Asset Management

Pension Solutions

January 2020

US Corporate Pension Review and Preview: Running in Place

Executive Summary

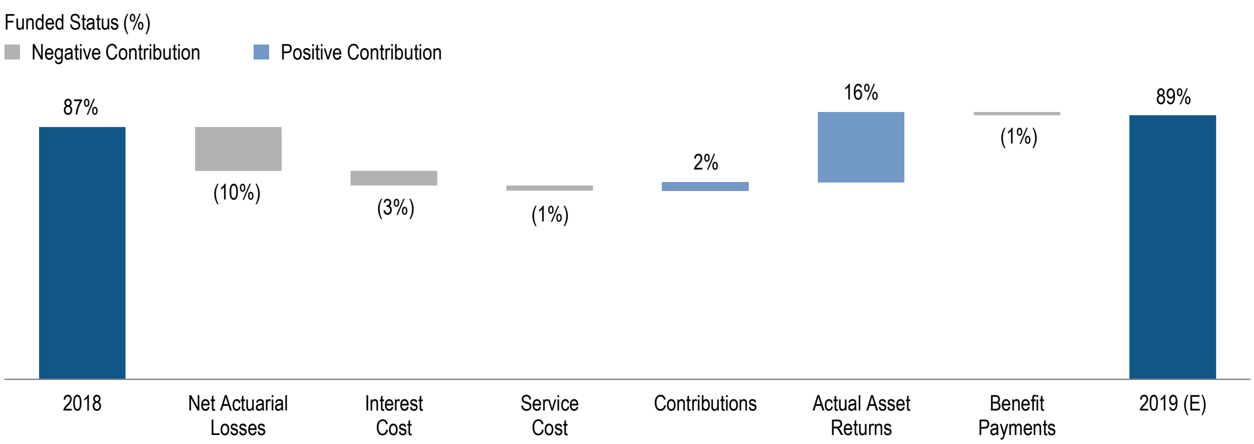
Despite global equity markets advancing over 20% during 2019, led by approximately 30% returns in the US, we estimate the aggregate GAAP funded level of US corporate defined benefit (DB) plans was only marginally higher year-over-year. Lower interest rates pressured the liability side of the funded status equation, offsetting much of the gains from strong financial markets. Plans with longer than average liability durations and/or with sponsors that did not make sizeable contributions during 2019 may post a year-over-year decline in funded status.

Despite these challenges, de-risking actions by plan sponsors were robust once again. Looking ahead to 2020, we highlight several issues we believe plan sponsors may want to consider, including the possibility of funding relief wearing away over the next several years, how to think about an optimal hedge ratio, particularly during a low interest rate environment, and governance issues around glide paths and de-risking.

Glancing Back: Funded Levels Relatively Flat Despite Significant Asset Gains

Funded levels struggled to rise as interest rates fall year-over-year. We estimate the aggregate funded status of the US corporate DB system rose marginally in 2019. US plans of S&P 500 companies were, in aggregate, 87% funded on a GAAP basis as of the end of 2018. Over the next two months, plan sponsors that report on a calendar-year basis will file their annual reports with the Securities and Exchange Commission (SEC) and will report actual 2019 funded status figures. Our work suggests that, on a system-wide basis, funded levels rose about two percentage points during 2019 (see Exhibit 1). Many plans with a December fiscal year-end will likely report asset gains last year of around 20% on a portfolio-wide basis, which helped to increase funded levels by around 16 percentage points. However, discount rates for GAAP accounting purposes will likely be down around 100 basis points, which contributed to around a ten percentage point headwind to funded status.

EXHIBIT 1: FUNDED LEVELS WILL LIKELY BE ROUGHLY FLAT FOR MANY PLANS



Source: Goldman Sachs Asset Management, company reports; as of December 2019. Figure does not sum due to rounding.

