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Pension Update: Treading Water Against Currents of Change

By James F. Moore

Winter earnings season brings an opportunity to reflect on the year that has passed in corporate America and speculate on what the future holds. Once again, despite relatively strong asset returns, the aggregate funded status of corporate defined benefit plans changed little. One friend remarked that he felt a little bit like Bill Murray in the movie "Groundhog Day." No matter what sort of turbulence, mayhem, or euphoria occurred during the year, the beginning of 2005 looks eerily like the beginning of 2004 in Funded Status Land. Echoing this were the comments of one plan sponsor who likened it to being on a treadmill – no matter how fast they ran, it did not seem as though they were moving ahead.

Again the culprit was falling interest rates. The table below compares year-end 2003 with estimates for 2004. The combination of above-expectation asset returns and contributions was enough to make headway against liability growth due to service and interest costs, but not to overcome a roughly \$60 billion increase in liabilities as rates fell. Again. Defying the prognostication ability of 24 of 25 economists surveyed by the Wall Street Journal at the year's beginning. Since the end of 1999, falling rates have added some \$300 billion in liabilities to the plans of S&P 500 members.

	2003		2004 est.
Funded Ratio	86.8%		85.8%
Assets (\$M)		Liabilities (\$M)	
12/31/03	1,139,600	12/31/03	1,311,900
Return On Assets (9.45%)	107,700	Service Cost	32,900
Contributions	36,000	Interest Cost	77,200
Benefits Paid	(85,500)	Benefits Paid	(85,500)
		Actuarial Loss (rate decrease)	59,000
12/31/04	1,197,800	12/31/04	1,395,500

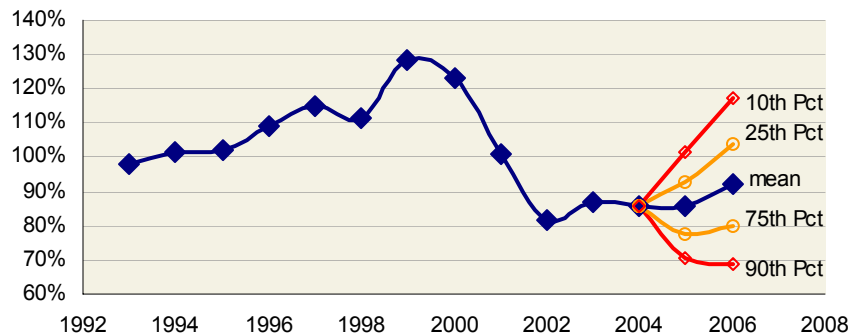
Source: PIMCO estimates based data collected from CSFB, annual reports, and consensus of various estimates of plan contributions. Proxy ROA assumption assumes 55% invested in S&P 500, 10% MSCI-EAFE, 30% LBAG, and 5% 3m T-bills + 100bps. Actuarial loss assumes mean discount rate drop from 6.25% to 5.875% paralleling behavior of Moody's Long-term AA corporate index and an average liability duration of 12 years.

Unfortunately things are likely to get worse before they get better. Yield curve changes in January picked up where they left off in the fourth quarter of 2004 as the curve continued to flatten, most pronouncedly at the long end of the curve. As of the beginning of February, the Moody's AA long term corporate index was below 5.50% and 30-year Treasuries were below 4.50% - rates that appear unfathomably low to many observers. On the other hand, Europeans and the Japanese wish they were so lucky. They stare down long bonds yielding below 4.00% and 2.50% respectively.

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Figure 1 and 2 look at the funding status of the S&P 500 on a prospective basis allowing for variation in both asset returns and discount rates.¹ Figure 1 presents historic funding ratios and projections through 2006 with envelopes indicating an inter-quartile range, 25th percentile to 75th percentile, and an inter-decile range, 10% to 90%.

