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The Looming Pension Crisis: Part V

Corporate Pension Plans

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The Looming Pension Crisis Series:

Part I: Why it matters and how to prepare

Part II: Government Pension Plans

Part III: U.S. Public Pension Plans

Part IV: U.S. Public Pension Plans COVID-19 Update

The Looming Pension Crisis Part V

Series summary:

In this series, we have previously detailed the critical role that unsustainable defined benefit pension plans will have on the global retirement crisis, as aging demographics force pension plans to transition into a payout phase. Having examined the relative risks of both sovereign government pension plans and the U.S. State Public Pension System, recently updated to reflect the role of the COVID-19 pandemic, our team has examined the significant shortfalls of U.S. corporate pension plans. While in recent decades the funding status of these plans have faced increased scrutiny and regulation, their inability to access stimulus through taxation or changes to monetary policy may leave corporations at risk from both shareholder and creditor perspectives. Amid the ongoing pandemic, the threats to countless corporate pension plans have been exacerbated by low interest rates and the significant risk of equity market corrections. Using proprietary models, our team has evaluated the unsustainable assumptions behind the misguided projected valuations of pension debt, and the impact on corporations' access to debt markets through changes in credit ratings. The impact of the looming retirement crisis indicates not only the deterioration of the corporate pension system, but also the potential to change the financial landscape for the corporations that house these pension plans.

Key takeaways

- While corporate discount rates have been reduced as a result of recent regulations, companies have continued to inflate the projected returns of existing plan assets, allowing the devaluation of future benefits for active employees.
- When converting plan discount rates assumptions to those modelled around the 10-year yield of AA-rated corporate bonds, plan liabilities exceeded company projections by 25%, combining for total liabilities of approximately US$3 trillion across approximately 700 publicly traded companies.
- With central banks around the globe promising to maintain interest rates close to zero for an extended period, yields across the fixed income universe have significantly declined, exacerbating the existing mis-valuation concerns.
- Corporate pension funds have increased their asset allocation into risk assets to find higher-yielding opportunities, thereby increasing vulnerability to equity market corrections.
- With many plans having transitioned into an aggressive payout phase, cracks have begun to show across insolvent plans, indicating a period of significant risk for underfunded pension plans.
- The investment implications for the Mackenzie Fixed Income Team are extensive, with our findings and adjustments considered in the analysis of each corporate credit opportunity, as well as representing a critical component of our ESG investment analysis.

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The American Dream, or A Pensioner's Nightmare?

The defined benefit pension system has always presented itself as a working-class path to the "American Dream": work hard for a reputable company, invest an invisible portion of your income into your future and, after a dedicated career, retire comfortably from a lifetime of service. Workers were incentivized for loyalty to their respective workplaces, and plans ensured that pensioners would be secure for their future. While traditional defined benefit pension plans have remained prominent within public sector roles, largely owing to pressure from unions, corporations have consistently transitioned workers into defined contribution pension systems. However, regulatory restrictions, an aging baby boomer population and consistently declining bond yields have highlighted the ugly truth once hidden behind the curtain. It has become increasingly clear that the design of the defined benefit pension system is critically flawed and on the verge of self-destruction.

Amid the pandemic, interest rates and fixed income yields have dramatically declined and central banks have committed to maintaining rates at effectively zero for the many years to come. This change has drastically widened the spread between pension plan valuation assumptions and the prominent market rates that represent a natural guidepost for said assumptions. The consequence of this widening spread is a dramatic elevation in the total risk associated with each plan's respective solvency, which may serve as the final nail in the pension plan coffin.

Pension funds have elevated their risk tolerance on the Capital Market Line, shown on page 5, increasing holdings in equity assets in an attempt to salvage returns in a low-yield market. In the event of a market correction, pension plans might soon find themselves trapped between defaulting on obligations and spending extraordinary funds to privately bail out their pension funds in order to support workers. With pension funds failing to amend growth projections and often failing to prematurely settle obligations, corporations are making efforts to preserve short-term returns and are throwing long-term caution to the wind. In this paper, we will highlight the shortcomings that have already begun to threaten the pension system, exploring how some neglectful management groups and overly aggressive valuation assumptions have transformed the promise of the American Dream into a "Pensioner's Worst Nightmare."

Introduction to topic

The first defined benefit pension plans were established by the U.S. government in the 1850s to reward workers for their service, paid from a plan that was funded through the contributions of employees and employers. These initial government plans provided employees with retirement security to maintain their accustomed living standards beyond what individuals were often capable of saving. Perhaps best of all, their benefits were effectively risk-free, guaranteed by the U.S. government. Shortly after, facing pressure from workers unions, private corporations entered the defined benefit pension space in 1875, with total plan assets skyrocketing until the 1950s and the founding of the largest private pension plan in U.S. history: General Motors. It soon became clear that many funds were poorly funded, and the Employee Retirement Income Security Act (ERISA) was established in 1974, mandating funding standards before pension plan funding was deemed mandatory for inclusion on financial statements, and thereby impacting corporate cash flows and profitability. Most recently, the Pension Protection Act of 2006 tied corporate plan discount rates to various corporate bond yields, most commonly using a collection of higher-yielding investment-grade bonds or the Moody's AA Corporate Bond Index as a sensible benchmark. This transition was responsible for improvement against the model used within the public pension system, creating a common procedure to theoretically improve the accuracy of benefit obligation projections.

In a market driven by COVID-19 concerns and an ongoing recession, federal stimulus and central bank bond-buying programs have buoyed the markets, dropping rates to historic lows. Central banks around the world have effectively reduced interest rates to zero (with US$18 trillion of negative-yielding debt outstanding) (Source: BNYDMVU, Bloomberg Barclays Aggregate Negative Yielding Debt, December 31, 2020), vowing to maintain these levels for years to come. Corporate bonds have largely followed suit, with yields dropping more than 100 bps to near-record lows.

