the bull market, amortization of growing surpluses added between 7



percent and 10 percent of annual earnings, according to Ryan and Fabozzi.¹ According to the Pension Benefit Guarantee Corporation, private pensions are now in a deficit position of \$111 billion. That translates to an average \$450 million amortization for each of the top 200 plan sponsors, requiring a 15-year reduction of earnings on the order of \$30 million based on the year 2000 alone. If assets continue to shrink away from liabilities, deficit amortization will grow. The asset-liability valuation is performed every year, and each year, in deficit or surplus, begins another 15-year amortization cycle. In addition to being a potential drag on earnings, amortization of pension deficits may affect a firm's credit rating, making financing more difficult and costly.

As part of a growing attention to the impact of pension obligations on corporate performance, interest in alternative asset allocation methods has been revived. Specifically, the concept of asset-liability matching as a substitute for an efficient frontier

1. Ronald Ryan and Frank Fabozzi, "Rethinking Pension Liabilities and Asset Allocation," *The Journal of Portfolio Management*, 28, 34 (Summer 2002)

2. Tim Craft, "The Role of Private and Public Real Estate in Pension Plan Portfolio Allocation Choices," *Journal of Real Estate Portfolio Management*, 7,1 (2001)

approach to asset allocation has received attention of late. Applying the concept to real estate, Tim Craft² found that real estate allocations should be on the order of 12 percent to 16 percent for private real estate and 4 percent to 10 percent for public real estate.

Finally, Congress appears to be set on closing off the cash balance conversion option that became popular with defined benefit sponsors in recent years. The Department of Labor estimates that more than 8 million workers are covered by the several hundred plans that have converted, representing more than \$300 billion in pension liabilities. Restructuring of plans that had been planning on conversion may create another burden on their pension benefit obligations. As of this date, the Internal Revenue Service has not issued approval for cash balance conversions for some time.

Where can plan sponsors go to find assets that meet the needs of their participants in a cost-effective way? Let's look at several asset classes to see how they are likely to fare in providing what investment officers need. We believe that defined benefit plans that have a funding ratio of 1.0 or less (fully funded or in deficit) will want to think about asset allocation in terms of several characteristics.

First, it appears that the need for stable income is much greater than it was during the boom years. Stable income meets current payout needs, it helps achieve actuarial assumptions on a regular basis (helping to avoid the effect of FAS 87), and it allows for some element of greater volatility in the portfolio.

Second, managers will be looking at duration a bit more closely given the likely interest rate environment. Heavy investors in long-duration instruments will be hurt by interest rate increases. Traditional standards suggest that the average pension liability structure has a duration of 15.5 years based on an equal share for each age cohort. Existing bond portfolios with low nominal rates exhibit high duration and so may increase volatility on the asset side of the asset-liability matching process. Although it is not likely that many plans will go to a fully immunized bond portfolio, the concept is going to be part of the portfolio conceptualization process. It may be that the trend toward shorter real estate underwriting horizons of the last few years is a

symptom of the need to shorten duration and match the asset book to looming liabilities.

Third, we believe that managers will begin to think about inflation hedging again if the yield curve remains as steep as it is currently.

Finally, investors are likely to look more seriously at diversification across asset classes. Equities moved from 40 percent to more than 60 percent of the pension portfolio during the bull market, partly through accretion and partly through allocation. Considering cross-asset class allocations, investors will want to test for suitability of assets to meet plan needs. They will look beyond simple mean-variance measures to think about the term structure of returns, their volatility, and their ability to hedge inflation risk.

Outlook for Asset Classes

Common Equities

Equities are not expected to return double digits in the foreseeable future. Corporate earnings are hampered by more than just the unfunded pension liability. The economy is undergoing a weak recovery with an increasing chance that it might slip back into a double-dip recession, as it did in the early 1980s. In this environment, corporate earnings are expected to be anemic at best. Weak earnings growth would most likely lead to further erosion of price-earnings multiples back toward their long-run average of around 14 versus today's trailing 30 and estimated 17 forward multiple. Couple those problems with uncertainty about the validity of reported earnings arising from the scandals in the corporate world, and you have a bleak near-term outlook for equities.