Figure 1:
Aggregate Funding Ratio of S&P 500



Source: CSFB, PIMCO estimates

The first thing to note is that on average, things will not improve for 2005 and will improve marginally in 2006. This is despite an assumption of increasing contributions – likely, as more and more firms face required minimum contributions – and higher interest rates.² In order for the hole to be plugged, either asset returns, long rates, or contributions must be greater than anticipated. The table below shows the impact of each of the three on funding ratio and aggregate deficit.

	Increase in Funding Ratio	Improvement to Deficit (\$B)
Mean ROA: +1%	0.6%	20.8
Discount Rate: +25 bps	2.7%	44.3
Contributions: +\$10B	0.5%	18.9

Source: PIMCO estimates based on assumptions presented below

¹ Forecast rolls forward 2004 estimate for 2005 and 2006. Service cost is estimated at 2.5% of previous year's liabilities. Benefit payments grow at 5% per annum. Interest cost is based on previous year discount rate. Contributions are assumed at \$60B for 2005 and \$100B for 2006. Actuarial gain/(loss) – attributable to change in discount rate – and return on assets are stochastic with the following assumptions:

	Mean	Volatility	Correlation			
US Equities	7.5%	16%	1.00	0.65	-0.20	-0.10
International Equities	7.5%	16%		1.00	0.00	0.00
Intermediate Rates	+25 bps	110 bps			1.00	0.90
Long Rates	+12.5bps	90 bps				1.00

Durations are assumed as 4.5 years for sponsor bond portfolios and 12 years for liabilities. The asset mix is assumed as 55% US Equities, 10% International Equities, and 35% intermediate US Bonds. Note that a negative correlation between interest rate changes and US equity returns implies a positive correlation between equity and bond returns.

² Mean future interest rates are consistent with forward rates for similar maturities which are higher as the yield curve is upwardly sloped.

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The second is the wide spread of the percentile envelopes. Given the mismatch in volatility characteristics between assets and liabilities, funding ratios can change very meaningfully in a short period of time. Without changing contribution estimates, there is a roughly 30% probability that the ship will right itself through the movements of the capital markets in the next two years. However, that means that there is a 70% chance it will not. There is a better than 40% chance that the aggregate funding situation will be worse than it is today in two years' time. The only sure-fire way to fix the problem is to make contributions to the plans. However, to do so could be costly. Plugging the current hole would require contributions roughly on par with total dividends paid by the S&P 500 or more than half of its estimated capital expenditure for 2004.³

Also bear in mind that these exposures and costs are not borne evenly across the corporate America. Roughly one-third of the S&P 500 corporations have no DB plans and roughly ten percent have plans that are fully funded.

Currents along the Potomac

Two-thousand four brought legislative change in funding for defined benefit plans and the Bush agenda for the second term is packed with the promise of widespread change for the American retirement landscape. In April, President Bush played Easter Bunny delivering his signature on a bill that temporarily replaced the 30-year Treasury as the benchmark rate for determining funding liabilities. Whether the bill was candy or an egg is in the eyes of the beholder. For cash constrained sponsors, especially those in targeted industries like steel and the airlines, the bill reduced the immediacy of the need to fund plans. For the Pension Benefit Guaranty Corporation (PBGC), it exacerbated the agency's exposure to weak plans.

The law was a stop-gap measure. It only covers the years 2004 and 2005 and sets discount rates as the 4-year trailing average of three long corporate bond indices. One of the issues with using a trailing average is that funding discount rates lag actual market rates. The pain is forestalled, not eliminated. The table below shows the impact of the averaging on year-end discount rates assuming that interest rates stay where they are currently and the law is extended.

	2004	2005E	2006E	2007E
Funding Rate	6.10%	5.81%	5.65%	5.60%

Source: PIMCO estimates assuming no change in the Citi AAA/AA 10+ year, Merrill Lynch AA-AAA 10+ year, or Lehman A Long indices after 12/31/04. Rate as of 12/31/2004 and historic rates available at <http://www.irs.gov/retirement/article/0,,id=123229,00.html>

Note that rates continue to fall. This means higher liabilities and, consequently, greater required minimum contributions. In order for discount rates to increase for 2005, current long bond yields would have to rise by more than 80 basis points immediately or some 150 basis points smoothly during the year.