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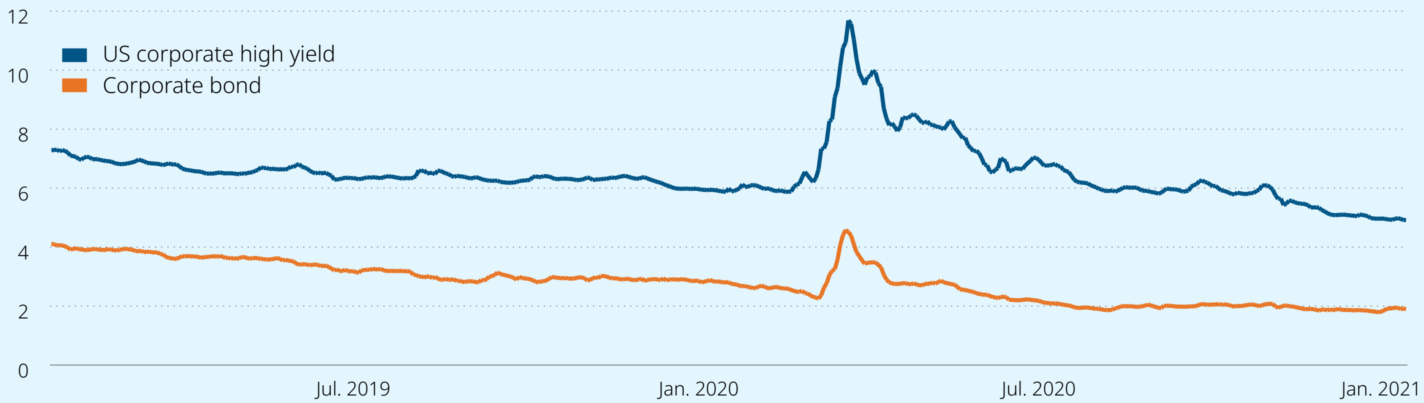
US Government and Corporate Bond Indices remain at or near historic lows as of Q4 2020, with central banks looking to maintain these levels for years to come



Source: LUACTRUU, Bloomberg Barclays US Corporate Bond Index, LF98TRUU Bloomberg Barclays US Corporate High Yield Bond Index

While this support has allowed pension funds to postpone the inevitable, with many funds posting record-breaking returns in the second quarter of 2020; most funds who have reported third-quarter performance have seen total returns remain disappointing for the year, with hardly any funds meeting their proposed rate of return. While the impacts of these valuation adjustments may not be immediately observed, these projections will lead to a significant rise in projected benefit obligations. With annual reports on the horizon for corporations, pension funds will be troubled with a question of accountability, as they must determine how to report pension funding in a near-zero yield market. Correcting their overly aggressive assumptions in line with reporting standards would dramatically increase projected benefits, thus dramatically reducing each plan's funding ratio. Paired with ever-increasing allocations to risky and illiquid assets in an attempt to capture yield in a zero-rate environment, the foundation of the corporate pension system appears to be at risk. This paper will examine the shortfalls of specific corporate pension funds and shine the spotlight on a multitude of contributing factors that may represent critical catalysts in the collapse of the entire pension system. It appears inevitable that corporate pension funds have developed a recipe for disaster, with COVID-19 representing a rotten cherry on top.

Model outline

With an established understanding of the public pension system's glaring unfunded liabilities and the potential to trigger a national economic crisis, the Mackenzie Global Pension Team elected to construct a model to assess and re-evaluate private pension fund liabilities. Using this tool, we were able to equalize the impact of plan liabilities through the implication of redeveloped industry standards with discount rates reduced to 2.5% and return projections at 4%. These values are closely tied to AA-rated corporate investment-grade bonds, allowing pension funds to maintain a moderate degree of risk when projecting returns, while ensuring that liabilities are being discounted at a rate that reflects the guaranteed nature of their payments while balancing the strength of their respective parent corporations. The discount rate standard was selected given that the 10-Year Moody's AA Corporate Bond Index was referenced previously by the U.S. Securities and Exchange Commission's Chief Accountant as a historic metric for corporate pension discount rates, with levels reflecting the guaranteed low-risk nature of the benefits.

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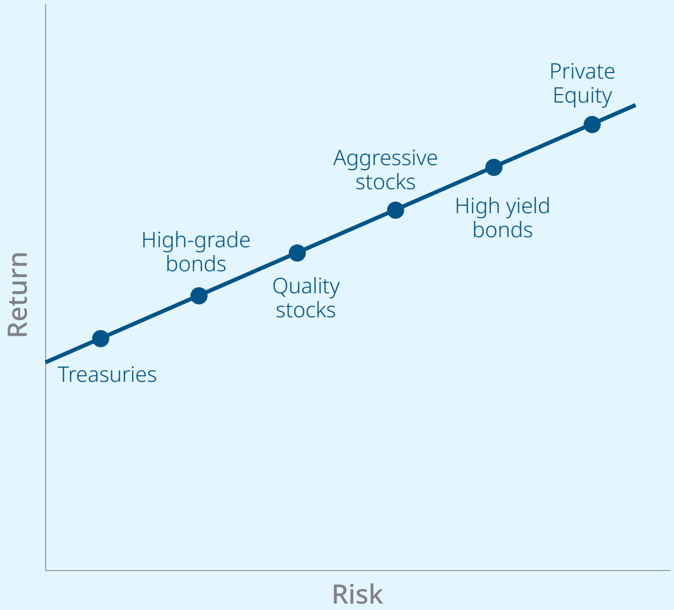
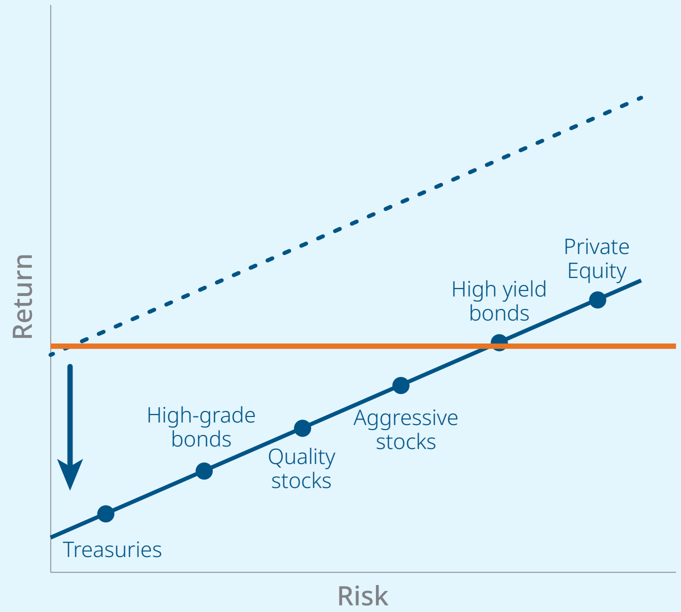
The downward shift of the Capital Markets Line reflects the implications of a low-rate market, driving pension plans to increase allocations to riskier assets to preserve returns.