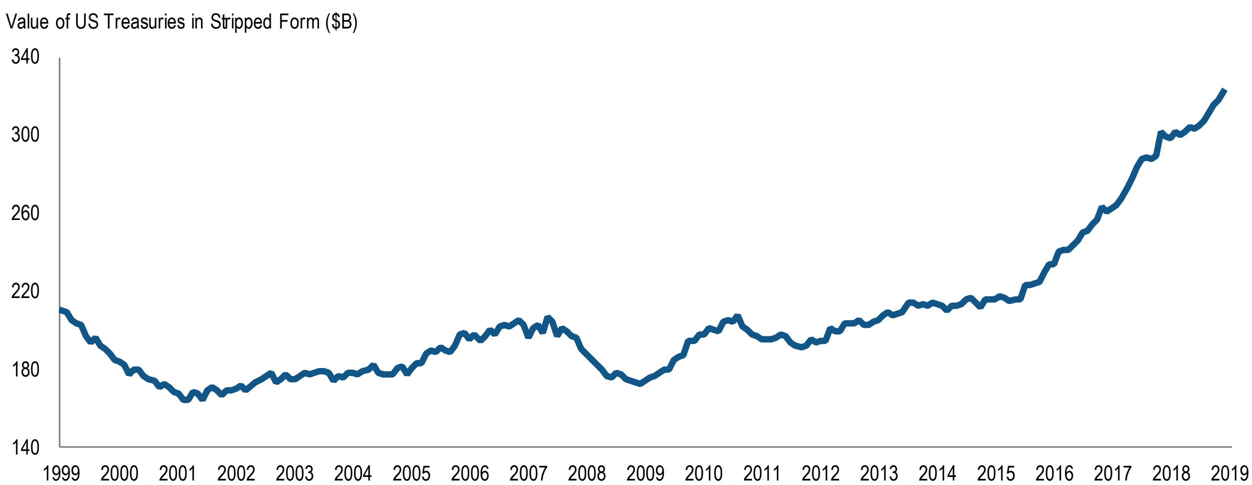
Individual results will obviously vary. In many cases the variances will likely be linked to contribution activity. Based on expected 2019 contributions disclosed by plan sponsors as part of 2018 financial results, we note that many companies anticipated making little to no contributions this past year. This was not surprising given that 1) funding relief that is still in place means many sponsors had no mandatory contribution requirements in 2019 and 2) several sponsors had previously made notable voluntary contributions in 2017 and 2018 to capture larger tax deductions before lower corporate tax rates went into effect.

Nonetheless, we note that some organizations, such as Caterpillar, Delta and UPS still made sizable contributions during calendar-year 2019. In some cases, these contributions were voluntary and/or funded by debt offerings as plan sponsors took advantage of lower rates to raise capital.

Liability Driven Investing (LDI) train chugs along, even in a falling interest rate environment. Despite likely muted gains in funded levels, if any at all, and a significant drop in interest rates during the year, many plans continued to march towards greater interest rate hedging within their asset allocations. Over the course of the next few months we will compile, as we do every year, the actual asset allocations of US corporate DB plans as they file their annual reports with the SEC. However, we can already cite several data points which suggest that many plans continued to gravitate towards being at least liability-aware, if not liability-driven, in their investment strategy during 2019.

First, US Treasury stripping activity remained elevated during 2019 (see Exhibit 2). Corporate DB plans are natural buyers of strips for their duration and hedging characteristics. Demand from this community likely contributed to the notable increase in stripping over the past year.