³ Based on estimates from Morgan Stanley Research – dividends: \$183B, CAPEX: \$346B.

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Actual rates will certainly differ, but could be even lower if the Administration's 2005 proposal to "Strengthen Funding for Single-Employer Pension Plans" is implemented in its full scope.⁴ The proposal is comprehensive and synthesizes more than two years worth of ongoing work at Treasury, Labor, and the PBGC. The lists below outline key reform proposals.

Funding

1. Interest rates - All discounting by a AA yield curve, specified by Treasury, that averages rates at each maturity over a 90-day trailing period up to valuation date.
2. Assets - All assets to be measured at fair market value at valuation date.
3. Recognition of sponsor financial health in funding requirements. Sponsors with investment grade (IG) ratings get better treatment than non-IG credits. Very weak sponsors would have to manage to an "at-risk" liability that assumes accelerated retirements and reduces economic termination optionality.
4. Reduce amortization periods. Currently, actuarial gains/(losses) are amortized over five years and plan amendments over 30 years. New rules would amortize unfunded liabilities over seven years.
5. Remove credit balances. These enabled underfunded plans to avoid contributions if they had previously made contributions in excess of the minimum required amounts in the past and were carrying a "credit balance".
6. Allow tax-deductible contributions up to 130% funding. This would let companies fund in good times in anticipation of hard times.
7. Restrict lump sums, accelerated benefits (early retirement), and benefit increases for underfunded plans.
8. Eliminate shut down benefits. These were a legacy of the steel industry that cost the PBGC dearly.
9. Restrict funding of non-qualified deferred compensation plans if qualified defined benefit plans are underfunded.

Pension Benefit Guaranty Corporation (PBGC)

1. Increase per head premium from \$19 to \$30.
2. Tie variable rate premium (VRP) on unfunded liabilities to sponsor credit rating.
3. Allow DOL/Treasury to review and change the VRP on a periodic basis to reflect changes in market conditions and the PBGC's financial health without Congressional approval for each rate change.
4. Freeze covered benefits at the time a sponsor enters bankruptcy.

⁴ See www.dol.gov/ebsa/pdf/SEPproposal.pdf

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5. Allow the PBGC to perfect liens in bankruptcy and increase its seniority in the bankruptcy process.
6. Eliminate guaranty of shutdown benefits.

The catalyst to the Administration's proposal is almost certainly the fragile and decaying health of the PBGC and the elimination of the moral hazard associated with current rules. Faced with systemic deterioration in old-line airlines and the ravages of the two-front war/ perfect storm / double-whammy of disappointing equity returns and falling interest rates, the agency's health has deteriorated markedly over the past few years as illustrated below.

	2000	2001	2002	2003	2004
Surplus/(Deficit)	\$9.7B	\$7.7B	(\$3.6B)	(\$11.2B)	(\$23.3B)
Reasonably Possible Claims Exposure	\$4B	\$10B	\$35B	\$86B	\$96B

Source: PBGC

Given the alarming growth in the PBGC's current deficit and the size of their estimated reasonably possible claims which could easily cause the deficit to double in the next few years, some have compared this to the Savings & Loan crisis of the early nineties. Bradley Belt, the agency's Executive Director, was counsel to the Senate Banking Committee at the time and has commented on similarities and differences:

Some of the comparisons are quite apt. As was the case with the S&L crisis, the existence of a government guarantee creates a moral hazard and encourages unacceptable risk taking. In both instances, the regulatory systems are characterized by a lack in transparency. Further, measures taken to "buy time" have in fact made the situation worse. One significant difference is that the numerous instances of fraud and mismanagement that characterized the S&L crisis have not appeared in the case of pensions. Another difference is that pension plans, unlike many S&L's, do not face an imminent liquidity crisis.⁵

