

# The coming pension Cambrian explosion

Credit diversifiers can help hedge portfolios adapt to the late-cycle environment

December 2019

**AROUND 540 MILLION YEARS AGO, ALL FORMS OF LIFE ON PLANET EARTH WERE SIMILAR AQUATIC, SINGLE-CELLED ORGANISMS—AND THERE WERE NO PENSION FUNDS OR ACTUARIES.** Multiple explanations have been put forward for exactly what happened next, but the result was an evolutionary burst into a diversity of complex species. Most animals alive today can trace their origins to this period, the Cambrian explosion. We believe current strategic considerations and market conditions suggest corporate pension funds may be on the precipice of a similarly diversifying expansion. Just as the Cambrian explosion allowed more complex, specialized organisms to evolve, today's backdrop may allow pension portfolios to evolve and use a far wider, more diversified array of nonstandard asset classes.

AUTHOR



**Michael Buchenholz, CFA, FSA**  
Head of U.S. Pension Strategy,  
Institutional Strategy and Analytics

## REVISITING SPREAD DIVERSIFICATION

Back in May 2017, we published “Benefits of being ‘insurance-like,’”<sup>1</sup> which compared corporate pension and regulated life insurer portfolios, risk tolerances and objectives. We concluded that many pension fund portfolios had precarious levels of exposure to the largest investment grade issuers across their hedge and public equity strategies, and that this could potentially, in the event of a downgrade or default, exacerbate the funded status “slippage” impact of such a credit event. Our recommendation—admittedly not a panacea—was to be more like life insurers and cast a wider net across the fixed income universe, diversifying away from traditional corporate credit and into securitized and private markets that offer differentiated drivers of risk and return.

Perhaps more coincidence than prescience, that case we made for spread diversification is even more opportune today. Several catalysts have moved this narrative to the forefront of both plan sponsors’ and portfolio managers’ minds.

## WHY NOW?

Three overlapping catalysts are driving the call to action on spread diversification today:

### Hedge portfolios are larger today than they have ever been

Indeed, they will likely only continue to grow. Over time, more and more plan sponsors have traversed to higher levels of their glide paths. Meanwhile, gradually and in parallel, a structural industrywide shift has moved more sponsors from a total return to a liability-driven investment (LDI) approach, directing additional long-duration flows irrespective of rate levels. Both trends point toward larger hedge portfolio allocations. With the unwinding of regulatory pension relief on the horizon,<sup>2</sup> there is now visibility to further contributions in the future, validating our

<sup>1</sup> Buchenholz, Michael and Snyder, Mark, “The benefits of being ‘insurance-like,’” May 2017, J.P. Morgan Asset Management; <https://am.jpmorgan.com/us/institutional/library/the-benefits-of-being-insurance-like>

<sup>2</sup> Buchenholz, Michael, “Pension indigestion: Considerations for the end of regulatory relief,” December 2019, J.P. Morgan Asset Management; <https://am.jpmorgan.com/us/institutional/library/pension-indigestion>.

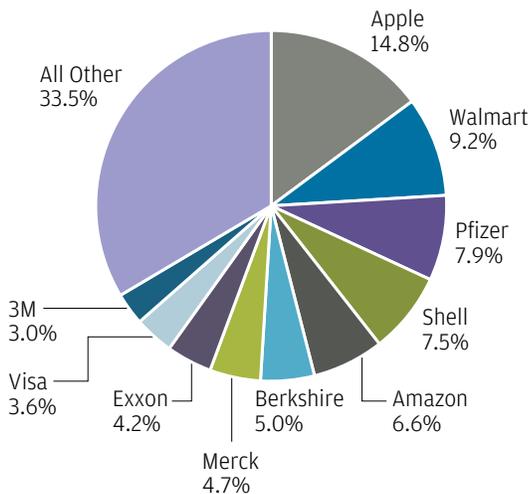
expectations that the trend will continue. As hedge portfolios swell, plan sponsors can afford to dedicate more resources to ensuring they are behaving as advertised relative to their pension liabilities—in some cases, they can't afford not to.