Source: Oaktree Capital

Consider a blended asset model with asset allocation of 40% to fixed income securities, 40% to equity investments and the remaining 20% to alternative investments. As shown in the Capital Markets Line above, yield premiums are associated with investing in risk-heavy assets, rather than risk-free treasury bonds. In this assessment, we have assigned a 4% risk premium onto equity investments and a further 2% risk premium onto alternative investments from a baseline 2% fixed income yield. These premiums were deemed appropriate when validated against the historic returns from the S&P 500 and corporate AA bond yields for reference. Having observed a dramatic downturn in interest rates, pension funds have raised their relative position on the Capital Markets Line, as shown above. With assumed rates of return averaging above 6% across all measured plans, we observe a risk-heavy spread across total projections exceeding 4% from the yield on high-quality fixed income investments. These growing spreads indicate significant risk premiums associated with pension investments placing their "guaranteed benefits" at risk of a harsh reality check.

Model metrics

This data was assessed using six independent metrics to effectively evaluate the risks associated with over 700 individual U.S.-based plans. This model analyzed plan holdings of more than US$2 trillion, containing over 80% of U.S.-based private defined benefit pension assets. These six metrics, each composed of various quantitative sub-metrics, were weighted and independently assessed concerning their probability of collapse and each company's capability to bear the additional burden.

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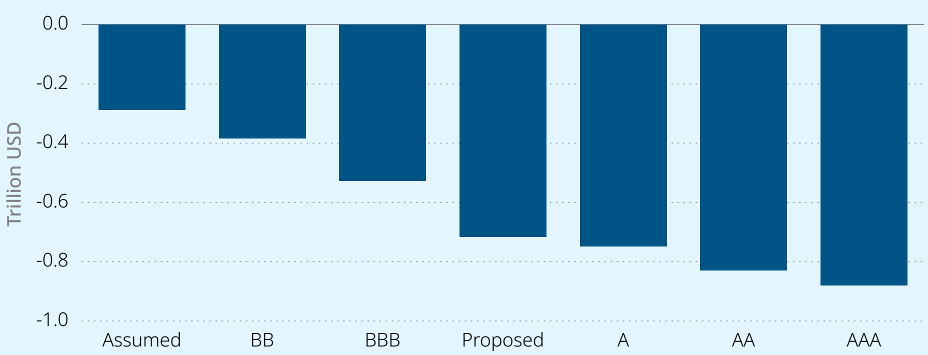
Metric	Sub-metrics	Description
Pension funding status	9	Plan liabilities and deficits weighted relative to plan assets, company profits and publicly displayed values, to view the relative magnitude and absolute significance of the pension crisis.
Fund accountability	8	Highlighting plan efforts to reduce risk by adjusting allocation away from equity-driven assets, increase contributions and reduce valuation assumptions for projected benefits.
Projected cash flow	8	Projecting the rate and significance of asset deterioration of pension funds on a plan level.
Credit analysis	7	The impact of re-valued liabilities and deficits on existing credit ratings, long-term debt obligations and resulting bond yields.
Market indicators	6	Examining the recent performance of companies and sectors to determine the feasibility of dealing with their corrected pension deficits.
Plan demographics	6	Examining the absolute and relative impacts of aging plan workers upon fund performance, contribution base and threats to unfunded pension plans.

Objective findings

Once our model reassessed each fund's respective pension obligations, the plans were thoroughly analyzed both on a collective and individual basis. Unlike our analysis of U.S. Public Pension Plans, in which plans have effective free reign with respect to valuation assumptions, federal regulations mandate the correlation between corporate pension discount rates and corporate bond yields. As such, the effects of the re-valuation process outlined in this paper will highlight the beginning of an inevitable shock to the system, commencing as early as the coming reporting cycle. Plans will be forced to reassess their obligations against the realistic benchmarks of a low-rate market, dramatically elevating their liabilities and net deficits in the process. This transition could result in shocking changes to long-term debt levels and net leverage for several corporations within the S&P 500, Dow Jones Industrial Average and Russell 2000, inspiring a market-wide focus on the importance of unfunded pension plans. Having developed a model with live data inputs, the Mackenzie team is better suited to highlight critically threatened pension funds that are at risk of significant balance sheet deterioration, versus adhering to the traditional reporting cycle that largely declares assumptions on an annualized basis.

Pension deficits vs valuation assumptions



Source: Mackenzie Investments

Pension deficits increase by over $500 billion USD when valuation metrics are adjusted to the recommended A- investment grade standard from high-yield B- equivalent assumptions.

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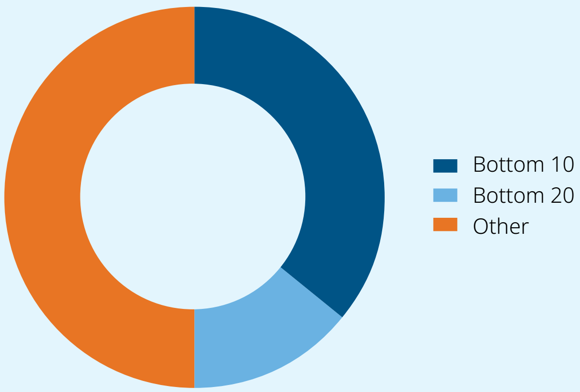
Disturbingly, after these assumptions are reduced, only 5% of the 700 funds surveyed performed as well or better than the modified metrics, indicating that a vast majority of funds have overinflated their valuation assumptions. Despite approximately one-third of examined funds claiming their plans to be greater than 90% funded, once liabilities are re-assessed, we observe a drastic reduction from 241 funds to 63. Beyond this standard, less than 5% of all assessed funds were classified as fully funded, with a shocking 40% of funds less than two-thirds funded. Across all funds, we observe a combined deficit of just under US$1 trillion, with the largest funds, such as UPS, General Electric and Ford, combining for over US$120 billion alone.

The concentrated impact of the retirement crisis



Source: Mackenzie Investments

While the Retirement and Pension Crises will threaten the sustainability of all funds, our results indicate a bottom-heavy model, in which 20 plans carry half of the national corporate pension debt.

By the end of 2020, key interest rates and fixed income yields are sitting at near-historic lows. The U.S. government bond index (ICE BofA All Maturity US Government Index) stands at a yield to maturity (YTM) of just under 0.5%, while the corporate bond index (ICE BofA US Corporate Index) has a YTM of approximately 2%. The difference between the pension discount and market-derived yields highlights the increased risk profile of pension plans. The average discount rate assumed by corporate pension plans was previously equivalent to a BBB-rated bond; however, in light of declining yields, these assumptions now reflect a B/CCC high-yield corporate bond. The risk associated with this significant rating change is compounded through the presence of a gradual increase in equity-driven investment by large pension funds. This trend has dramatically reduced their security and sustainability, highlighting the questionable investment strategies used by large pension funds, poorly correlated with the guaranteed nature of retirement benefits. Since 2015, pension funds have increased their high-risk investments by 15%, recently rising to an all-time high with average levels above 45% nationally. This risk continues to elevate the risk-profile of pension funds, particularly when assets are directly reinvested into equity holdings of their respective corporations, creating a potential “doom loop” with catastrophic consequences.