While the Administration's proposal would go a long way to shoring up the system, it may face an uphill fight with some of its elements. Some have called it a "wish list", but it already shows signs of political compromise that may make it more palatable to Congress and some vested interests. For example, if PBGC had its wish, variable rate premia would be tied not only to sponsor credit quality but plan asset allocation as well. Credit quality addresses the *likelihood* of a claim; asset composition would address the potential *severity* of a claim. Allowing the PBGC to perfect its bankruptcy liens and move higher up the ladder in claimant seniority may be an ingenious backdoor approach that achieves the same outcome. If other creditors are subordinated, they may find it in their own interest to ensure the pension's health – even to the extent of including debt covenants that apply to plan asset allocation.

⁵ Bradley Belt, Executive Director of the PBGC as quoted in "The Next Savings and Loan Crisis? Q&A with the Head of the PBGC," Credit Suisse First Boston Equity Research, January 19, 2005.

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Another interesting approach is the degree of preference reserved for investment grade companies. Under current law, the system has a degree of mutuality – before taxpayers would bail out a weak PBGC, other plan sponsors would take the first hit in higher premiums. Dividing the pain unequally may neutralize a segment of the lobbying against variable rate premia increases. In addition, increasing the amount that can be contributed as tax-deductible contributions likely appeals to the same clientele – healthy companies pay taxes.

Perhaps the most hotly contested element of the plan will be the move to a yield curve. This will increase the liabilities of those companies with relatively mature plans and may reduce them slightly for relatively young plans. The degree is a function of the steepness of the yield curve at any particular point in time. Mature plans may see effective discount rates lowered by as much as 25-30 basis points.⁶

Between the pension proposal and Social Security reform, retirement wonks and pundits will be keeping a watchful eye on Washington. It is obvious that the President has cast his legacy on other people's retirements. It will be interesting to see if he has enough political capital on the Hill to win lasting and meaningful reform.

Currents From Long Island Sound

The other powerful voice on corporate pensions comes from the Financial Accounting Standards Board (FASB) in Norwalk, CT. At the end of 2003 FASB increased the disclosure requirements for pensions to give users of financial statements a more complete picture of pension health. The revision to FAS 132 called for more complete disclosure of asset allocation and discussion as to how expected return on assets is determined. In addition, sponsors are now required to disclose accumulated benefit obligation (ABO) in addition to projected benefit obligation (PBO) – indicating what a sponsor's exposure would look like on a frozen as opposed to an ongoing basis – and expectations for near-term contributions to plans.

While most analysts welcomed the increased disclosure, many thought the moves did not go far enough. Among the items debated but not included were inclusion of plan asset and liability durations.

The open question is what is next for FASB. There is an ongoing debate whether additional disclosure is sufficient or whether more wholesale reform is needed. Those in the reform camp point to a number of flaws in FAS 87, a 20 year-old standard. The first is the degree of smoothing – between corridors that ignore a substantial portion of economic gains and losses and long amortization bases that smooth the residual, these fluctuations may take years or even a decade or more to work their way from the footnotes to the income statement. The second flaw is the use of a return on assets assumption that is a long-term expectation and therefore realizes anticipated gains before the accompanying risk is borne. As with any sort of averaging or expectation, these have the effect of smoothing earnings. Past economic gains are recognized as future profits and losses are borne over a number of years. While smoothing was seen

⁶ Moore and Peskin, "Pension Discount Rate Revisited," *Global Pensions Quarterly*, Morgan Stanley, October 2003.

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as desirable in an accrual accounting world, it smacks of cookie-jar-accounting in a mark-to-market world.