### Funded status slippage

We have certainly not been alone in pointing out the insidious cost of downgrades and defaults for corporates-based hedging, estimated at between 25 basis points (bps) and 75bps of funded status per year, on average. As the number of Aa rated corporate issuers has shrunk, pension liabilities have become more susceptible to idiosyncratic credit risks (**EXHIBIT 1**). At the same time, the most common lever used to generate excess return in hedge portfolios is an overweight to credit, potentially exacerbating, in a downturn, slippage on both the asset and liability sides of the equation.

### The pension discount curve is made up of a limited number of issuers

EXHIBIT 1: DURATION EXPOSURE BY AA ISSUERS, CITIGROUP U.S. BROAD INVESTMENT-GRADE (BIG) BOND INDEX



Source: Citigroup U.S. Broad Investment-Grade Bond Index; October 2019.

### Late-cycle credit dynamics

The corporate credit markets have evolved dramatically since the financial crisis. Leverage has increased and credit quality has deteriorated while dealer balance sheets and trading volume have shrunk, potentially magnifying the downside impact of credit market shocks. At the same time, households have rebuilt their balance sheets and the consumer is strong, elevating securitized exposures as an attractive credit diversification tool.

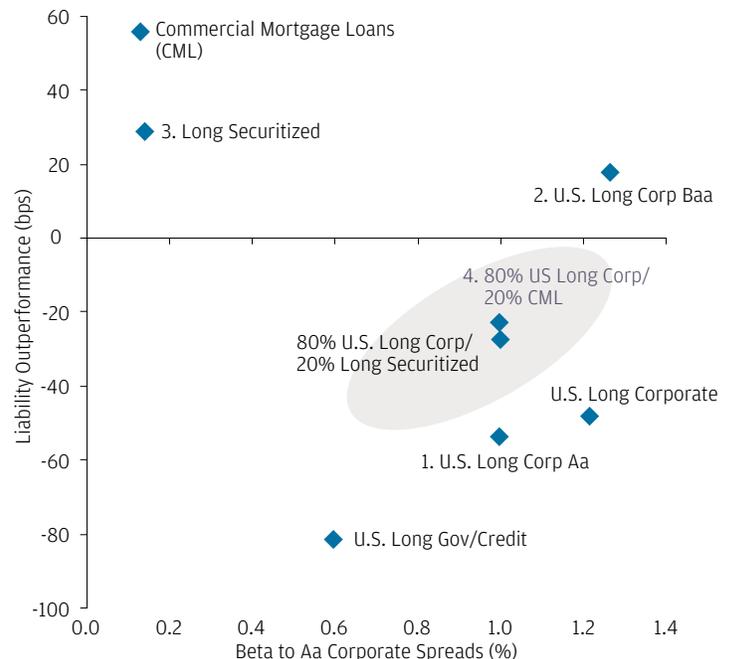
The orthodoxy of traditional corporates-only hedge portfolios may serve as an appropriate solution for some. But how can those plan sponsors with the capacity to expand their opportunity set adapt their hedge portfolios to this structural and market backdrop? In the remainder of this piece, we will explore which asset classes are compelling for credit diversification (see box, “What’s in a name?”), look at various methods of implementation and, importantly, quantify the potential impact in terms of both costs and benefits to the strategy.

### THE ROLE OF SPREADS IN LIABILITY-AWARE PORTFOLIOS

Before we turn to exploring alternatives to traditional corporate credit exposures, it’s worth reiterating the two primary roles of credit spreads in liability-aware portfolios. Their most conspicuous function is to correlate with the excess returns of the liability. Their other function—where traditional hedge portfolios commonly fall

### In liability-aware portfolios, different asset classes fulfill to varying degrees the roles of tracking liabilities and keeping pace with liability growth

EXHIBIT 2: PERFORMANCE OF VARIOUS ASSET CLASSES VS. LIABILITY TRACKING



Source: Bloomberg Barclays Indices, ICE BofAML Indices, J.P. Morgan Asset Management; metrics based on data from February 28, 2001, to August 31, 2019.