In a rare victory for many private pension funds, corporations have largely had the foresight to recognize the risks associated with defined benefit pension plans and have frozen benefit contributions for new employees. Closed plans have benefitted through their direct understanding of plan benefit obligations and effective payment schedules, though the reduced flexibility offers little salvation to plans with poor funding in the absence of active members’ contributions. Given that countless corporations have terminated defined benefit plans in favour of defined contribution systems, it is apparent that they have long known what is only becoming apparent to pensioners now: the pension system is broken, leaving pensioners in an uncomfortable and unforeseen position.

Findings by sub-indicator

Pension funding status

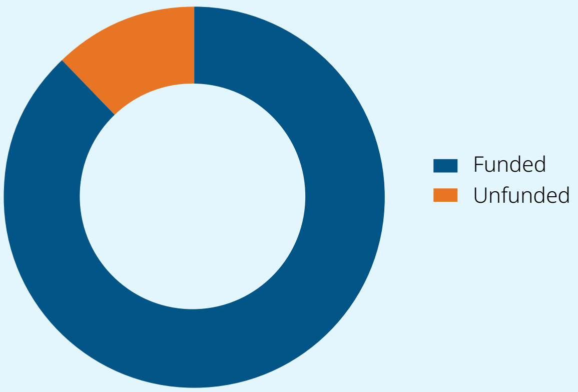
Notable leaders: Visa, JP Morgan, Dominion Energy, HP
Notable laggards: FedEx, Disney, General Electric, Ford, UPS

In our pension funding analysis, we examined the re-assessed pension liabilities and deficits against assets, operating income and net profits to provide our model with a complete analysis of each plan's funding status relative to company operations and discretionary cash flows. Disturbingly, we found that when valuation assumptions were standardized, only 5% of pensions were valued using sustainable metrics. Notable companies in this category include IBM and JP Morgan, both of which performed well under increased scrutiny of their valuation assumptions and with consideration to interest rate volatility.

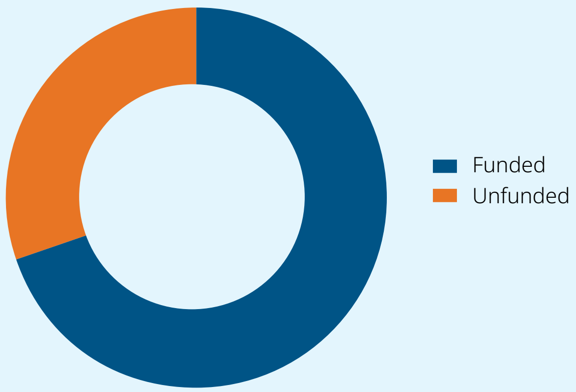
When assessing the total set of funds with our re-valuation process, average benefit liabilities increased by 27% to just under US$3 trillion with proportional deficits rising to three times their previous levels. With some plans presenting poor initial conditions, we see the average funding ratio of corporate pension plans decreased from 86% to below 70%, with 20% of plans increasing proportional liabilities by more than 50%. On a relative basis, significantly poor performers include UPS, Occidental Petroleum and Disney, with liabilities increasing 70%, 86% and 50%, respectively.

Pension plans claim to be close to 90% funded, though when adapted to sustainable standards for a low-rate environment, the projected deficits are nearly tripled.

Publicized funding ratios



Re-assessed funding ratios



Source: Mackenzie Investments

When weighed against the company's operating income and net income, primary consideration was given to solvent plans over profitable companies. Assessed on a distribution, while this factor occasionally favoured larger corporations like Visa and JP Morgan, we saw a very high correlation between plan obligations and company revenues. In many cases, giant-cap corporations like Pfizer and Johnson & Johnson perform comparably with countless mid- to large-cap companies like AGCO, Harley Davidson and American Airlines in the central quintile. However, the size of these plans proved exceptionally devastating for those who failed to generate profits, such as General Electric, Schlumberger and Marathon Oil. These plans, despite relatively strong funding ratios, face threats from corporations operating at a loss given their inability to supply additional funding in the event of added stress. This factor carried significant weight within the output of our final model, given its direct correlation with plan solvency and relative risk to the corporation.

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Fund accountability

Notable leaders: Disney, PepsiCo, Wells Fargo, Energizer
Notable laggards: General Motors, Raytheon, Intel, Coca-Cola, Schlumberger

In an attempt to reach their lofty return expectations, pension plans have gradually increased their risk-profile, while simultaneously lowering their liquidity position by adding less liquidity and more longer-term investments. While increasing the long-term return potential for the plan, these actions simultaneously increase the risk of pain through larger drawdowns. On average, plans have increased their investment in risk-heavy assets by 3% annually, prior to the pandemic. While most plans have not published holdings since the pandemic outbreak and subsequent market meltdown, if initial public fund data is consistent, plans may have increased their respective equity risk at an even faster rate, upwards of 5% on the year. With approximately two-thirds of plans having allocated more than half of their assets into equity-based investments, this number appears primed to continue to rise in coming years.

Public and private funds alike have relentlessly pursued this aggressive growth model, with recent reports from several of the largest global funds stating that even despite a miraculous recovery, driven by federal reserve stimulus, funds have collectively underperformed with very few managing to break even on an annual basis. This threat compounds exponentially with the understanding that as the second wave of Baby Boomers continues to transition into retirement, funds will inevitably see significant increases to their benefit payments. With funds projecting an average annual return of 7%, even a single neutral year, let alone a negative year, can lead to significant long-term deterioration of fund assets.

One of the most disturbing elements of this study includes the analysis of plans with significant equity and debt holdings in their respective corporations. Several plans, including General Motors and Honeywell, have billions of dollars in plan assets directly invested into their respective corporate stock, risking the devaluation of corporate equity (and with it, plan assets) in the eventual occurrence of fund liquidation to help fund growing benefit payments. While pension liabilities may represent long-term debt obligations and, with it, a significant credit risk, directly holding self-inflated assets to project sustainability is fiscally irresponsible given the traditionally strong correlation between economic performance and asset prices. Fortunately, several plans have implemented strategies to offer lump-sum settlements to reduce the risk associated with projected investment return requirements to ensure plan solvency, with approximately a quarter of the examined plans settling at least 5% of their total obligations since 2015.