The Europeans would seem to be ahead of us in the move to look at pensions through mark-to-market glasses, but before we cross the Atlantic, let us return briefly to Washington. While FASB makes the rules, it is the Securities and Exchange Commission (SEC) that enforces them. The SEC has given notice that there is a new sheriff in town and he is not above cracking heads and public brow beatings in the wake of corporate fraud that filled the news pages over the past few years. While none of the big headline scandals have been pension issues, the SEC put everyone on alert by requesting detailed information on their pension accounting from six large corporates in the fall of 2004. The SEC was quick to point out that the inquiries were not to be taken as suggesting that there was anything wrong, but given the importance of pensions for these companies' financials, the Commission would be scrutinizing their processes with pencils sharpened and eyeshades fastened tight.

Conversation with a senior SEC official gave some indication as to their intent. The Commission would like corporates where the pension plan is deemed material to elevate discussion of the funded status of the plan beyond the footnotes. They would like candid and comprehensive discourse in the management discussion and analysis (MD&A) section. In addition, the SEC wants companies to give serious thought as to how they arrive at their asset return assumptions. Echoing the disclosure on any mutual fund prospectus – *past performance is no guarantee of future results* - future expectations must stand independent of past experience. In addition, arriving at a number simply because it is in the midst of a peer group is not seen as sufficient thought and process.

Another current is that of convergence between accounting and funding rules. Greater consistency and a reduction in valuations, paperwork, and complexity is something that does have near universal support.

Currents From Across the Atlantic

While change is advancing in the United States, it is a slow crawl compared to what we see in Europe on the accounting and regulatory front. Three forces bear watching – FRS17 in the U.K., IAS19, and FTK in the Netherlands.

Financial Reporting Standard 17 (FRS 17) was first issued in November of 2000, revised in 2002, and fully implemented as of January 1, 2005. The standard differs from FAS 87, the U.S. standard, in two principal ways. First, what we see as Net Periodic Pension Cost and incorporate into operating expense is bifurcated and recognized in different places. Service cost, the cost of new benefits accruals, remains in operating earnings. Interest cost and expected return on assets are recognized as financing costs. Actuarial gains and losses do not flow into earnings. Instead they are adjustments to shareholder's equity in the "struggle" account (short-term recognition of gains and losses).⁷ Gains and losses are not amortized and as such can create substantial volatility in shareholder's equity if there is an asset-liability mismatch.

⁷ Analogous to Accumulated Other Comprehensive Income (AOCI) under US GAAP.

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The principal architect of FRS 17, Sir David Tweedie, has moved on to chair the International Accounting Standards Board. Tweedie, whose verbiage is purposefully ornate, has commented that FAS 87's smoothing of gains and losses "*makes about as much sense as totaling the gains and losses, dividing by the cube-root of the distance to the moon in miles, and multiplying by your shoe size.*"⁸ He has seen fit however to compromise as IAS 19 strikes a balance between the smoothing of FAS 87 and the absence of it in FRS 17.⁹ The tilt toward the U.K. standard will lead sponsors on the continent to pay more attention to liability characteristics in choosing asset mix. While the move towards international convergence will have meaningful implications for those with existing funded systems, it may be even more dramatic where plans previously have been largely unfunded. Of particular importance is Germany given its size. Marking liabilities to market will create even more earnings and balance sheet volatility if there are no specific assets to counter the liabilities. Expect a move towards funding on this front.

The most dramatic move to date is the Dutch pension supervisor and its Financieel Toezichtskader (FTK). As of January 1, 2006, pension funds in the Netherlands will effectively be supervised as insurers. Although risk tests are reduced compared to those faced by insurers, what is being implemented in the Netherlands is a stringent Value-at-Risk-based (VaR) capital adequacy test. Plans must meet solvency standards annually and must be able to demonstrate solvency prospectively at a 95th percentile standard. Failure to do so can lead to suspension of benefit accruals or worse. The biggest risks to the prospective test are mismatch in the duration of assets and liabilities or volatile asset mixes. The movement among the Dutch to reconfigure asset allocations is swift and substantial.

