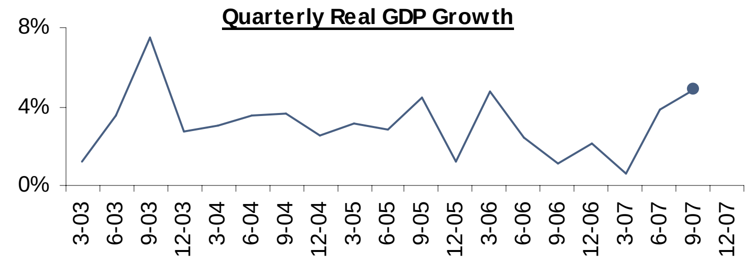
Your Quarterly Update on the Financial Markets
December 31, 2007

4th Quarter

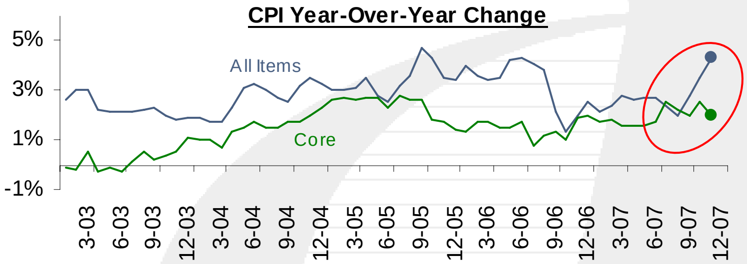
# MARKET Recap

## The Economy: *"Not Much Cheer for the New Year"*

The U.S. economy grew at a blistering 4.9% annualized pace in the third quarter, buoyed by strong consumer spending despite deteriorating credit markets (although we would expect a considerable time delay before default experience actually translates into a meaningful decline in economic activity). That said, leading indicators of economic activity were decidedly negative in the fourth quarter, increasingly so as the quarter matured.

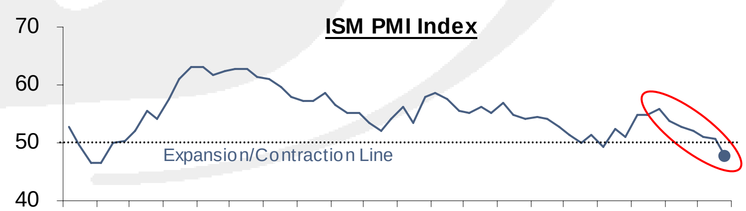



However, the Consumer Price Index also moved upward in the fourth quarter, causing concern at the Federal Reserve that an aggressive cut in interest rates would create additional inflationary pressure. The Fed's action on December 11 was measured, prompting an angry outcry from Wall Street. Simultaneously, crude oil prices approached $100 per barrel on continued strong demand here and abroad, and on news of violence in Nigeria and Kenya. The official word from OPEC is that member nations are currently producing at near-term capacity, and so supply-side relief appears unlikely for now.




The Conference Board's Index of Leading Economic Indicators fell in October and November, and will likely show a decrease for December once released. Troubling news for December included a relatively sharp decline in the ISM Purchasing Managers Index, a key barometer of activity in the manufacturing sector, and a somewhat surprising uptick in unemployment to 5.0%. The unemployment rate is generally a lagging indicator of activity, and one should be cautious about over-interpreting a single data point given its margin of error; however, any acceleration in unemployment is bound to catch attention in an election year, particularly one as contentious as 2008 will likely be.