Unfortunately, plans have also failed to deliver on their projected annual contributions, with approximately half of the evaluated plans falling short in 2019. Examining contributions on a medium-term timeline, approximately 30% of plans failed to deliver total contributions at promised levels over the past five years (2015-2020), falling short amid a critical demographic turning point for pension plans. This is particularly worrisome as plan benefit liabilities continue to rise, with average benefit growth projected at approximately 3%, in line with the American Old-Age Dependency Ratio, which is currently expanding at 2% annually. Corporate contributions are decreasing by 5% on average, creating a 7% inequality spread for cash flow projections, before considering any admittedly limited inflation factors. With two-thirds of plans failing to maintain contribution levels, plans with growing contributions, such as PepsiCo, United Airlines and Occidental Petroleum, are very much in short supply.

Projected cash flow

Notable leaders: Disney, Delta Airlines, Energizer
Notable laggards: AT&T, General Electric, HP

With many plans rapidly entering an extended payout phase, we have two fundamental approaches to evaluate both short- and long-term solvency: the corporation’s rate of payout growth and the duration of time before plans transition to a cash-flow negative state. We observe a consistent growth in benefit payments paired with a decline in employee contributions to create significant pressure on AT&T, HP and General Electric. Conversely, Delta and United Airlines have ranked consistently positive given sustainable short-term outlooks, with minimal pension losses projected across the evaluated timeline. While American Airlines maintains similarly conservative payout projections, it has unfortunately not seen the same supplementary lump-sum investments as its peers, leading to increased deterioration.

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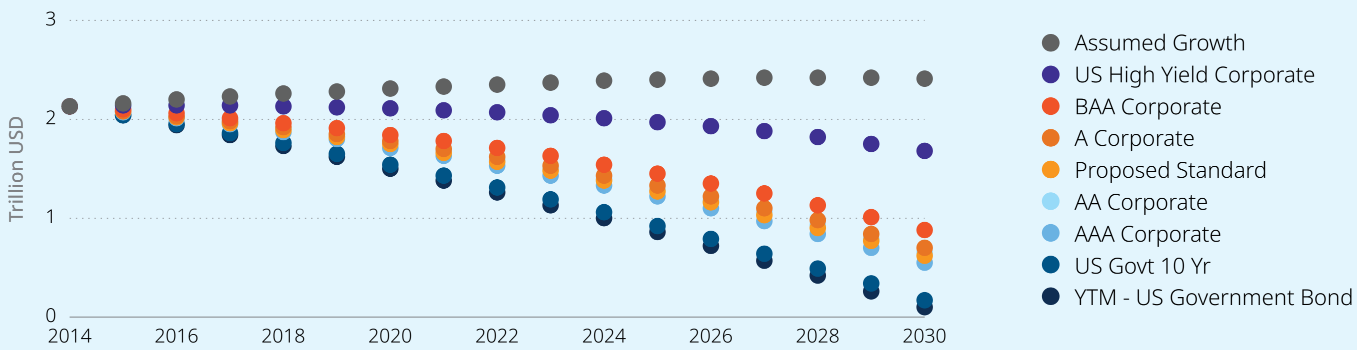
US Corporate Pension Assets vs Time



Source: Mackenzie Investments

As pensions across the board consistently see benefit payments rise with active members entering retirement, examining the recent and projected future performance of fund assets is critical when assessing long-term concerns. As shown in the graph above, funds are inadequately prepared to handle the rising surge in retirees, resulting in pension funds transitioning to a nationwide cash-flow negative state, regardless of assumptions. When faced with the new reality, approximately 10% of plans are projected to face default within the next decade. Historically dominant plans, such as General Motors, Exxon Mobile and Boeing, project rapid declines in plan assets, continuing a nationwide trend of consistently declining assets since 2014, before supplementary investments are considered. While expiring plans may require the supplementary allocation of corporate cash flows in order to completely clear their balance sheets, plans with active members lack this luxury given their significant balances and long duration payout periods. For these plans, low fixed income yields appear to be the last straw, effectively eliminating the potential for low-risk investments to carry the funds to their expected high returns.

Corporate pensions are projected to face annual deficits of $150 billion, crippling over 50% of pension assets by 2030.

Credit analysis

Notable leaders: IBM, Disney, Johnson & Johnson, Pfizer, Proctor & Gamble, General Mills
Notable laggards: Delta Airlines, Six Flags, Macy's, Ford, American Airlines, Century Link, Marathon Oil

This rudimentary credit analysis should only be used in the context of this quantitative assessment – it is by no means a substitute to the rigorous credit analysis we perform on each opportunity that we intend to invest in. When evaluating the relative recovery potential of pension funds, it is imperative that we do so prior to the hypothetical provision of bailout funds by the U.S. government. As such, a company's access to liquidity through bond and loan issuance is one of the most critical factors in measuring a corporation's potential for pension fund recovery. Corporations operating under significant leverage have drastically reduced ability to designate discretionary funding towards underfunded pensions.

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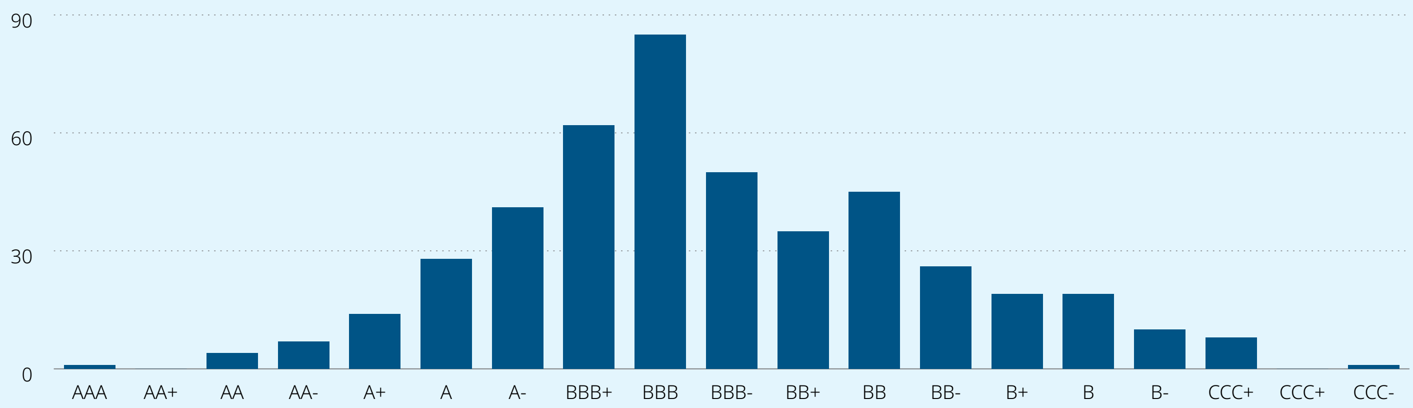
Pension holding companies vs credit rating