EXHIBIT 2: PENSION DEMAND TO HEDGE DURATION HAS LIKELY CONTRIBUTED TO AN INCREASE IN STRIPPED US TREASURIES

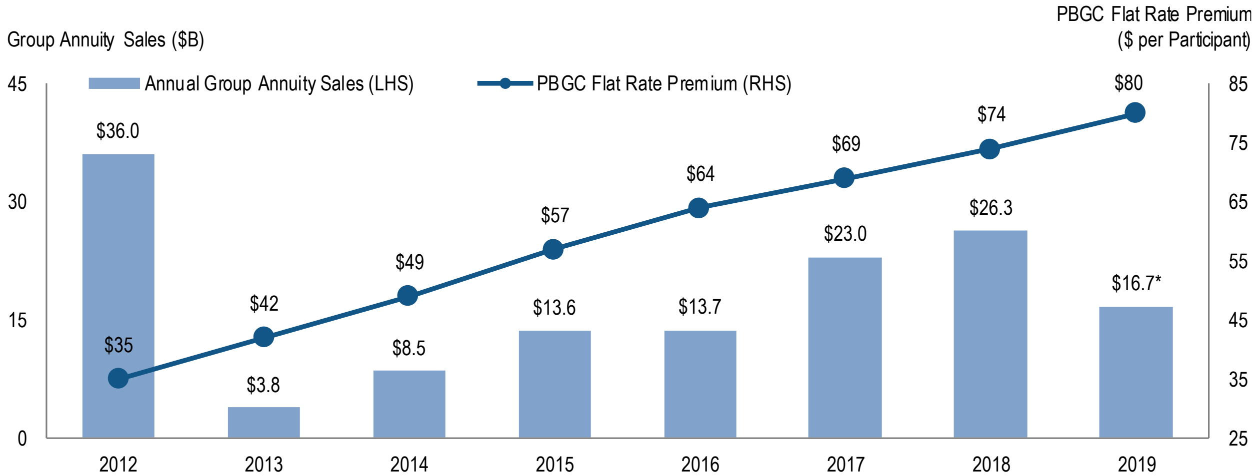


Source: STPSTOTL Index, Bloomberg, Goldman Sachs Asset Management; as of November 2019. Past performance does not guarantee future results, which may vary.

Second, sponsors appear to be focused on the amount of interest rate risk between plan assets and plan liabilities. According to CIO Magazine's annual LDI Survey, the median hedge ratio of respondents increased from 60% during 2018 to 68% in 2019. These figures are notably higher than five or six years ago when we observed that many plans were maintaining hedge ratios below 50%.

Risk transfer remained robust despite a challenging year. During 2019 many sponsors were able to effectuate either a partial annuitization of plan participants or, in some cases, a complete plan termination. As seen in Exhibit 3, group annuity sales were almost $17 billion through the end of Q3 2019. This represented the largest dollar amount of group annuity sales during the first nine months of any year over the past decade. With many transactions typically closing in the fourth quarter of a calendar year, we would expect full-year 2019 to at least be consistent with the levels seen in the past two years.

EXHIBIT 3: RISING PBGC PREMIUMS CONTINUE TO HELP DRIVE RISK TRANSFER ACTIVITY



* 2019 data YTD through Q3 and is not annualized.

Source: LIMRA, Goldman Sachs Asset Management.

A key driver of the robust risk transfer market continues to be rising flat rate premiums charged by the Pension Benefit Guaranty Corporation (PBGC) on every participant in the plan. Those premiums rose to $80 per participant in 2019, and have been set at $83 for 2020. While those premiums will likely continue to influence the desire of plan sponsors to reduce the number of participants in their plans, we discuss later in this note that low interest rates may dampen some risk transfer activity in 2020.

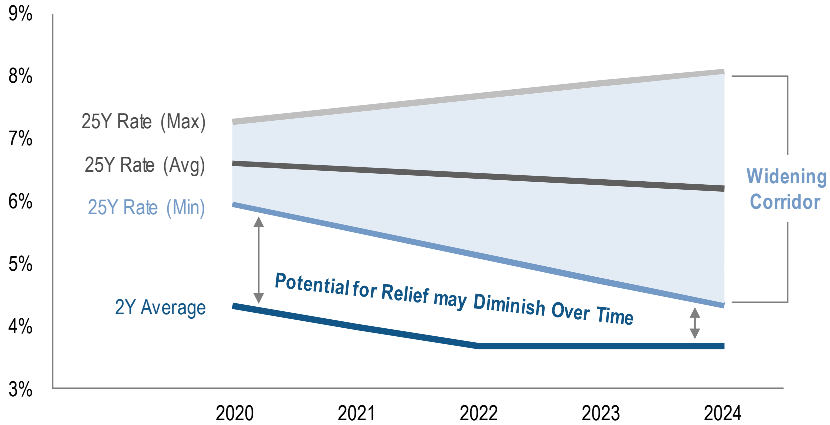
Looking Forward: Plenty to Consider in 2020

Funding relief scheduled to begin wearing away in 2021 – plan sponsors need to start planning accordingly. The multiple iterations of funding relief (MAP—21, HATFA, BBA), which have helped to keep mandatory contributions low in recent years, will begin to sunset in 2021. We have already heard from several clients that contribution projections from their actuaries indicate that some will face notable increases over the next several years. Our own work indicates that contribution requirements could rise several-fold after 2020.

Much of the erosion of relief is tied to the expansion of the “corridor.” Under existing rules, sponsors calculate a 2-year average of interest rates, and then compare them to a 25-year average of interest rates, subject to a corridor. The current corridor is +/- 10% of the 25-year average. If the 2-year average falls within the corridor, then that rate is used to value obligations for funding purposes. If it is below the corridor, as it is today and as it has been since the inception of the relief, sponsors can move up and use the interest rate reflected by the bottom of the corridor. This has allowed sponsors to use higher interest rates for funding calculations, reducing ERISA contribution requirements.