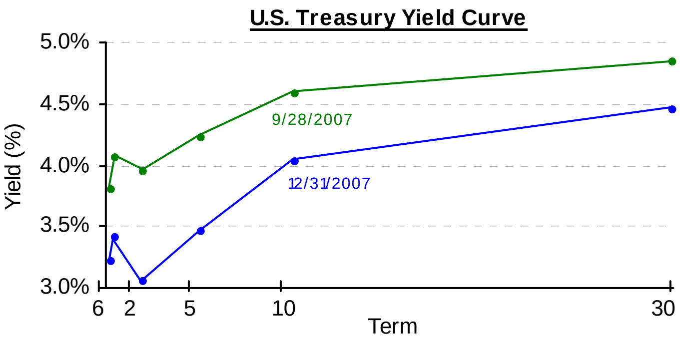
So what should we expect for 2008 – inflation, recession, or both? We believe "stagflation" is relatively unlikely, unless there is a significant supply shock or some other dramatically negative world event. More likely, we would expect prices to moderate gradually as economic activity contracts – a recessionary scenario. There are two particularly important unknown factors related to the Fed which must be noted; first, we have yet to observe this Board of Governors, under Mr. Bernanke's influence, manage through a rough spot. While Mr. Bernanke talks a tough game on inflation control, we simply do not know how resilient he and his colleagues will prove to be in the face of dramatic, public pressure from Wall Street for liberal rate cuts. Second, it is an election year; pressure for economic stimulus from the public will be unusually strong as various candidates seek to pin blame for the "downturn" on the current administration and demand immediate relief. In our opinion, too much rate-cutting will only extend and prolong a necessary adjustment from credit-fueled excessive consumer spending – but the near-term consequence would be inflation.




# The U.S. Bond Market

| Bond Indices - 4Q Total Return | 4Q07 | 2007 |
|---|---|---|
| Lehman Aggregate | 3.00% | 6.97% |
| Lehman Interm. Gov't | 3.36% | 8.47% |
| Lehman Long Gov't | 5.59% | 9.65% |
| Lehman Interm. Credit | 2.17% | 5.60% |
| Lehman Long Credit | 2.23% | 3.60% |
| Lehman High Yield | -1.30% | 1.87% |

Bonds had another very strong quarter. The Lehman Aggregate returned considerably above its historical average, as rates fell (the 10-year Treasury by 55 bps, from 4.58% to 4.03%, in line with the quarter's 50 bps of Fed cuts). The "flight to quality" continued: government issues appreciated strongly, and investment-grade corporates appreciated slightly despite widening credit spreads. High yield issues, the bellwether of change in the credit environment, again showed significant depreciation. While there will certainly be some variation in 2008, simple mean reversion suggests medium-term returns will continue improving from the low levels of the past few years. The yield curve steepened significantly, with the difference between 2-year and 10-year increasing from 63 bps to 97 bps. Last quarter, we observed that historically large credit spread jumps have been sustained on average. Since current experience is in line with historical averages, high credit spreads may plausibly continue for some months to come.

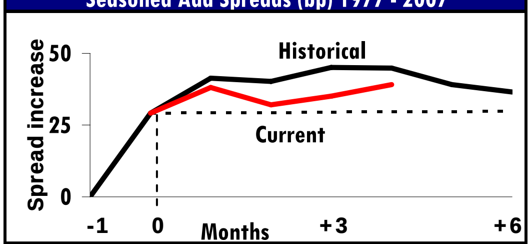


Source: Bloomberg LP

Mortgage-backed securities performed in line with the Aggregate for the most part. Jumbo spreads rose 20 – 25 bps, and there was some concern during the quarter about capital ratios at FNMA and FHLMC. FHLMC raised $6 billion in capital as a defensive measure; however, the Office of Federal Housing Enterprise Oversight (which regulates Freddie and Fanny) reported that these agencies were sufficiently capitalized at the end of the third quarter, despite significant losses. ARMs performed poorly on a relative basis as interest rates fell.

An October FOMC meeting concluded "strains on financial markets have eased," but in December the Fed worried that "strains in financial markets have increased in recent weeks," in particular, that a variety of issues in structured products markets are weakening banks: concerns about higher non-housing ABS delinquencies (credit cards, etc.), investors' ebbing enthusiasm for LBO-financing leveraged loans, and the need to take Structured Investment Vehicles back onto balance sheets. Thus the Fed introduced a "Term Auction Facility" (TAF) to auction short-term credit to banks, in coordination with other central banks; auctions were held on December 17 and 20, with more to come on January 14 and 28. It is not yet clear to us what effect the TAF will have: in particular, how effectively it will contribute to improving bank balance sheets, how quickly that in turn will end the "credit crunch," and whether there will be other unanticipated consequences.