Expectations of growth in the corporate arena are likely to be further tempered by an increasingly strong call for dividends on the part of investors. Microsoft, for instance, has been chided for maintaining as much as \$30 billion in cash on its balance sheet without paying any dividends to shareholders. Bryan Nottage of Economy.com notes in "Some Good News on Dividends" that the S&P 500 yield has risen from a low of 1.1 percent in 2000 to 1.7 percent today. This yield rate is just less than half of the ten-year Treasury note yield, bringing it into line with the average spread of the 1980s. Given the weak capital investment environment and investors' need for yield, we expect

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to see a return of dividends on a broader scale. One benefit of dividend growth will be better valuation estimates than we have had during the recent bubble.

Fixed Income

Interest rates are low. Recently, the ten-year Treasury was 3.69 percent. Based on the first half of 2002, inflation was running at 2.1 percent, so the real interest rate was only 159 basis points. Some might argue that the true rate of inflation is lower, but in a world where the Bureau of Labor Statistics Consumer Price Index is the arbiter of inflation, the point is moot. Absent a sharp increase in the rate of inflation, nominal rates are likely to remain low. One warning sign, however, is that the slope of the yield curve from 90 days to ten years is steeper than it has been since 1992 and is the second steepest slope we have seen in the past 18 years. Steep slopes typically represent increased inflation expectations for the long run and almost always signal rising rates.

Corporate debt has relatively high spreads, but because the base rates are so low, they add up to only nominal rates in the 5 percent range. Since most plan sponsors would suggest that they need at least 5 percent real rate of return to meet actuarial assumptions, 5.41 percent on a BBB-rated five-year corporate issue is not attractive. Junk paper has very high spreads at the moment, but this may be one of those times when the market has priced the risk appropriately, making it unlikely that any chief investment officer would want to bet the plan on high-yield bonds.

Real Estate

Plan sponsors can invest in direct or securitized real estate or both. To date, direct real estate investment has garnered the lion's share of real estate allocations. *Pension and Investment's* 2000 survey estimated that pension plan real estate equity was on the order of \$130 billion and REIT holdings were approximately 10 percent of that number at \$13.8 billion. *P & I* might have underestimated pension REIT holdings substantially since REITs are held by common equity managers in broad portfolios in value, index, and other categories. According to NAREIT, the equity capitalization of REITs investing in real estate equity is \$164 billion. Thus, the public and private real estate portfolios tracked in the institutional world are

roughly comparable in size.

Although plan sponsors might have had reasonable objections to investing in REITs in the past, today's environment is favorable. There is approximate parity in capitalization. REIT management has matured into a mainstream corporate governance mode and is responsive to institutional investors' concerns. Additionally, the change in REIT requirements to pass through only 90 percent of taxable earnings has given management the opportunity to retain 20 percent to 30 percent of internally generated cash flow for expansion and capital investment in existing properties. The advent of hedge funds and levered closed-end funds also creates a wider opportunity set for investors.

In a corresponding fashion, the advent of manager style categories in private real estate investing has provided a broader set of opportunities for investors. Combining core, value-added, and opportunistic investments allows for creation of a portfolio of laddered risks with commensurate return expectations.

Private Equity

Venture capital and M & A pools are not investing at the heady pace of two years ago. According to PricewaterhouseCoopers/Venture Economics/National Venture Capital Association MoneyTree Survey, placements fell to \$5.7 billion in the second quarter of 2002, down from \$6.4 billion in the first quarter. That pace would deliver less than half of last year's \$43 billion and one-fourth of 2000's \$108 billion. New company investments represent less than 20 percent of today's placements, with the bulk of dollars going to portfolio companies on their second and third rounds of funding. Returns to venture capital tend to be a function of the vintage year of the investment. Recent vintage years have not yet shown meaningful returns. Vintage year 1999 is estimated at 5.9 percent and 2000 at -4.2 percent by Venture Economics. Couple lessened activity with lower returns, and the bloom may be off venture capital for a while.