Liability outperformance is measured relative to a duration-neutral hypothetical cash flow stream valued on the FTSE Pension Discount Curve. Long securitized is a benchmark composite reflecting the long-maturity securitized opportunity set through time. Prior to May 2014, it consisted of 95% BAML 10+ Agency CMO Excluding IO & PO Index and 5% BAML 10+ Year Aa Fixed Rate CMBS. Post-May 2014, it reflects 60% Bloomberg Barclays US Agency CMBS 8.5+ Year Index, 35% BAML 10+ Year Index and 5% BAML 10+ Year AA US Fixed Rate CMBS.

short—is to contribute to earning the liability discount rate. Put another way, the liability, immune from defaults and downgrades, always earns its spread; meanwhile, corporate bond portfolios will often earn less than their starting spread level, due to bonds exiting the index and because of realized credit losses. Ideally, a credit diversification strategy will be one that maintains, or even enhances, liability tracking while simultaneously improving the portfolio's ability to earn its spread and keep pace with liability growth. We illustrate this concept in **EXHIBIT 2**, which assesses various asset class exposures by their ability to track the liability spread exposure (x-axis) and their historical outperformance relative to the liability (y-axis).

Exhibit 2 outlines several concepts about liability hedging:

### 1. Matching the liability precisely ensures funded status

**degradation:** A portfolio of Aa rated bonds has a spread beta of 1.0, meaning it will respond to credit spread movements in a similar direction and magnitude as the liability. However, it underperforms the liability over this period by almost 50bps a year, producing the notorious slippage effect.

### 2. Going down in quality improves return but carries costs:

Lowering credit quality mitigates liability underperformance but increases the spread beta beyond 1.0, meaning that the hedge portfolio will often overshoot liability spread changes. Down-in-quality bias is even more precarious against a late-cycle backdrop.

### 3. Credit diversifiers are not a hedge portfolio replacement: Long-duration commercial mortgage loans (privately negotiated

#### WHAT'S IN A NAME?

That which we call a credit diversifier by any other name would dampen funded status volatility. A credit diversifier, conceptually, should have different drivers of risk and return from corporate credit.

Structured asset classes derive their performance from the underlying collateral, whether it be a car for an auto loan or a house for a home mortgage. They also have structural credit enhancements built in to mitigate losses in the event of credit deterioration.

Other asset classes, such as private credit, may have macro-economic exposure similar to that of public credit but give a plan sponsor access to a different set of companies, alleviating some of the issuer concentration risk.

Ultimately, a credit diversifier should have two important characteristics when combined with a traditional corporate hedge portfolio. It should: 1) maintain or enhance liability tracking and 2) improve the portfolio's return profile relative to the liability.

mortgage debt on commercial real estate, or CMLs) and securitized asset classes (CMBS and CMOs) have outpaced liability returns, especially in periods of widening corporate spreads, but have a low beta (less than 0.2) to the liability.

**EXHIBIT 3** outlines the wide array of potential credit diversifiers that can be considered as part of a solution.

## Among credit diversifiers, CMLs, CMBS and CMOs have outpaced liability returns but with low beta to the liability

EXHIBIT 3: CHARACTERISTICS OF POTENTIAL CREDIT DIVERSIFIERS

Asset class	Description	Available maturity
Agency RMBS	Pass-through mortgage pools issued by Ginnie Mae, Fannie Mae and Freddie Mac	Short/intermediate
Commercial MBS	Tranched securities backed by pools of commercial mortgage loans	Intermediate/long
Nonagency RMBS	Mortgage securities issued by private institutions, backed by nonconforming collateral	Short/intermediate
Asset-backed securities	Tranched securities backed by pools of credit card receivables, auto loans, student loans and other collateral	Short
Agency CMO	Tranched cash flow securities backed by agency RMBS collateral	Short/intermediate/long
Long securitized	Combination of long-duration CMBS and agency CMOs	Long
Commercial mortgage loans	Privately negotiated investment grade commercial loans	Intermediate/long
Real estate mezzanine debt	Private mezzanine financing of U.S. commercial real estate	Short/intermediate
Core infrastructure	Essential facilities and services in a society that often operate on a monopolistic basis and are supported by long-term contracts	Intermediate/long (based on duration of contracted cash flows)
Core transportation	Long-term leasing of backbone transportation assets	Intermediate/long (based on lease duration)