**What Happens After 20bp Spread Jump?**
**Seasoned Aaa Spreads (bp) 1977 - 2007**




According to the Fed, total debt growth is slowing, led by declines in mortgages. Commercial paper rebounded somewhat, easing one set of credit crunch-related concerns, but other issuance is expected to slow. Growth in corporate debt is only moderately lower so far, but the range of investment opportunities will probably shrink as the economy slows.

# The U.S. Stock Market

Despite negative results across the board in the fourth quarter, U.S. equity markets finished 2007 with modest gains in most areas. The broad markets reflected this trend with the Dow, the S&P 500 and the NASDAQ all down for the quarter but up for the year. The Dow closed the year at 13,264.82, down 4.5% for the quarter but up 6.4% for the year.

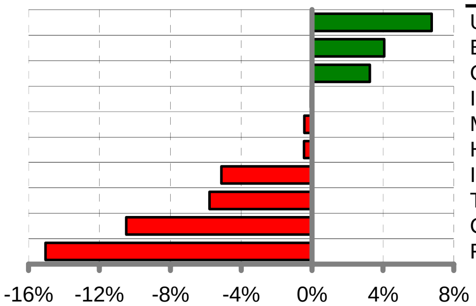
| Stock Indices - Total Return | 4Q07 | 2007 | | 4Q07 | 2007 |
|---|---|---|---|---|---|
| **Largecap Stocks** | | | **Midcap Stocks** | | |
| S&P 500 | -3.33% | 5.49% | S&P Midcap 400 | -2.73% | 7.98% |
| Russell 1000 | -3.23% | 5.77% | Russell Midcap | -3.55% | 5.60% |
| Growth | -0.77% | 11.81% | Growth | -1.70% | 11.43% |
| Value | -5.80% | -0.17% | Value | -5.97% | -1.42% |
| **Broad Markets** | | | **Smallcap Stocks** | | |
| NASDAQ Comp. | -1.62% | 10.66% | S&P Smallcap 600 | -6.45% | -0.30% |
| Wilshire 5000 | -3.25% | 5.20% | Russell 2000 | -4.58% | -1.57% |
| | | | Growth | -2.10% | 7.05% |
| | | | Value | -7.28% | -9.78% |

Market volatility, notable in the third quarter of 2007, only increased in the final quarter of the year. The Dow had 28 days of triple digit fluctuations – 14 up and 14 down. (It had 24 days of triple digit swings in Q3.) Looking at the year as a whole, the Dow fell 1% or more on 30 days (11 of which were in the fourth quarter), compared with just 11 days in all of 2006. It rose 1% or more on 27 days in 2007 (9 of which were in the fourth quarter), compared with 14 days in 2006. U.S.

stock prices, as measured by the volatility index of the Chicago Board Options Exchange (VIX), showed fluctuations similar to the third quarter – until then, a level not seen since 2003.

Corporate profits are expected to be down 8.7% from the fourth quarter of 2006, according to Thomson Financial. Investors continued to look for security amid troubled credit and housing markets, rising oil prices, and a falling dollar with largecap issues generally outperforming mid- and smallcap stocks for a second quarter. Utilities stocks, with their regular dividends and generally predictable earnings, were the top performing sector for the fourth quarter and finished third for the year. Energy sector issues finished first for the year and second for the quarter, not surprising in a year that saw oil prices increasing nearly 60% from the beginning of the year. The financial sector had another rough quarter and ended the year as the worst-performing sector due to continued fallout from the subprime debacle. Consumer discretionary stocks also had a rough quarter and a worse year as investors increasingly doubted consumers could continue to spend in the face of pressures from rising oil prices to the mortgage crisis.

**S&P 500 Economic Group Components - Total Return**




| Sector | 4Q07 | 2007 |
|---|---|---|
| Utilities | 6.76% | 15.81% |
| Energy | 4.07% | 32.38% |
| Consumer Staples | 3.26% | 11.60% |
| Information Tech | -0.08% | 15.54% |
| Materials | -0.44% | 19.98% |
| Healthcare | -0.46% | 5.39% |
| Industrials | -5.12% | 9.83% |
| Telecom | -5.79% | 8.45% |
| Consumer Disc. | -10.49% | -14.32% |
| Financials | -15.04% | -20.84% |