Source: Mackenzie Investments

The existing debt levels of each corporation were examined and the impact of pension liabilities and deficits relative to existing fundamentals were thoroughly analyzed. When examining the aggregate performance of our 700 pension holding corporations, we see total pension adjusted debt-to-EBITDA leverage ratio increase from 4.2 to 4.6, with unadjusted debt-to-EBITDA leverage settles at 4.0, implying an unforeseen 10-15% risk premium on pension holding corporations. However, companies including UPS, Lockheed Martin, and Northrop Gruman are among the worst offenders, with respective leverage increasing to 6.7, 3.5 and 6.6 from their presently stated (pension-adjusted) values of 3.4, 2.7 and 3.9. This increase in leverage drastically transforms each company's outlook, particularly within fixed income. With present credit ratings of A-, A- and BBB, respectively, these companies represent the large number of low-investment-grade companies facing significant mark-to-market risk associated with the transition from an investment-grade rating to a high-yield designation. These companies face a risk of entering a dangerous cycle in which unfunded liabilities cause debt levels and resulting leverage to rise, which would decrease credit ratings and raise the relative cost of managing existing and additional debt levels. In addition, the model examined the implied credit spreads and credit ratings of the companies analyzed, with the understanding that decreased ratings limit the companies' ability to access affordable funding sources through new debt issuances. The airline industry and energy sector were hit exceptionally hard amid the pandemic and 2020 oil market crash, with American Airlines, Delta Airlines and United Airlines representing some of the most affected companies in our analysis.

Pension holding companies are largely concentrated within the low-investment-grade space, with significant mark-to-market risk associated with compounding debt and credit downgrades.

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Market indicators

Notable leaders: Visa, Johnson & Johnson, Capital One, Berkshire Hathaway
Notable laggards: Citigroup, Boeing, Marathon Oil, Schlumberger, Phillips 66

In the pandemic-driven market, equities have been volatile across the board, with a sudden crash in March playing into one of the most dramatic recoveries in recent history. In this metric, we analyzed the equity performance and relative valuations of corporations by examining changing investor sentiment, market share and relative valuation. While equity market performance may not draw a direct correlation with pension fund concerns, it remains relevant to assess the sale of any treasury stock as a potential recovery tool. With recent history heralding in a consistent period of share buyback programs, what was once a means of securing control of corporations and increasing value to investors may have transitioned into an emergency pension war-chest. With the majority of pension holding companies facing negative returns in 2020, corporations experiencing strong growth, such as FedEx, PG&E and pandemic-era favourites Eastman Kodak and Abbott Laboratories, are increasingly difficult to find. As above, the energy sector and airline industry have delivered notably poor year-to-date performances, with the financials sector only recently recovering in Q4 from significant loan losses in the earlier quarters, and the impact of a low-growth economy, which may lead to the deterioration of countless vulnerable corporations in favour of new, more sustainable frontrunners.

Perhaps most intuitively as a means of lessening the impact of the looming pension crisis, the ability for companies to direct profits into growing plan benefits is critical as the first line of defence. Ford leads a class of large-scale companies that include Schlumberger and Marathon Oil that have continually seen profits decline, with some transitioning into routine deficits. Fortunately, several established companies, including Pfizer, Caterpillar and Visa, have maintained profitability with sustainable growth over time, allowing additional funds for potential pension investment. Relative valuations measuring growth and earnings multiples are critical to assess performance over time. Companies like Berkshire Hathaway, Disney and Visa possess strong earnings multiples that have gradually increased, indicative of strong growth prospects and sustainability. On the other hand, declining equity values and decreased market share have resulted in AT&T, Xerox and Intel observing contractions in their respective multiples, signaling a potential value trap for investors and pensioners alike.

Demographics

Notable leaders: Visa, Target, Verizon, AT&T, Pfizer, JP Morgan
Notable laggards: Ford, Atlantic Power, Energizer, UPS, Intel, FedEx

The demographic breakdown of a pension plan's membership is a critical factor that impacts the valuation, cash flows and relative timelines of a plan's operations. Therefore, our model was developed to derive the current and projected Old Age Dependency Ratios of each plan, highlighting the benefit payment schedule and proportional impact of each payment on the fund's existing benefit obligations. Measuring the rate of beneficiary growth is as critical as examining each plan's initial funding levels to accurately understand the recent performance and projected future cash flows of each respective pension fund. UPS, Motorola and Spirit AeroSystems each present consistent and significant increases in benefit payments, indicating a rapid transition of pensioners into retirement, thereby directly threatening plan solvency in the medium-term future. Additionally, several plans, including Johnson & Johnson, UPS and Post, maintain large active memberships indicated through consistent employee contributions, indicating a long-intended duration of the plan's execution, increasing the risk and potential for default over time. Having determined the demographics of each plan's members, it was essential to determine the relative strength of the individual pension funds against their respective demographics and obligations to their pensioners. HP, Dominion Energy and Capital One Financial have seen assets decline rapidly when compared to existing benefits, though the latter is due to Capital One's plan entering its twilight years, with the solvent closure of the plan projected within the coming decade. Fortunately, as discussed earlier, the recent recovery from the COVID-19 market crash, paired with a rise in lump-sum settlements, has allowed funds to gain a short reprieve, with fund assets outperforming expectations. AT&T, Verizon and Pfizer have effectively maintained their respective funding ratios, with fund assets holding well under the pressure of increased benefits. These funds have observed a relatively stable asset base, gradually reducing their projected liabilities to increase net solvency and limit risk duration.

Baby Boomers are retiring at historic rates, and pension plans are not equipped for the prolonged negative cash flows.