One interesting development in recent years was the decision by many plans to put real estate into the private equity category and let it contend with other forms of private equity, including venture capital, for its allocation. This had the effect of making real

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estate less competitive from a return standpoint and also led to an increasing use of opportunity funds to fill out the real estate allocation since they promised returns commensurate with the broader field of private equity. Going forward, there may be a mismatch between realistic return expectations for real estate and the typical hurdle rates found in private equity allocations.

The Case for Real Estate

Figure 1 shows the effect of inflation on returns based on the period 1978 through 2001. As one would expect, the real returns (circles) tend to move downward and to the right relative to nominal returns (squares). The presence of inflation increases risk for nearly all the return series except for NAREIT total returns and NCREIF total returns. The NAREIT series drops down to reflect inflation but stays at the same

standard deviation. The NCREIF series actually moves downward and to the left, reflecting its ability to hedge inflation and reduce volatility associated with price level changes. Real estate's inflation hedging power means that incomes will rise to meet higher price levels and offset the dollar cost of higher interest rates during an inflationary period.

We can also see from Figure 1 that inflation dramatically increases the volatility of the Treasury return series. The implicit T-bond return reflects a constant maturity Treasury acquired in the beginning of the year at the January yield and marked to market on the following January at the new January yield. Each investment is measured separately rather than in a portfolio setting, which would tend to increase the volatility.

Why does the NCREIF series provide better inflation hedging? One answer might be seen in Figure 2. The chart shows the respective spreads of the income series for NCREIF and NAREIT over the ten-year Treasury. During the high-inflation years, both series performed alike, showing negative spreads to Treasuries. The negative spreads reflect the perception that real estate is an inflation hedge. People were buying income that would adjust versus a fixed income instrument that became a wasting asset during inflation. But as the economy recovered and price increases abated, both public and private real estate income began to trade at a spread over Treasuries. Beginning in 1993, the point often referred to as the beginning of the "modern REIT era," the NCREIF income yields drew away from NAREIT's dividend yield, carrying an additional spread of 150 to 350 basis points. We believe that this spread represents the primary distinction between public and private real estate. REITs are operating companies hoping to grow both internally and externally. By retaining as much cash flow as the REIT election allows, they can generate asset growth internally. The NCREIF properties, on the other hand, represent investment assets held in open-end funds, separate accounts, and similar vehicles. Those assets are expected to pass through all the earnings to the investor with the possible exception of capital investment needs. Thus, as the REIT industry matures, we would

Figure 1: Real Returns and Volatility: 1978-2002

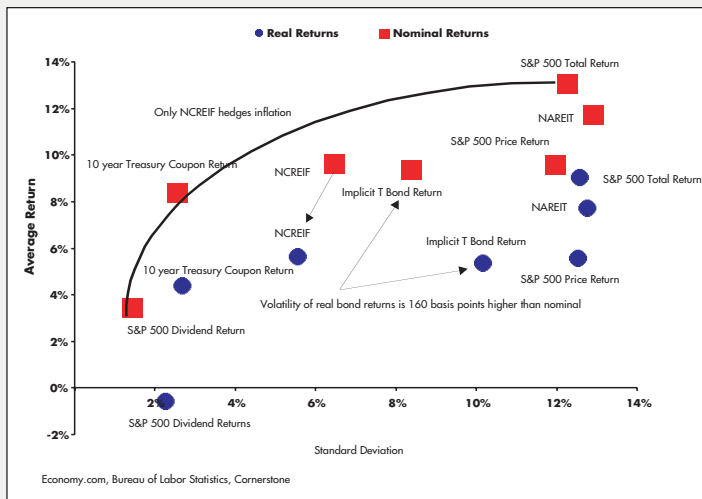
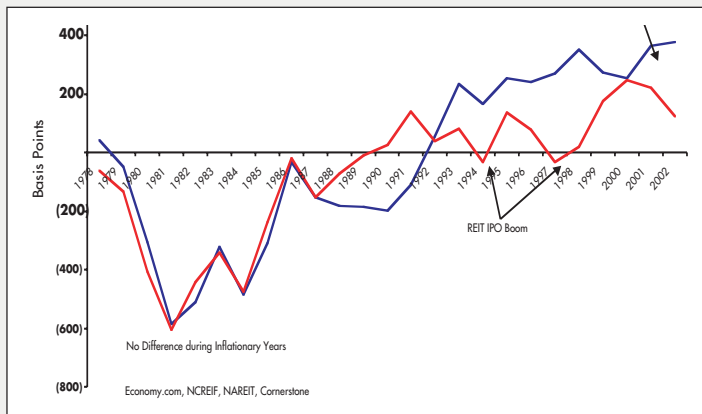