*Source: Standard & Poor's*

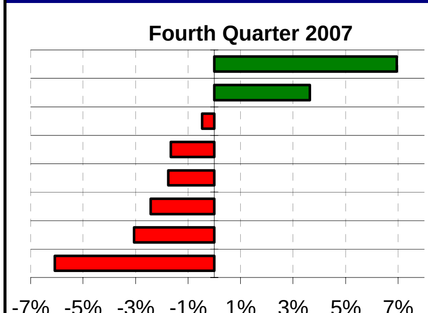
Materials turned in negative performance for the quarter, but had a relatively strong year as the second highest performing sector after Energy. With component companies paying regular dividends, the sector is attractive for investors looking for stability in a volatile market. Within the sector, chemical and steel companies were responsible for the strong full-year performance. With the U.S. steel industry experiencing a resurgence driven by demand in China and more efficient processes at home, firms like Nucor (ticker: NUE) and U.S. Steel (ticker: X) turned in strong double-digit returns for the year. But the majority of return in the sector came from chemicals companies. Specializing in industrial gases required by the oil industry, firms like Air Products (ticker: APD) and Praxair (ticker: PX) had returns around 50% for the year.

# Overseas Markets

With the exception of emerging markets, global market sectors did not fare well during the fourth quarter. Volatility was evident as spillover from the subprime crises continued to impact financial markets worldwide with firms announcing bigger and bigger writedowns due to underperforming investments. Latin American emerging markets led performance while developed markets including G7 countries such as the U.S. and Japan struggled.

Eurozone performance for the quarter was relatively flat. The ECB held the bank's base interest rate steady at 4% even as policymakers tried to balance rate stasis versus rising consumer inflation (at a 2-year high of 2.6% in October and well over the ECB target of around 2%). The increase in inflation did give ammunition to inflation hawks on the ECB governing council calling for an increase in the bank's base rate; however, the bank did hold rates firm. Perhaps the biggest reason why the ECB left rates unchanged, though, was the surge in the euro, up nearly 10% between August and November against the U.S. dollar and over 12% versus the yen, presenting challenges to European exporters and to the ECB caught in-between.

**Net Total Return of Selected MSCI Regional Indices**




| Region | 4Q07 | 2007 |
|---|---|---|
| Latin America | 6.95% | 50.40% |
| Emerging Markets | 3.64% | 39.39% |
| Europe | -0.46% | 13.86% |
| Pacific ex Japan | -1.66% | 30.73% |
| EAFE | -1.75% | 11.17% |
| World Index | -2.42% | 9.04% |
| North America | -3.05% | 7.07% |
| Japan | -6.08% | -4.23% |

Germany's economy, Europe's largest, accelerated in the third quarter with growth coming from capital formation in machinery and equipment and construction as well as household consumption. German GDP rose 2.5% during the third quarter, up 0.7% from the prior quarter according to data from the Federal Statistics Office. However, weakening trends in new industrial orders and investor confidence have become evident. German industrial production was down 0.3% in October with investors growing pessimistic as evidenced by investor sentiment dropping to a near 15-year low in the fourth quarter. In France, consumer confidence dropped to a 19-month low in December after inflation accelerated on rising energy costs.

The Bank of Japan lowered its outlook on the Japanese economy based on deceleration of growth. The BoJ signaled that it is unlikely to lift its benchmark lending rate from its current 0.5%. In its monthly economic report, the central bank said "the pace of growth seems to be slowing mainly due to the drop in housing investment." The nation's economic growth forecast for the year was also lowered to an inflation-adjusted 1.3% from an earlier estimate of 2%. Weak domestic demand continues to be pervasive as evidenced by imports falling 6.3% in August then by 0.1% in September.

In China the central bank took a number of steps during the quarter to try to curb growth. Perhaps in response to a more vocal EMU, China's central bank lifted the reserve-requirement ratio for banks for the tenth time in December in an attempt to cool lending growth. The change to the reserve ratio required most commercial banks to set aside 14.5% of deposits in reserve with the central bank. In addition, the bank called for a number of 0.27% increases to interest rates with market consensus expectations for a number of additional increases into the first quarter of 2008. October's consumer price index climbed 6.5% year-over-year, matching the 11-year high from August, as the cost of staple foods including pork and vegetables vaulted. The MSCI China Index was down 3.6% for the quarter.