Source: J.P. Morgan Asset Management; data as of September 30, 2019.

#### 4. Credit diversification can enhance hedge portfolio

**performance:** By combining long corporates with credit diversifiers (we illustrate an 80–20 split in Exhibit 2), we can improve tracking error to the liability while simultaneously alleviating the cost of funded status “slippage.”

#### IMPLEMENTATION CONSIDERATIONS

While the potential benefits of credit diversification for funded status outcomes may be clear, the more challenging issue is how to implement this against a wide array of unique governance structures. The answer needs to address such questions as where to put the diversifier, what to call it and how to measure its success. In our work with pension clients, we’ve seen several implementation styles that differ across various dimensions (**EXHIBIT 4**).

Another key consideration is sizing. We believe most plans can benefit from reallocating to credit diversifiers anywhere from 10% to 25% of their corporate hedge portfolio exposure. The more de-risked a plan is, the more pronounced the benefits of diversification will be. The governance budget should also play a role in the choice of implementation: If there is limited capacity to add oversight for a new asset class, integrating diversifiers into a standard benchmarked strategy may be the most suitable approach; for those with the resources to monitor, a separate sleeve offers customization and tractability. Finally, as the market backdrop evolves, the relative attractiveness of traditional credit vs. diversifiers will fluctuate.

Building in the flexibility for a diversification strategy that is adaptive in both size and composition will be key to the pension portfolio’s long-term success.

#### PUTTING IT ALL TOGETHER

To further assess the impact of credit diversifiers, we examine two sample pension portfolios for a 90% U.S. GAAP funded plan, currently allocated to 60% Long Corporate and 40% ACWI Equity (**EXHIBIT 5**, next page).

We reallocate one-third of the hedge portfolio away from credit, evenly splitting the allocation between long securitized and CMLs. This change improves almost all pension metrics, reducing surplus volatility and asset volatility, lowering equity beta and upgrading backward-looking metrics, including maximum drawdown. These metrics are agnostic to the implementation mechanism and based purely on the economic exposures themselves.

How might this look as an integrated strategy in which the ultimate hedge portfolio benchmark remains U.S. Long Corporate? **EXHIBIT 6** (next page) quantifies both the tracking error to the liability and hedge portfolio benchmark for various sizes of credit diversifier blends. We see that tracking error to the liability is minimized with 20%–30% in credit diversifiers, although the manager shoulders an additional 150bps to 225bps of benchmark tracking error. These trade-offs will be different for each plan sponsor and should feed into the process of weighing different implementation options.

#### Credit diversification comes in several styles differing across various dimensions

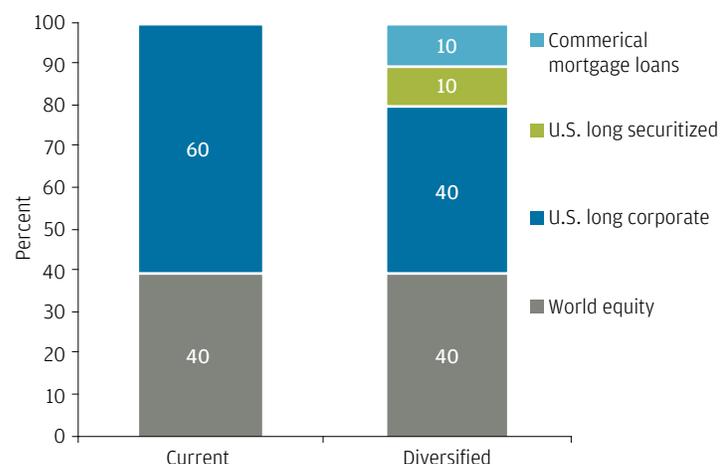
EXHIBIT 4: METHODS FOR IMPLEMENTING CREDIT DIVERSIFICATION