Figure 2: NCREIF and NAREIT Income Spread over 10 Year Treasury Coupon Rates



expect to see a divergence of these income spreads, as seen in Figure 2 in the period 2000 through mid-year 2002. The conclusion is that private real estate can be expected to provide income streams at significant spreads over Treasuries while providing inflation protection.

Continuing the focus on income, Figure 3 shows the risk return space around four income series and the Consumer Price Index. We can see that the S&P 500 dividend yield between 1978 and 2001 failed to match inflation. The ten-year Treasury coupon rate had a surprisingly high average value, but that will fall rapidly in the coming years as we continue to move away from the high inflation years of the late 1970s and early 1980s. Both NCREIF income and NAREIT dividend yield had very low volatility and were close to each other in average return. Arguments about the appraisal component of NCREIF aside, it appears that real estate does actually give good returns with low volatility. The fact that REIT dividends are nearly the same as NCREIF income, underscores the assertion. Although REIT management may very well manage

the dividend closely, the real estate provides the stable cash flows that allow for such management.

Table 1 provides correlation coefficients for the income streams and the CPI. NCREIF has negative correlation with NAREIT dividends, S&P 500 dividends, and the Treasury coupon. It also has the lowest correlation (0.10) of the four income sources with the CPI, underscoring its inflation-hedging ability.

Conclusion

Pension investors are entering an era of lower expected returns from most asset classes. At the same time, their plans are under pressure to correct deficits in funding. The changing nature of many plans' liabilities argues for a higher income component in investment returns. In addition, Treasury yield curves are signaling inflation ahead. As unpleasant as those conditions may be, they argue for increased allocations to real estate since it appears, at least in the near term, to be the only asset class that can deliver high nominal and real rates of return on an annual dividend basis while

providing superior inflation-hedging characteristics. By shortening underwriting horizons, investors can tailor the duration of their real estate investments to the duration of their liability structure. The conditions suggest that it is time to rotate into real estate from some of the other asset classes and readjust allocations accordingly. ■

Figure 3: Income Series 1978–2001

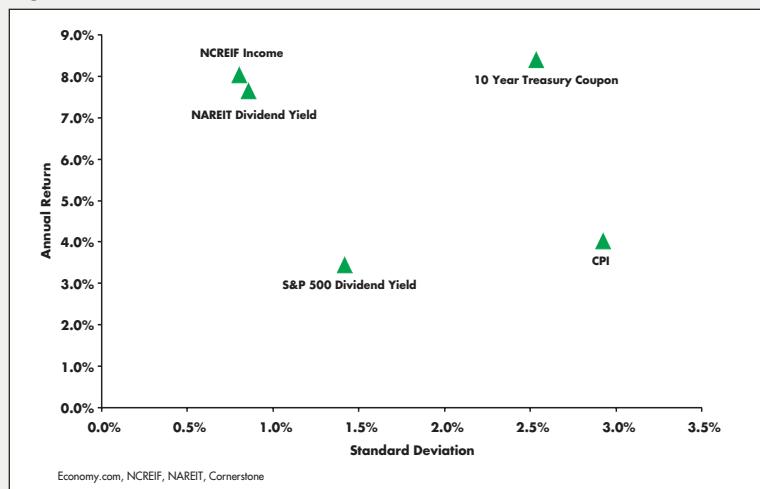


Table 1: Income Series Correlation

	NCREIF Income	NAREIT Dividend Yield	10 Year Treasury Coupon	S&P 500 Dividend Yield	CPI
NCREIF Income	1.00				
NAREIT Dividend Yield	-0.56	1.00			
10 Year Treasury Coupon	-0.32	0.42	1.00		
S&P 500 Dividend Yield	-0.26	0.44	0.85	1.00	
CPI	0.10	0.28	0.52	0.65	1.00