With the corridor set to widen beginning in 2021, as indicated by the schedule on the right side of Exhibit 4, many sponsors will likely not be able to use as high an interest rate as in previous years. Absent legislative action to extend the relief again, effective interest rates for funding calculations will likely come down, resulting in a higher valuation of liabilities and a lower funded percentage for contribution requirement purposes. The graph on the left side of Exhibit 4 provides an illustration of the corridor widening in future years, using the 3rd segment of the yield curve for illustrative purposes, which results in a smaller step up from the 2-year average than when the corridor was at 10%.

EXHIBIT 4: SCHEDULED WIDENING OF THE CORRIDOR MAY RESULT IN HIGHER CONTRIBUTION REQUIREMENTS



	Applicable Minimum	Applicable Maximum
2012 - 2020	90%	110%
2021	85%	115%
2022	80%	120%
2023	75%	125%
2024 and after	70%	130%

Source: Goldman Sachs Asset Management, Internal Revenue Service; as of December 2019. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation.

What is the optimal hedge ratio?, and other existential questions. Questions revolving around interest rate hedge ratios have consistently been one of the most popular topics of client conversations for the past several years. How a hedge ratio should change over time, the potential use of derivatives to complement physical securities as part of a hedging program, or what other plans are doing with their hedge ratios have all come up multiple times in one way, shape or form.

Ultimately, many of these questions get at what clients are really trying to figure out – what is the optimal hedge ratio? We noted earlier that many plans have been increasing their hedge ratios in recent years. As with many things in life, there is no “one size fits all answer” and attempting to identify an “optimal” may not be realistic.

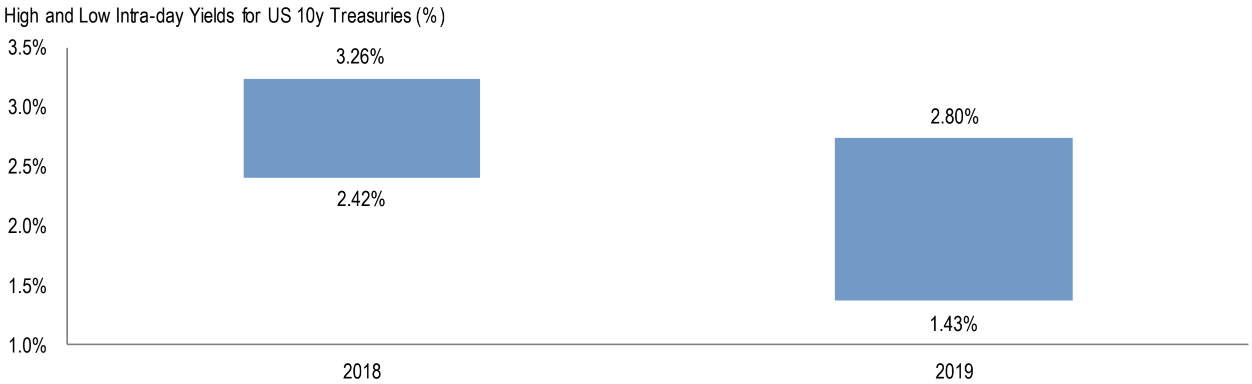
Nonetheless, we would argue that various factors may cause a plan to lean more in one direction than the other with respect to its hedge ratio, such as the funded status of the plan and how material it may be with respect to the sponsor. Identifying and assessing those factors can be used to help fine tune and, to a certain point, quantify what that hedge ratio may be for a particular plan. We expect more sponsors to attack this question in 2020, in particular as their allocation to LDI-type instruments continues to increase.

Lower rates may dampen 2020 risk transfer activity. While many sponsors still aspire to get out of the pension business, the lower interest rate environment may temporarily impede some of those plans. Indeed, lower rates and the pain they inflict on DB plans may provide additional impetus for sponsors to put a plan in place to ultimately shrink or terminate their plans. Nonetheless, in the short term lower rates raise the value of liabilities and dampen funded levels, potentially preventing the effectuation of a risk transfer transaction.