Brazil's economy expanded at the fastest pace in more than three years, increasing speculation that the central bank may keep borrowing costs unchanged next year to cap inflation. Gross domestic product rose 5.7% in the third quarter, compared with a revised 5.6% increase in the second quarter, well above consensus expectations of 4.9%. The MSCI Brazil Index was up 13.2% for the quarter. In Argentina the economy expanded at the fastest pace in 5 months in October, outpacing forecasts, led by higher industrial output as consumption and exports rose. The country's economy grew 9.4% in October from a year earlier with expansion attributed to higher loans for consumption, especially for home appliances and automobiles. The country is finishing up its fifth straight year of growth fueled by both the currency devaluation in 2002 that made local goods attractive to foreign consumers and a drop in unemployment levels that boosted consumer purchasing power and increased local demand for goods. Amid the good news, inflation surged nearly 1% in November. The MSCI Argentina Index was down 10.1% for the quarter.

# Focus On: *Evolution of Defined Benefit Investment Policy*

In a previous issue, we offered recommendations for defined contribution plan investment policy. Here we offer similar thoughts for fiduciaries of defined benefit plans. In the last few years, we have seen at least three major policy trends:

- the rise of Liability-Driven Investing (LDI),
- the general shift from DB to DC, accompanied by DB plan freezes, and
- the success of endowments and "alternative" investments.

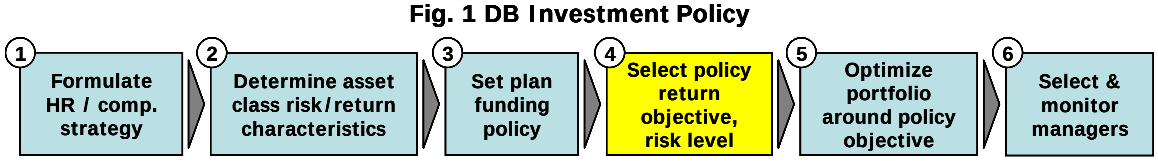
There have also been significant legal and accounting changes such as the Pension Protection Act and FAS 158. There is some argument to be made that DB investment policy may shortly be irrelevant, that in the next few years most DB plans could be either frozen or outsourced. Even then, it seems useful to have some idea of the optimal in-house DB strategy, and its financial implications for the sponsoring corporation, if only to be able to weigh a DB plan's cost against its employee retention/morale value, or to evaluate pricing on various outsourcing options. And rumors of DB plans' demise may yet turn out to have been greatly exaggerated.

Here we focus on what we believe to be the central, and thorniest, investment policy issue: how much risk to take, and of what kind? Certainly it is the theme running through each of the major trends above. The need for the plan fiduciary to make that decision, and hence select an asset allocation, is the issue that distinguishes DB plans from DC plans.

## Risk Management Framework for Investment Policy

Figure 1 shows a complete set of steps involved in formulating DB investment policy. On one hand, step 1 is not a question primarily for investment fiduciaries, and step 3 is a central part of investment policy but dominated by the legal requirements of ERISA, etc. Steps 2 and 6 raise very important questions about investing, but the answers do not necessarily depend on the unique characteristics of a given plan sponsor; a uniform process can be applied. Step 5 is largely mechanical.

**Fig. 1 DB Investment Policy**



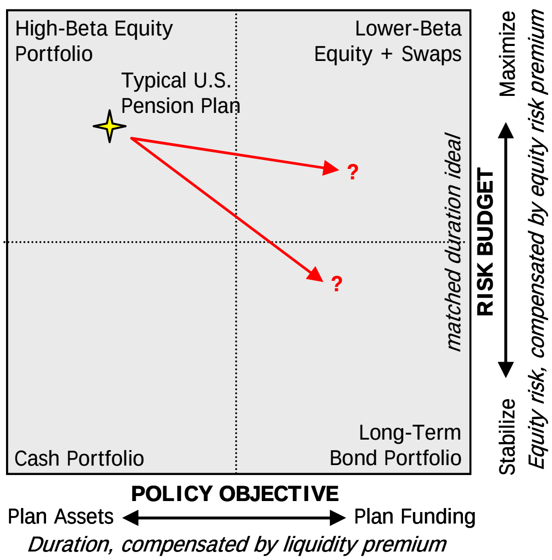

It is step 4 that defines the asset allocation process, and this step is most dependent on the sponsor's and participants' unique characteristics. The fiduciary must first select one, and only one, policy objective around which to optimize the strategy; then, the fiduciary must decide how much risk to take with respect to that objective. The framework is illustrated in Figure 2. We can restate our central question as "where to place the little yellow star?"

