



# The Looming Pension Crisis: Why it Matters and How to Prepare

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Author:



**Konstantin Boehmer, MBA**  
Vice President,  
Portfolio Manager

Retirement planning requires plenty of thought and substantive analysis. Many pieces of that process include vague estimates about potential return, potential income growth, potential life span, and potential spending habits and obligations. Even for financially literate people, it is challenging to deal with that many unknowns and non-linear relationships. This is why many people put their retirement faith and fortune into the hands of third parties, whether they are corporations, governments or other individuals. In some cases that trust is justified, in others less so.

Thankfully, to date, major pension fund collapses have been rare; however, the likelihood for disasters is increasing and is very real. The experience of plans such as the Teamsters, the City of Detroit and Puerto Rico highlight the risk building globally for governments, companies, retirees and investors.

To start this pension series, we will consider the underlying reasons why we see a major risk for an upcoming pension crisis and its root causes. We will also share some initial thoughts on how this risk may affect us as investors and future retirees. We will generalize the pension fund complex and highlight several design flaws apparent in the system. Subsequent articles will drill deeper into each segment of the pension market (governments, corporations and individuals) and dissect some of those misconceptions further.

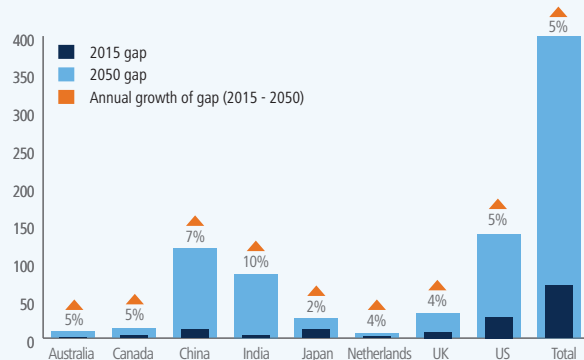
## Looming Risk of Funding Shortfall

Today's pension systems in most developed countries are largely a 20th century phenomena. Widows' funds and ad hoc promises to veterans were among the earliest forms of pension arrangements, but since the Second World War, there has been a significant expansion of federal government retirement benefits and employer-sponsored pension plans (public and private).

Defined benefit (DB) plans were the most common type of retirement plan through the 1980s, and although there has been some shifting to defined contribution (DC) plans since that time, the defined benefit obligations accumulated and coming due are significant. There are basically two ways to manage defined benefit pension liabilities. One is a pre-funded system, where money is set aside and invested to pay future obligations; the other is a pay-as-you-go (PAYG) system, where the plan uses current contributions to pay current obligations. In general, state and local governments and corporations must operate funded plans, while federal governments can resort to unfunded PAYG schemes.

Our initial estimates suggest that the current funding shortfall could easily exceed US\$100 trillion amongst the different federal governments, local governments, corporations and individuals globally. As a comparison, global GDP is approximately US\$75 trillion while total debt outstanding is US\$160 trillion. The chart below by the WEF depicts the size of the retirement savings gap of just eight countries: a US\$70 trillion problem that will morph into half a quadrillion dollars by mid-century.

Aging populations will push pension shortfalls significantly higher

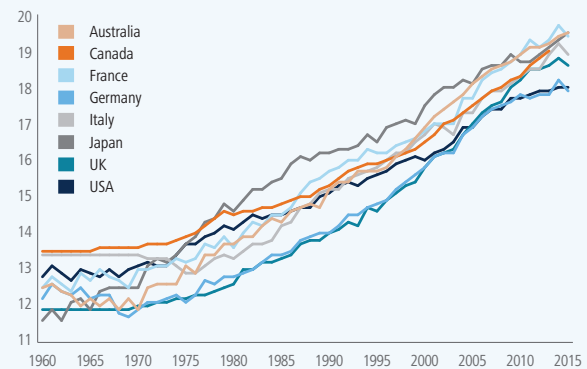


Source: World Economic Forum

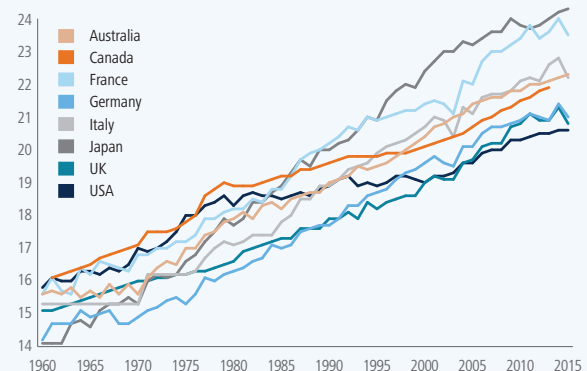
## Design flaw #1: Inflexible structure to deal with demographic change

Pension funds were developed decades ago under vastly different assumptions regarding life expectancy and working age population growth. While in the 1960s the average pension age was around 64 years, the life expectancy from that point onwards was only 14 years (G7 average of men and women). The life expectancy at the pensionable age has increased by around 6.5 years, or almost 50%, since then while the average retirement age has only increased by one year.