Earlier, we noted that risk transfer activity remained healthy in 2019 despite the low interest rate environment. However, these transactions often take anywhere from six to twelve months to complete, meaning a number of the transactions that closed in 2019 was actually considered and evaluated in 2018 when interest rates were higher.

Playing that forward, the low interest rate environment of 2019 may have a depressing impact on activity levels for 2020. As seen in Exhibit 5, the range of yields on 10-Year US Treasury bonds was notably lower in 2019 as compared to 2018. Some sponsors that may have been contemplating a pension risk transfer transaction in recent months, which would subsequently close in 2020, may have held off given the fall in interest rates during the course of 2019.

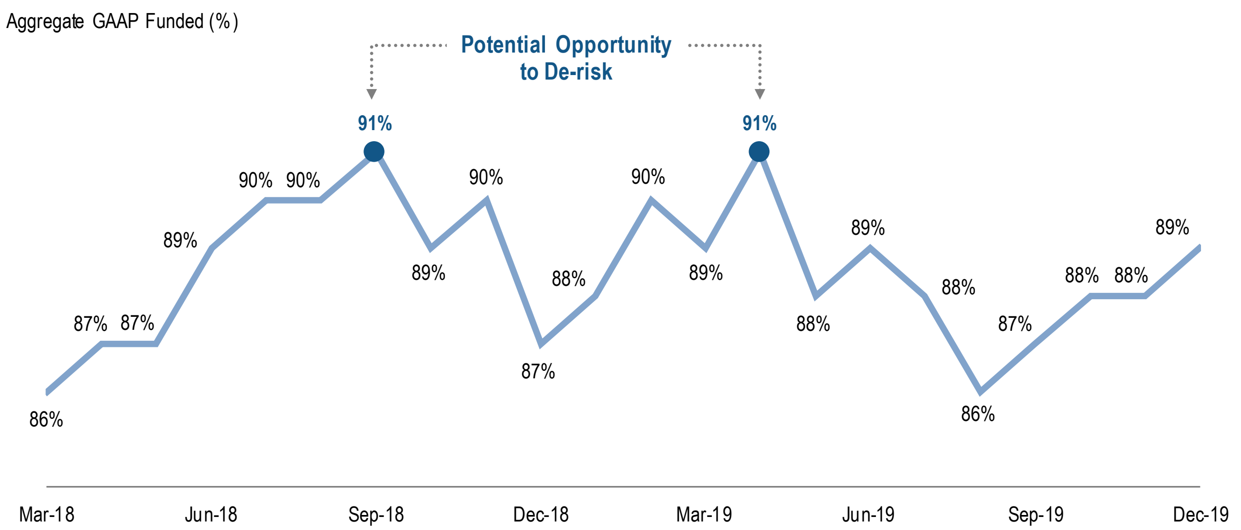
EXHIBIT 5: THE RANGE OF YIELDS ON 10-YEAR US TREASURY BONDS WAS NOTABLY LOWER IN 2019 VS 2018



Source: Goldman Sachs Asset Management, Thomson Reuters; values based on intra-day yields. As of December 31, 2019.

Putting the pieces in place – getting the right governance model to capitalize on opportunities. Finally, we note that although many plans may see little to no change in their year-over-year funded levels at the end of 2019, that potentially masks the intra-year funded status volatility that some may have experienced. Indeed, Exhibit 6 below details our estimate of the US corporate DB system aggregate monthly funded levels for the past several quarters. As seen in the chart, market movements have, at times, resulted in notable increases to funded status that may have provided opportunities to de-risk asset allocations.

EXHIBIT 6: MARKET CONDITIONS HAVE, AT TIMES, PROVIDED DE-RISKING OPPORTUNITIES



Source: Goldman Sachs Asset Management, company reports; analysis based upon the US plans (when specified) of S&P 500 companies. The economic and market forecasts presented herein have been generated by GSAM for informational purposes as of the date of this presentation. They are based on proprietary models and there can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation. Funded status estimates above, other than for Dec'18, are best estimates which may be subject to potentially substantial revisions over time**.** Past performance does not guarantee future results, which may vary. De-risking strategies should not be construed as providing any assurance or guarantee that as a result of applying the strategy an investor will reduce and/or eliminate risk, as there are many factors that may impact end results such as interest rates, credit risk and other market risks.

Unfortunately, some plans may not have been able to shift asset allocation and hedge ratios fast enough to preserve increases in funded status when they occurred, even if they hit a trigger on their glide path. Sponsors should ensure they have the right governance model and partners in place to act on what often are fleeting opportunities to take de-risking actions.