## Selecting the Right Policy Objective

Unfortunately, it is only possible to optimize an investment portfolio around one single objective at a time. What should the policy objective be for a pension plan? The classical approach focuses on plan *assets*, while the LDI approach focuses on plan *funding adequacy* (the ratio of assets to liabilities). The technical difference arises from the fact that most pension liabilities are highly interest-sensitive.

The typical pension plan in the 1990's was in the upper-left quadrant – managing return on plan assets as the policy goal (as opposed to plan funding), and assuming a fair amount of equity risk with stock allocations of 60-70%.

**Fig. 2 The Risk Spectra for DB Plan Portfolios**




From the viewpoint of the participant (and therefore, from a fiduciary's viewpoint), it is difficult to understand why any plan would be optimized for asset returns as opposed to funding adequacy, since the plan's funded ratio is the primary metric for the security of promised benefits. From the plan sponsor's viewpoint, funding is also the correct long-term goal, since cash contributions and expense reporting are ultimately driven by funding. Poorly-constructed accounting policies and pension funding requirements have tended to distort this basic economic relationship and incentivize plan sponsors to seek greater asset risk, but recent developments have moved both toward a more rational economic footing. In summary, it is very difficult to envision a fiduciary rationale for any investment policy that is not liability-driven.

In practice the choice of duration is somewhat limited by what is available in the fixed income market, which thins considerably for very long target durations. For most plans, the challenge is to match durations, not to find the optimal level of positive net duration (i.e. active liquidity risk).

There are also some problems in accurately placing any given potential asset allocation along these two dimensions. In particular, reducing equity allocations and increasing fixed income may be done simultaneously in order to increase asset duration and reduce beta. Equity assets may also be interest-sensitive; average equity duration, however, is very difficult to measure accurately. And even if one makes an assumption about this average, there are active debates between proponents of "buy and hold" long-term equity investment strategies and debunkers of the time diversification fallacy. These debates implicitly point to our desire, but current inability, to accurately distinguish individual equity durations; that is, to determine which equities have longer duration and will hence be systematically most efficient as pension investments.

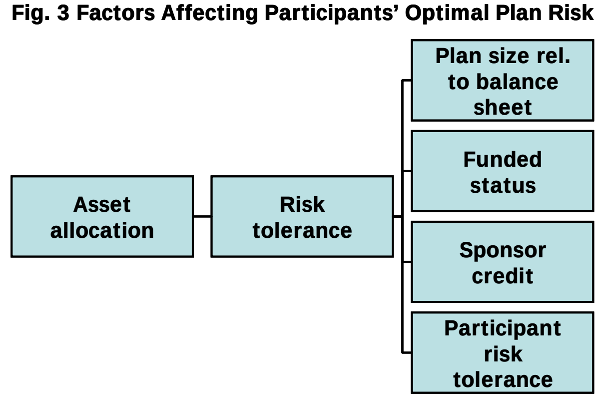
## Risk Budgeting for Fiduciaries

So again, objectively, how much of each type of risk is optimal for a given plan? Fiduciaries must certainly consider what is optimal for participants; in practice, the best interests of the sponsoring corporation play a role, justified, from a fiduciary perspective, because a plan that demands too much from its sponsor will not serve participants' interest in long-term stability. Fiduciaries must try to make the right trade-off between these two financial bounds on plan risk.

In our opinion, no one has yet really worked out a full technical treatment of either of these perspectives. We hope to contribute in an upcoming paper. Given limited space here, we merely lay out the basic issues.