The life expectancy of men at age 65 (1960-2015)



The life expectancy of women at age 65 (1960-2015)

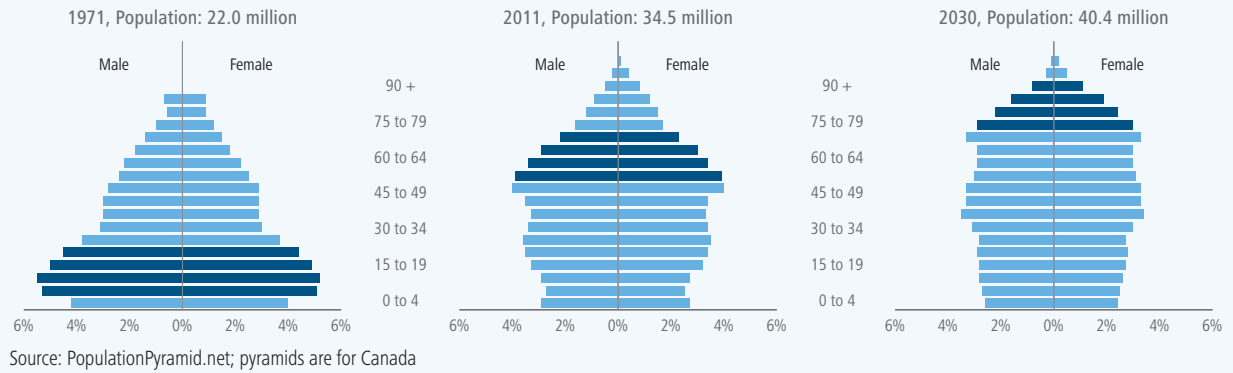


Source: OECD Data

While plan sponsors have been slow to adjust to the longer life expectancy of participants, society in general has not embraced the concept of delaying retirement. Changing workplace requirements during rapid technological change might throw another wrench into the works.

Lower birth rates have exacerbated the problem by significantly altering the ratio of workers to retirees. This puts particular stress on PAYG systems, as fewer workers will have to contribute for more retirees.

### Aging populations mean fewer workers, more retirees



### Design flaw #2: Unrealistic discount rate and investment performance assumptions

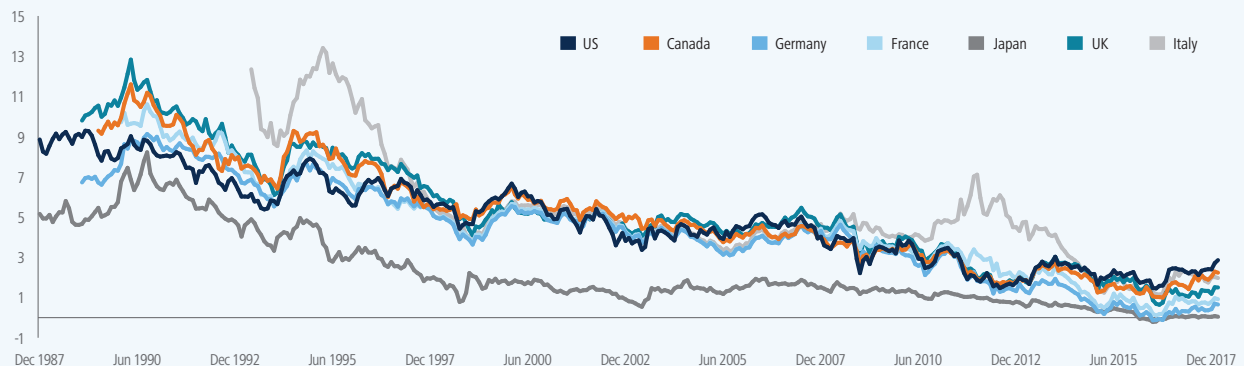
The solvency of funded pension plans is highly sensitive to the assumptions embedded in the calculations, chiefly, expected returns and discount rates. Publicly available data from pension systems globally shows that sponsors frequently use input factors that overestimate the potential asset growth and underestimate the present value of future liabilities.