General Disclosures

Goldman Sachs does not provide legal, tax or accounting advice, unless explicitly agreed between you and Goldman Sachs (generally through certain services offered only to clients of Private Wealth Management). Any statement contained in this presentation concerning U.S. tax matters is not intended or written to be used and cannot be used for the purpose of avoiding penalties imposed on the relevant taxpayer. Notwithstanding anything in this document to the contrary, and except as required to enable compliance with applicable securities law, you may disclose to any person the US federal and state income tax treatment and tax structure of the transaction and all materials of any kind (including tax opinions and other tax analyses) that are provided to you relating to such tax treatment and tax structure, without Goldman Sachs imposing any limitation of any kind. Investors should be aware that a determination of the tax consequences to them should take into account their specific circumstances and that the tax law is subject to change in the future or retroactively and investors are strongly urged to consult with their own tax advisor regarding any potential strategy, investment or transaction.

Hedge funds and other private investment funds (collectively, "Alternative Investments") are subject to less regulation than other types of pooled investment vehicles such as mutual funds. Alternative Investments may impose significant fees, including incentive fees that are based upon a percentage of the realized and unrealized gains and an individual's net returns may differ significantly from actual returns. Such fees may offset all or a significant portion of such Alternative Investment's trading profits. Alternative Investments are not required to provide periodic pricing or valuation information. Investors may have limited rights with respect to their investments, including limited voting rights and participation in the management of such Alternative Investments.

This material is provided at your request for informational purposes only. It is not an offer or solicitation to buy or sell any securities.

The strategy may include the use of derivatives. Derivatives often involve a high degree of financial risk because a relatively small movement in the price of the underlying security or benchmark may result in a disproportionately large movement in the price of the derivative and are not suitable for all investors. No representation regarding the suitability of these instruments and strategies for a particular investor is made.

Alternative Investments often engage in leverage and other investment practices that are extremely speculative and involve a high degree of risk. Such practices may increase the volatility of performance and the risk of investment loss, **including the loss of the entire amount that is invested**. There may be conflicts of interest relating to the Alternative Investment and its service providers, including Goldman Sachs and its affiliates. Similarly, interests in an Alternative Investment are highly illiquid and generally are not transferable without the consent of the sponsor, and applicable securities and tax laws will limit transfers.

Conflicts of Interest

There may be conflicts of interest relating to the Alternative Investment and its service providers, including Goldman Sachs and its affiliates. These activities and interests include potential multiple advisory, transactional and other interests in securities and instruments that may be purchased or sold by the Alternative Investment. These are considerations of which investors should be aware and additional information relating to these conflicts is set forth in the offering materials for the Alternative Investment.

Index Benchmarks

Indices are unmanaged. The figures for the index reflect the reinvestment of all income or dividends, as applicable, but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indices.

The indices referenced herein have been selected because they are well known, easily recognized by investors, and reflect those indices that the Investment Manager believes, in part based on industry practice, provide a suitable benchmark against which to evaluate the investment or broader market described herein. The exclusion of "failed" or closed hedge funds may mean that each index overstates the performance of hedge funds generally.

References to indices, benchmarks or other measures of relative market performance over a specified period of time are provided for your information only and do not imply that the portfolio will achieve similar results. The index composition may not reflect the manner in which a portfolio is constructed. While an adviser seeks to design a portfolio which reflects appropriate risk and return features, portfolio characteristics may deviate from those of the benchmark.

Effect of fees on performance

The following table provides a simplified example of the effect of management and incentive fees on portfolio returns. For example, assume a portfolio has a steady investment return, gross of fees, of 0.5% per month and total management fees of 0.1042% per month of the market value of the portfolio on the last day of the month and incentive fees of 5% of net profits. Management fees and incentive fees are deducted from the market value of the portfolio on that day. There are no cash flows during the period. The table shows that, assuming that other factors such as investment return and fees remain constant, the difference increases due to the compounding effect over time. Of course, the magnitude of the difference between gross-of-fee and net-of-fee returns will depend on a variety of factors, and the example has been intentionally simplified.

Period	Gross Return	Net Return	Differential
1 year	6.17%	5.54%	0.63%
2 years	12.72%	11.38%	1.34%
10 years	81.94%	71.39%	10.55%