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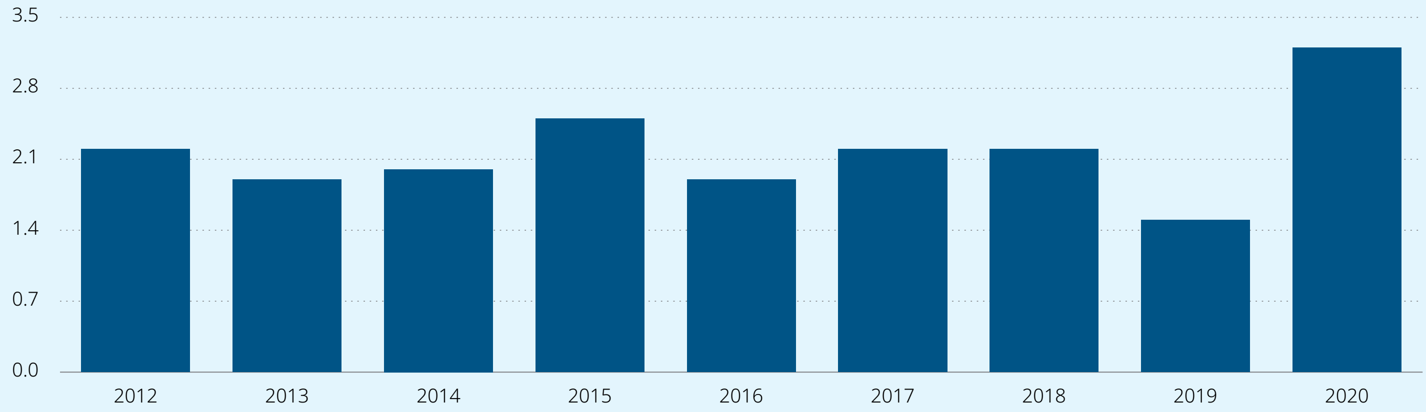
New baby boomer retirees by year



Source: Mackenzie Investments

Results

While our model did produce an objective ranking of private pension funds, in this paper we primarily elected to highlight the most extreme performance across all relative metrics. Some of the most notable sustainable funds are highlighted in the upper portion of the graphic to the right, while those most at risk of default are displayed in the lower portion. While the relative magnitude of plan revaluation may be less significant than their public counterparts, overall valuation and fund deterioration projections aligned closely with our expectations. With average plan discount and growth rates presently sitting at 4.0% and 7.1%, respectively, expected rates of return appear extraordinarily overestimated and comparable to the aggressive projections of public funds. We were surprised to see that prevalent companies maintained shocking return expectations. While a 4% discount rate was appropriate in the historically higher-rate environment, it is unsuitable for the modern low-yield market environment. Highly ranked funds, including IBM, Johnson & Johnson and PepsiCo, have been buoyed by conservative growth rates, sustainable investment strategies and growing contributions, respectively. These companies possess aggregate credit ratings of A, AAA and A+, respectively, and we believe that these ratings are unlikely to be significantly impacted by any changes in projected pension obligations.

Some of the most notable pension funds have become known for insufficient funding and inadequate contributions, despite high corporate valuations following a historic equity market recovery. United Parcel Service, General Electric and Northrop Gruman publicly present respective funding ratios of 85%, 76% and 83%, though when reassessed in the current low-rate environment, the funds possess lacklustre 53%, 63%, and 59% funding ratios, respectively. Examining the top-10 funds by their absolute deficit, we observed an astonishing aggregate funding ratio of 65% and a total deficit of close to US$300 billion, occupying over 30% of the total measured pension deficit. We observe a significantly bottom-heavy model, in which a proportionately small number of large-cap corporations possess a large percentage of both aggregate and relative debt. When examining the 30 companies (of 700 surveyed funds) with solvent pension plans, total plan surplus is limited to just under US$7 billion, with a 10% aggregate surplus, largely supported by JP Morgan's conservative valuation assumptions and NextEra Energy's strong initial plan funding status.

Notable Winners

- Visa
- JP Morgan
- Bank of America
- Texas Instruments
- Pepsico
- IBM
- Berkshire Hathaway
- Wells Fargo
- Honeywell Intl.

Notable Losers

- United Parcel Service
- General Electric
- Ford
- General Motors
- Boeing
- Lockheed Martin
- Northrop Gruman
- Raytheon
- Occidental Petroleum

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Our team recognizes that some smaller companies are negatively impacted by their relative weightings against profits, revenues and market cap, despite possessing smaller and more manageable absolute deficits. However, these companies often face compounding difficulties through reduced access to public debt, limited market recognition and generally worse credit ratings. These mid-cap-sized corporations are often less critical and would be deemed somewhat less system relevant when compared with their giant-cap competitors within the U.S. economy, likely limiting access to potential bailout funds. With these factors considered, we primarily focused on analyzing the performance of large-scale corporations with established defined benefit pension funds, with notable threatened funds including General Electric, Ford and the United Parcel Service undergoing rapidly growing expenses and utilizing exceptionally high asset growth assumptions. However, it is critical to note that approximately 5% of examined corporations saw their relative positions improve, given their exceptionally conservative valuation assumptions and high original funding status. Notable leaders include IBM and JP Morgan, while other accurately valued plans are relatively small, with individual plan assets valued at under US$5 billion. These corporations, while often small, are noteworthy given their accountability and fiscal responsibility despite the critical flaws embedded within the system.

Political implications

When considering the political implications stemming from the Global Retirement Crisis, the potential collapse of corporate pension funds appears less relevant than their publicly funded counterparts. While this may be considered partially correct from a partisan perspective, central banks will inevitably intervene to provide support to a weakened market. It seems evident that there is a consensus within the U.S. Federal Reserve (Fed) to maintain low rates amidst and after the pandemic. In fact, the framework review that led to the adoption of flexible inflation-targeting further pushes out any restrictive policy action by the Fed for years to come. This environment, while potentially beneficial for the reignition and stabilization of the U.S. economy, has left investors wondering what the unintended consequences of such dramatic stimulus may be, and how this may shape the long-term future of the markets. Parts of that discussion are the declining confidence in the strength of the U.S. dollar, increased consideration towards alternative investments and concerns whether fixed income assets would continue to counterbalance equity market risk in a risk-off scenario. This transition, paired with the expansion of global central bank balance sheets, has dramatically reduced yields on investment-grade corporate and sovereign bonds, forcing pension funds and institutional investors to seek returns in riskier markets and asset classes to preserve solvency. Despite regulations and policy implemented to restrict the assumptions allowed within the private pension system, these efforts may have not considered the implications of reduced rates and threats to the global economy. With rates sitting near zero for years to come, it is increasingly difficult for funds to justify projecting "guaranteed" returns that regularly exceed 7%.

We believe it would be beneficial to increase the visibility of plan funding ratios through an increased presence in quarterly reports and relative assessment against peers of the same investment sector and credit rating.