Sponsor and Market Responses to the Currents

How will sponsors and the markets react to these changes? This is the sixty-four thousand dollar question. To get some idea, the Committee for the Investment of Employee Benefit Assets (CIEBA) polled Chief Investment Officers of member companies. The CIO's were asked what their estimated move from equity to fixed income exposure would be in response to various changes in funding law or accounting. They were also asked to give their assessment of the collective impact given their individual beliefs as to the likelihood of each. The table below presents those results along with my subjective belief as to the likelihood of each.

⁸ His views on the amortization of goodwill are equally florid. He has commented that in his eyes Johnnie Walker has about as much brand equity as the entire United States and to amortize it away if acquired makes no sense whatsoever.

⁹ A nice comparative table summarizing the differences amongst various reporting standards is available in "Pensions in Continental Europe: IFRS to expose the true funding position," UBS Investment Research January 11, 2005.

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Potential Change	Change in Equity Allocation	Likelihood
FASB Elimination of smoothing gains and losses	-9.0%	Moderate
Treasury requires use of unsmoothed yield curve for funding	-8.1%	High
PBGC alters premium structure to reflect asset allocation	-7.0%	Low
Rating Agencies treat PBO as debt	-7.0%	Moderate
Broad adoption by analysts of S&P's definition of core earnings	-5.5%	Moderate
Discount rate process altered to use single long-term growth rate	-0.8%	Low
FASB requires additional disclosure on expected returns	-0.3%	Done
Collected Impact	-12.7%	

Sources: CIEBA, Morgan Stanley Research

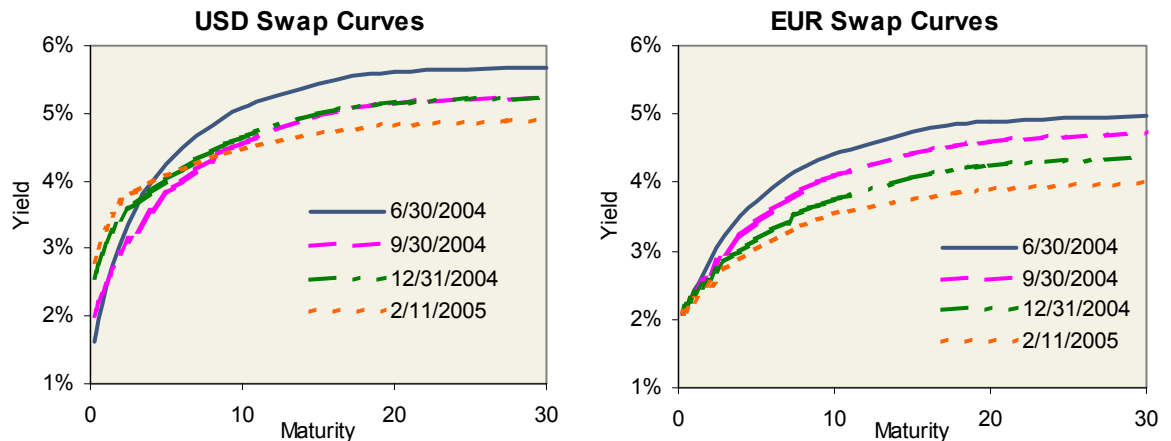
*Treasury yield curve proposal would reduce smoothing from 4-year to 90-day averaging.

If the estimated collected impact is accurate, it could have a meaningful effect on the shape of the yield curve if corporate plans move to hedge liabilities en masse. A back of the envelope estimation would indicate additional potential demand at roughly \$200B in a market where total supply of investment grade corporates and Treasuries is approximately \$1300B and the Treasury is not currently issuing nominal bonds longer than ten years.

There has been significant flattening in both U.S. and Euro yield curves since the middle of 2004 as illustrated in Figures 2 a-b. Long rates have dropped some 78 basis points in the US and 102 bps in Europe over the period with 35 and 39 of those occurring in the first six weeks of 2005, respectively. Given the immediacy of the need in the Netherlands, some downward pressure would be expected, but the magnitude has caught many market participants off guard. The case in the United States is more puzzling as this has happened over the same period in which the Federal Reserve has hiked the discount rate by 150 basis points and accounting and regulatory pressures are less pressing.