	Separate sleeve	Integrated strategy –blended benchmark	Integrated strategy –standard benchmark	Liability-based benchmark
<b>Description</b>	Pure diversification sleeve incorporated into hedge portfolio as stand-alone strategy, benchmarked to a similar exposure	Strategy managed against a blended benchmark of traditional credit and credit diversifiers (e.g., 80% U.S. Long Corporate/ 20% U.S. long CMO)	Strategy managed against a standard traditional credit benchmark (e.g., U.S. long corporate) with an expanded opportunity set and guidelines	Strategy tasked with outperforming the actual liability returns across a multi-sector fixed income opportunity set
<b>Guideline considerations</b>	Standard	Standard	May cap corporate exposure to ensure diversification	May cap corporate exposure to ensure diversification
<b>Tracking error to liability</b>	High	Moderate	Moderate	Low to high
<b>Tracking error to benchmark</b>	Low to moderate	Low to moderate	Moderate	Moderate to high
<b>Instruments</b>	If the use of derivatives to achieve duration targets is restricted, the opportunity set may be limited to longer-maturity diversifiers such as CMOs, CMBS and CMLs. Where derivative overlays are permitted, shorter-duration securitized exposures, such as ABS, agency RMBS and nonagency RMBS, are attractive.			

Source: J.P. Morgan Asset Management; data as of November 22, 2019.

### Adding credit diversifiers can enhance portfolio performance

EXHIBIT 5A: TOTAL PLAN SUBSTITUTION EXAMPLE: 20% CREDIT DIVERSIFIERS



Source: J.P. Morgan Asset Management; data as of September 30, 2019.

### Diversifying improves almost all pension metrics, reducing surplus volatility and asset volatility, lowering equity beta and upgrading maximum drawdown

EXHIBIT 5B: ILLUSTRATIVE PENSION PORTFOLIO CASE STUDY, WITH AND WITHOUT CREDIT DIVERSIFICATION

	Current	Diversified	Change $\Delta$
Expected return (%)	5.12	5.12	unch
Asset volatility (%)	9.88	8.75	(113bps)
Surplus volatility (%)	7.46	7.13	(33bps)
Sharpe ratio	0.326	0.358	0.032
Hedge ratio (%)	54.0	54.0	unch
Worst quarter return (%)	-12.68	-10.56	+212bps
World equity beta	0.51	0.44	-0.07
Max drawdown (%)	-26.59	-23.05	+354bps