The divisiveness of the U.S. political landscape poses another threat to struggling corporations that requires support. The first COVID-19 relief package by the federal government overcame that divisiveness and delivered a fast, powerful confidence boost. However, the second package notably stalled and faced bipartisan criticism, for its reduced value and significant delays. More localized problems (i.e., individual companies needing assistance) that stem from a failure of management as opposed to an external event or natural disaster could complicate the need for the involved parties to agree or compromise. With the recent election of Democratic President Joe Biden, we have seen a major overhaul in the US Government, with the new Treasury Secretary Janet Yellen serving as an equally dovish counterpart to Fed Chair Jerome Powell. Paired with continued control of the House, and a 50-50 Senate, (minimally controlled via Vice-President Kamala Harris in a tiebreaker scenario as above), the Democrats have achieved their "Blue Wave", by the slimmest of margins. These margins will optimally promote bipartisan collaboration, while alternatively testing senators' adherence to party lines, with a select group of Senators including Joe Manchin (D-WV), and Susan Collins (R-ME), having occasionally crossed the aisle in recent years. However, party line loyalties largely remain at all time highs, and when paired with a standing filibuster, which has stifled larger majorities, there is certainly a future in which the recent political gridlock may extend further. It is uncertain which direction a Biden government will take, but the new administration has been notably critical on public and private pensions alike, looking to tighten standards and ensure sustainable funding practices. While a broad bailout is possible, we believe that initial action may be taken from a regulatory perspective, increasing mandatory funding ratios and contributions. The impending wave of reporting will likely force pension funds to decrease valuation assumptions, immediately worsening public perception. If nothing else, each party's statements to date indicate awareness and acknowledgement, but undoubtedly any action must be led and supported in a bipartisan manner, amid historic debt levels, political tensions and the pandemic.

Additionally, unlike the public pension funds, which can temporarily remain in their bubble of unrealistic assumptions, reporting standards will likely result in a change of perspective, highlighted through the corporate credit market. We believe that an optimal solution to contain the magnitude of these crises would be to further restrict each fund's ability to manipulate their valuation assumptions and apply an undisputed fixed income index to model discount rates. Similarly, rate-of-return assumptions would be reduced to sustainable levels for a blended asset model, reflecting some degree of conservatism within the pension valuation method. This model should further standardize a live-rebalancing standard to ensure that fund valuation assumptions reflect present-day markets. This metric would remove any potential for mis-valuation through holding all funds to a uniform standard, providing investors with a consistent metric to evaluate pension fund deficits. While our authors generally eschew most restrictions and regulations, a fair level of prudency needs would help ensure that plans are accountable to their pensioners. With ever-increasing allocations to fragile equity-type investments, the "guaranteed" nature of the pension promise is at risk. Volatility-based restrictions similarly have benefits and drawbacks. On the one hand, volatility should be minimized in order to limit the drawdowns the fund can experience; on the other hand, anyone who remembers what the Value-at-Risk models pointed out just before the 2008 financial crisis will see this inherent flaw.

We believe it would be beneficial to increase the visibility of plan funding ratios through an increased presence in quarterly reports and relative assessment against peers of the same investment sector and credit rating. For corporations with continuously valued shareholder-friendly actions, share buybacks and dividends, as well as equity growth rather than corporate fundamentals and pension assets, this new development will shine a light on their various shortcomings. As the global retirement crisis and the collapse of the global pension system rapidly accelerate, the government must have the capacity and willingness to create policy and allocate resources to preserve the interests of the economy, the market, pensioners and the American population. While pension funds and retirees may not carry the same weight when considering news headlines and market perceptions, a federal implementation of these adjustments will likely have the power to shake up the corporate pension system.

In any event, possible bailouts, while damaging to the medium-term U.S. outlook, will protect Main Street's working-class pensioners and their spending power while preserving the interests of Wall Street. We believe a vast number of corporations have incorrectly represented their risks to creditors by applying overly aggressive growth assumptions, and thereby run the risk of insufficiently planning for their upcoming benefit payment obligations. When we observe that plans have already begun to show cracks in the volatile equity market, the U.S. may experience compounding problems if the equity market declines substantially. The maximum drawdown the equity market can experience before corporate (and public) pension funds run into severe trouble grows smaller with each passing year, assuming no critical changes in the irrational assumptions that have long plagued the pension system.

Investment implications

The investment implications for the Mackenzie Fixed Income Team are extensive, with our findings and adjustments considered in the analysis of each corporate credit opportunity. When constructing portfolios, our team will consider the revalued pension liabilities of each corporation and any developments over time, favouring the belief that companies who improve their position and settle unfunded deficits will inevitably be rewarded in the marketplace. Within our analysis, we will continually examine the impact that increased deficits and negative cash flow will have upon the credit spreads and ratings, as well as the outlook of corporations and market sectors. Significant deterioration in pension funding will insinuate an increase in leverage, the widening of credit spreads and deterioration of a company's credit rating. This result will significantly damage market performance and decrease the relative value of existing credit investments. With this increased understanding of pension liabilities and deficits, we expect these components to further enhance our credit evaluation process.

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We believe that poorly ranked pension funds will present a significant unseen threat to market solvency and risk the deterioration of corporate credit value, as debt continues to compound amid established pension obligations. Additionally, this research should be viewed in context, considering each corporation's existing fundamentals, market performance and existing credit risk to properly understand the likelihood of plan default and its implications on both equity and fixed income markets. In all regards, the impact of our corporate pension assessment model will also be used as a macroeconomic assessment to indicate the relative presence of a wildly undervalued and unseen threat. The findings from our corporate pension evaluation model and its integration in our respective valuation models will be one of many sources of data carefully considered by our team in portfolio construction and maintenance.

The findings from our various pension models reflect one of many elements within our corporate credit and ESG modelling and assessment process, highlighting the accountability of each corporation, state and sovereign government through their governance processes. In addition to the previously stated risk to corporate fundamentals, we are confident the markets will reward plans that have continuously strived to improve the accountability and transparency of their corporate processes. When evaluating these funds in our investment process, the Mackenzie team considers the ranking of each fund relative to our pension fund reference library. Once our system has analyzed the potential impact of an issuer's pension liabilities, our team determines an appropriate premium to be associated with the selected investment. This automated process represents one of the many technical applications of Mackenzie's research divisions, highlighting the analysis of largely unseen factors through the lenses of ESG and fiscal accountability. These strategies and research models are critical for the Mackenzie Fixed Income Team's holistic security assessment process, allowing for increased understanding of all facets of a corporation or government's operations.

The Mackenzie Fixed Income Team has worked to continuously strengthen our quantitative abilities to process and analyze relevant data, providing our team with the ability to objectively rank the strength of various credit opportunities, currencies or sovereign states. We believe the development of vertically integrated quantitative models equips our team with a sizeable edge in managing fixed income assets in an ever-changing geopolitical landscape where countries and companies become increasingly interconnected. Examples of models quantifying macroeconomic themes include our model analyzing the re-evaluation of corporate pension systems, our model investigating the fallacies of the U.S. Public Pension Systems, as well as our Global Retirement Preparedness model. These models highlight our Global Fixed Income Team's unique investment process, utilizing quantifiable data to analyze macroeconomic themes and uncover investment opportunities in corporate and sovereign markets.

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