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Figure 2a-b.



Source: Bloomberg

We have seen an increase in allocation to long duration in the United States, but not of such a magnitude that would explain this phenomenon alone. I recently spoke with the head of USD interest rate derivative trading at a major broker dealer and his experience was similar. The market is responding to the faint sounds of still distant hoof beats or their rumor, not the sight of an actual stampede.

The flattening of the curve has had two effects – a heightened awareness and tension due to falling yields/rising liabilities and more concern about moving at exactly the wrong time only to watch the yield curve then bound up like a coiled spring releasing its potential energy. Viewed in its proper context, duration extension is a hedging decision and most sponsors should be relatively indifferent as to entry points if they treat it as such. However, many a CIO, Treasurer, or CFO realize that Monday morning quarterbacks tend to forget these things and focus solely on asset returns, conveniently forgetting the behavior of what is being hedged. An increasingly common approach among corporations who have extended duration is to “average in” by first lengthening benchmarks of existing bond allocations and then marking future contributions as funding the long bond portfolio. This mitigates the risk of ex-post second-guessing.

Flatter yield curves also make option-based strategies less appealing. As the swap rates that underlie options are forward rates, flatter yield curves decrease the spread between forward and spot rates. Zero-cost collars where the right to receive a fixed coupon on a swap at current spot levels in exchange for selling the obligation to pay fixed at a higher rate generated 30-35 basis points of “wiggle room” at the end of June. Now zero cost collars would only allow for 10-15 basis points of beneficial rate exposure for those putting on collars.

The other sixty-four thousand dollar question is, “How low is too low?” We have seen the yield curve inverted at the long end in the UK for a few years now. There are some fundamental differences in market supply and demand driven in large part by how life insurers are regulated and corporate issuance patterns. At some levels long bonds do not offer sustainable risk-adjusted returns. It would stand to reason that the tens-thirties

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slope of TIPS provides some (soft) lower bound for nominal tens thirties. We have yet to test this. Also, logic would dictate that in equilibrium, at some point demand creates its own supply – if funding in thirties is attractive relative to funding in ten-year issuance, the savvy corporate treasurer will be only too happy to take the additional liquidity. However, to paraphrase Keynes, the market can stay irrational far longer than the average investor can stay solvent.

One other potential irrationality that some worry about is the possibility of a bank run-like phenomenon. If enough investors rush to buy at the same time, yields can drop quickly. This increases liabilities and liability duration causing further asset-liability mismatch and increasing demand. Some will choose to hedge as they cannot bear the pain of mismatch; others will look for higher yielding assets.

The quest for return is something all plan sponsors face and they are increasingly looking to alternatives to provide it. Are there enough good assets and managers in these spaces to meet the demand? Estimates of undrawn cash commitments in private equity and venture capital funds range from \$180B - \$250B.¹⁰ The rush of money into hedge funds and the rush of wide-eyed twenty-somethings with two or three years of street experience willing to manage these funds is staggering. This is not to say that there are not great managers and opportunities in these fields, but there is certainly a higher ratio of chaff to wheat than existed only a few short years ago.

One growing asset class that may be able to meet a piece of the increased demand is commodities. These markets have some depth and liquidity, particularly in energy futures. However the thirst for return and the strong run-up in commodities mask their real value in asset allocation. They are a great diversifier with very low correlations to both equities and bonds.

As with just about everything in finance these days, some may be tempted to find connections to the Chinese. However, the asset-liability mismatch is a problem of our own making. We have “a pension deficit disorder.”¹¹ Unfortunately, this disease has no Ritalin or other quick fix. It is costly to cure as the way out is through contributions and prudent management to avoid a relapse in the future. Indeed, we live in interesting times.

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¹⁰ Sources: McKinsey, CNBC, Robert Parrino, University of Texas.

¹¹ Pun borrowed from “Pensions: Goldfinger,” Morgan Stanley Research, October 24, 2004.

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