The discount rate plays a significant role in determining funding status, as this rate discounts the future obligation back into today's dollars. As bond yields fell over the past few decades, many corporate pension plans adjusted their discount rate downwards. The average discount rate for corporate pension plans is currently around 4%, approximately equal to a BBB-rated corporate bond – implying some credit risk. However, US public pension plans are still highly aggressive in their chosen discount rate as the median still sits at a lofty 7.6%. This suggests that \$23 today would be considered adequate to fund a pension obligation of \$100 in 20 years.

### Analyzing a pension obligation like a bond investment

A pension promise is in a way quite similar to issuing a bond, given that it is a promise to pay someone at a future time. When an issuer launches a bond, the market determines the interest rate. If the market has significant confidence in the issuer's ability and willingness to repay, the interest will be very close to that of a similar maturity government bond. That level will then broadly reflect the government's growth and inflation expectations (and term premium) over the maturity of the bond. Unlike a bond, a pension plan can choose the rate it wants to use. This rate (discount rate) is used to discount back future liabilities to the present time. If a plan opts for a high discount rate, future liabilities will be smaller today. When a discount rate is significantly higher than the yield on a long dated government bond, it should imply some credit risk (similar to a high yield bond). When looked through the lens of a bond investor: a pension plan with a high discount rate should raise concern that the promise of payment may not be kept.

### After a 30-year bull run in developed market bonds, is a 7.6% discount rate a realistic assumption?

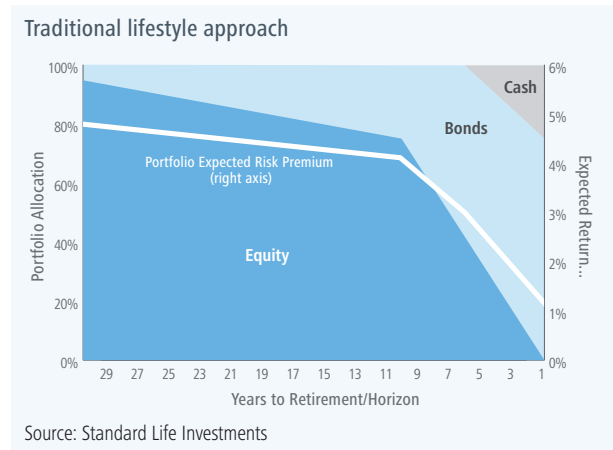


Similarly, expected investment performance is a crucial input factor into the solvency calculation of any plan. The higher the expected investment performance, the less money is needed to be set aside to cover the obligations. Return expectations vary significantly between the different entities without necessarily having different allocations. The median return assumption for US public pension plans is currently 7.5%, which, admittedly, is not far off from the historical results achieved by major pension plans. Having said that, given that bonds, equities and alternative investments are all at or close to record highs, a continuation of the stellar performance seems doubtful. Historically, strong asset performance has masked the design flaws inherent in pension funds. The key risk is that global asset markets fail to deliver returns at that level, or do so with more volatility.

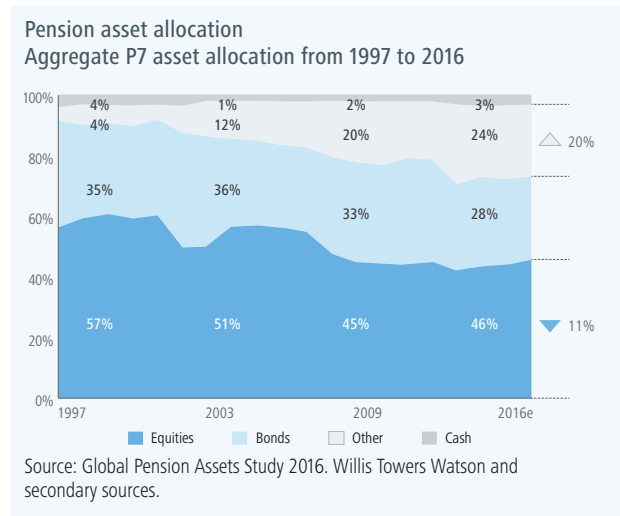
### Design flaw #3: Return targets drive asset allocation

Many of these issues have been with us for years, if not decades. During the Financial Crisis in 2008-09 several corporate pension plans experienced trouble and the long-term solvency of their plans was severely questioned. Since then, plan returns have been stellar, hiding some of the system's flaws. Equally crucial, however, has been that many plans still enjoyed a healthy ratio of current employees (contributors) to retirees (receivers). That ratio is shifting dramatically and will exert pressure on pension funds.