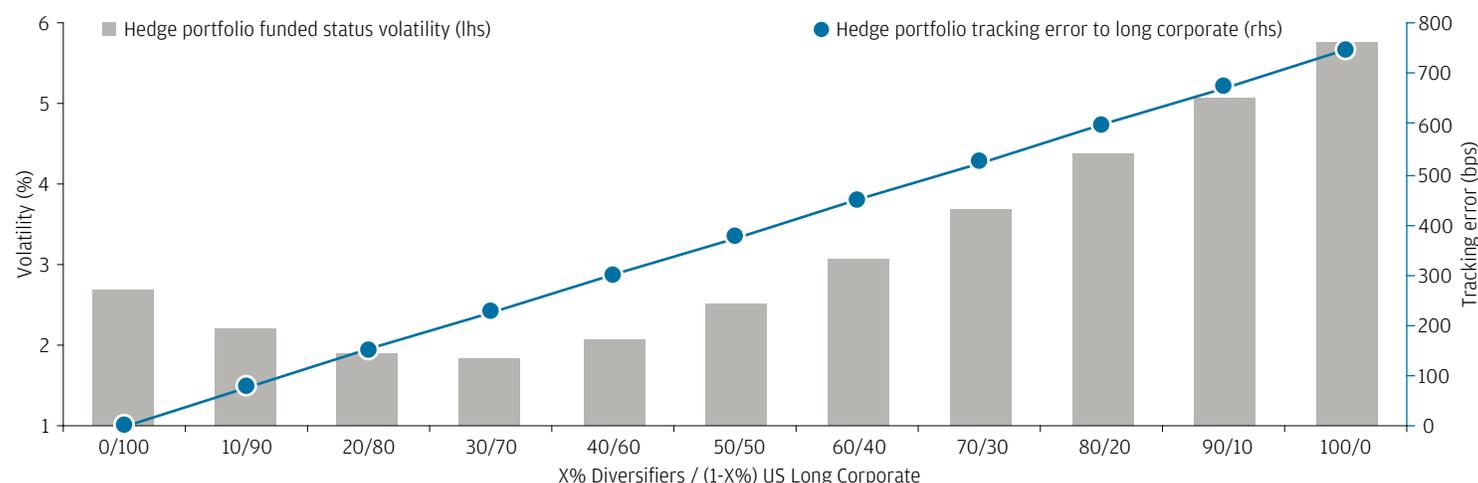
Source: J.P. Morgan Asset Management; September 30, 2019. The max drawdown denotes the maximum historical peak-to-trough decline in asset values. Equity beta is computed relative to the MSCI World benchmark.

## CONCLUSION

It took 540 million years for the single-celled aquatic organism to evolve and adapt into the terrestrial hominid multi-celled pension actuary. The opportunity for plan sponsors to adapt, through credit diversifiers, to structurally larger hedge portfolios and a late-cycle market backdrop is not quite as radical a development. However, we believe it is a crucial step forward in the evolution of pension risk management.

### Examining surplus volatility and hedge portfolio tracking error shows that diversification comes with trade-offs

EXHIBIT 6: HEDGE PORTFOLIO FUNDED STATUS VOLATILITY AND TRACKING ERROR TO LONG CORPORATE



Source: J.P. Morgan Asset Management; data as of September 30, 2019.

**NEXT STEPS**

For more information, contact your J.P. Morgan representative.

**NOT FOR RETAIL DISTRIBUTION:** This communication has been prepared exclusively for institutional, wholesale, professional clients and qualified investors only, as defined by local laws and regulations.

This document is a general communication being provided for informational purposes only. It is educational in nature and not designed to be taken as advice or a recommendation for any specific investment product, strategy, plan feature or other purpose in any jurisdiction, nor is it a commitment from J.P. Morgan Asset Management or any of its subsidiaries to participate in any of the transactions mentioned herein. Any examples used are generic, hypothetical and for illustration purposes only. This material does not contain sufficient information to support an investment decision and it should not be relied upon by you in evaluating the merits of investing in any securities or products. In addition, users should make an independent assessment of the legal, regulatory, tax, credit, and accounting implications and determine, together with their own professional advisers, if any investment mentioned herein is believed to be suitable to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without prior notice. All information presented herein is considered to be accurate at the time of production, but no warranty of accuracy is given and no liability in respect of any error or omission is accepted. It should be noted that investment involves risks, the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yields are not reliable indicators of current and future results.

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide.

To the extent permitted by applicable law, we may record telephone calls and monitor electronic communications to comply with our legal and regulatory obligations and internal policies. Personal data will be collected, stored and processed by J.P. Morgan Asset Management in accordance with our Company's Privacy Policy (<https://www.jpmorgan.com/global/privacy>).

This communication is issued by the following entities: in Canada for institutional clients' use only by JPMorgan Asset Management (Canada) Inc., and in the United States by J.P. Morgan Institutional Investments, Inc., member of FINRA; J.P. Morgan Investment Management, Inc. or J.P. Morgan Alternative Asset Management, Inc.

Copyright 2019 JPMorgan Chase & Co. All rights reserved.

INST-CAMBRIAN | 0903c02a82787388