First, what risk exposure would *participants* prefer? Figure 3 lays out the factors involved. Obviously the answer depends first on their individual risk appetites, as evidenced for example in DC plan asset allocations. Layering on a PBGC guarantee and the low probability of receiving more than 100% of the promised benefit (Fig. 4) leaves participants implicitly holding an option-like position. The challenge then is to estimate the probability of the sponsor fulfilling its obligation to pay 100% benefit, based on the health, stability, and creditworthiness of the underlying business, and the size of the

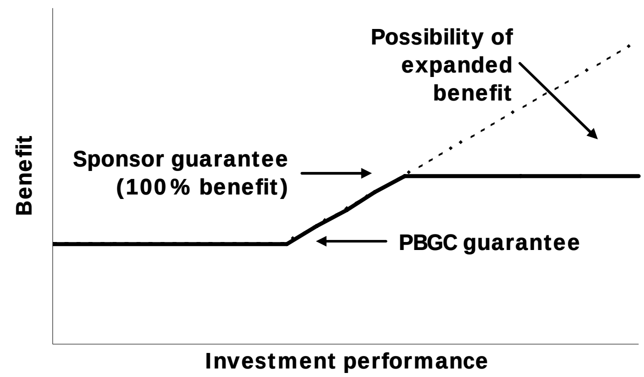
**Fig. 3 Factors Affecting Participants' Optimal Plan Risk**



plan relative to the business. *In principle*, with Fig. 3's four inputs, we should be able to compute objectively how participants' preferences will vary with different participant population characteristics and with different plan sponsor business outlooks.

There is a large majority of cases where the sponsoring corporation is a stable "going concern," the plan is relatively well-funded, and it does not overwhelm the balance sheet. In these cases, it is hard to see why it is optimal for participants – and hence why it is a responsible fiduciary position – to do anything other than immunize the plan and assume the minimum possible amount of risk. Since benefits that have already been earned are secured by the sponsor's promise of additional contributions, additional risk will only be justified if participants have some expectation of expanded future benefits that the sponsor is not legally required to provide if investment performance is good (e.g., continued plan sponsorship, cost-of-living adjustments, etc.).

**Fig. 4 Participant Payoff Function**




The possibility of expanded future benefits may justify increased risk, but only to the point that such risk does not jeopardize the solvency of the sponsor if events occur that would require a large contribution. For "frozen" plans with no prospects of benefit expansion, it is difficult to envision a fiduciary rationale for any strategy other than a minimal-risk strategy.

Of course, the picture may change for poorly-funded plans – by that, we mean plans so poorly funded that it is unlikely the plan sponsor could make contributions required to support currently-promised benefits. In this case, a participant might prefer to "shoot the moon" and rely on the PBGC backstop for plans where this applies. Note that the PBGC has an interest in preventing such policy behavior, reinforced by recent legislation.

What is financially optimal for *plan sponsors*? It is a common observation that DB asset allocations vary surprisingly little, and less than they should, across companies in very different business situations. It is possible to write down relatively straightforward equations about the [inverse] relationship between the amount of operating risk assumed and the optimal amount of pension asset risk. Some second-order issues are much less well understood:

- How does the mix of market/interest-rate pension asset risk and operating risk affect the cost of capital? Rating agencies are in the process of determining how much LDI implementation should affect a sponsor's credit rating.
- How efficiently can risk be taken through the pension plan? How much a discount should be made – or should it be assumed the market applies – based on the tax, legal, and regulatory issues unique to ERISA-governed plans?
- How can a plan sponsor optimize the multi-year risk of capital expenditure and pension funding? In other words, how can a sponsor assess the particular systematic risk exposures and cyclicality of its business and match those exposures against pension funding risk?

Finally, should the plan sponsor's point of view matter at all? The fiduciary's duty is solely, and exclusively, to the plan's participants. Clearly the solvency of the plan sponsor matters to the participant, and the possibility of expanded future benefits suggests that pension cost matters to participants as well. To the extent that there is a range of acceptable risk budgets to which participants are indifferent, the plan sponsor's risk appetite and tolerance could be a valid factor to consider; however, there are situations where only a narrow range of solutions make sense for participants. It is these circumstances that most seriously test the loyalty of the fiduciary.

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