In a sense, it can be argued that the pension sector has moved from the accumulation phase to the payout phase. Given that change, the maximum drawdown a pension fund can withstand has diminished. Pension funds do not have the luxury of time anymore to compensate for poor near term returns. The sequencing of returns has become centerstage. While we do not fully agree with the traditional asset allocation approach, a reduction in risky assets upon entry of the retirement/dispersion phase seems prudent.



By contrast, funded global pension plans remain heavily invested in risky assets while the fixed-income component has been steadily declining for years. In short, the traditional shift in asset allocation has not been happening. The drive towards riskier asset allocations has presumably happened out of the necessity to hit return targets and displays the inability to downplay forward return expectations despite higher expected volatility.



### Design flaw #4: Vested interests

Virtually everyone from government officials to union bosses and aging employees are incentivized to maintain the status quo. Public employees may sleep better at night believing they have a "retirement plan". Public legislators may have a higher chance of getting re-elected, given the generous entitlements to retirees and voters who want to avoid the harsh reality. Moreover, by not addressing the funding gap, public expenditures can remain high, further aligning with voter intentions. Last, but not least, it allows those union leaders that have not properly raised the issue of plan solvency to participants, to keep their jobs.

## Societal and investment implications

Much has been written about the rise of "short-termism", and in the case of the unfolding pension issues, short-term thinking and political pragmatism are at the root of the problem that governments and even CEOs face when trying to address these issues. Part of our investment process is to consider and analyze the potential longer-term consequences of societal and governance issues such as those discussed in this article. We believe that a pension crisis will happen at some point and this belief will manifest itself in our portfolios in multiple ways.

The macro implications of a realization of insufficient pension savings globally has the power to severely undermine confidence in risky assets and perceived risk-less assets. The mental model is that pensions are safe and risks are limited to a region, company or perhaps an industry. This is not unlike the belief that house prices can never decline on a country-wide or global scale. The bottom line is this: too little savings has resulted from too much past consumption and that will lead to reduced future consumption and more savings. Asset prices will need to respond sooner or later to that new paradigm.

What does this mean for country selection in Mackenzie portfolios? We rank countries from “well prepared” to “ill prepared” to meet pension obligations and the potential implications for future budget and debt constraints. This impacts our country-selection process. The preparedness of state and local entities (primarily in the US) can also be vastly different. While some states are in a decent position, others are at the brink of disaster. It is often not the most widely covered names that offer the biggest disconnect from market pricing, but the second tiers. This will be relevant to any municipal exposure, as well as for the federal government and, of course, also related to politics. While it is true that global wealth is significant and should pose a counter-balance on the balance sheet, a large part of the wealth is concentrated with the rich and ultra-rich – not the primary recipients of pensions, or the voter base. Moreover, generational conflicts might arise within countries from disagreements as to who will foot the bill, possibly weakening the political stability of some nations. The trend we have already seen of disenfranchised voters looking to populist candidates, often with some big ideas and seemingly easy solutions, could accelerate. As such, this looming crisis could also have a profound impact on the macroeconomic landscape, business climate and social fabric. Developed countries are likely to be at the center of this crisis, while emerging markets – given their less well-defined social safety nets and younger populations could emerge as relative winners. We will devote a future research report on our analysis of governments globally.

While many companies have addressed their pension issues (mainly by shifting from DB to DC plans), some large legacy companies are still grappling with unsustainable pension obligations. The underlying assumptions for the calculation of net pension obligations are what matters to us most. Here, we can use more realistic assumptions to recalculate the funded status of pension plans. This will provide us with insights to more accurate debt figures (after making our adjustments), a metric of sustainability (for our SRI-focused mandates) as well as a general understanding of the level of aggressiveness/conservatism of the company’s accounting practices. Again, a subsequent research piece will drill deeper into our findings for corporate pension plans.

The foundation for all players in pension management is the assumptions placed into the system. In our opinion, individuals’ expectations of their defined benefit plans and/or government pensions are too high, while corporates and governments, by and large, have too rosy assumptions baked into their calculations of financial sustainability. Those assumptions are what keeps the system from experiencing stress. We are questioning those assumptions to be better prepared for the future. It is not enough to take pension entitlements at face value; it is necessary to understand the financial position of the sponsors’ ability to fulfil the obligations and, if necessary, make adjustments.

## Talk with your financial advisor to learn more about pension investing opportunities with Mackenzie Investments.

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