

Investment Perspectives

Intermediate Credit: Refining the Credit Spread Hedge and Generating Alpha¹

Key Takeaways

- An Intermediate Credit allocation can improve the credit spread hedge and reduce funded status risk for well-funded and mature defined benefit plans.
- Compared to Long Credit, Intermediate Credit broadens the investment universe across issuers and expands the opportunity for alpha generation.
- A wide spectrum of intermediate-duration, out-of-benchmark securities offer further opportunities to diversify and add less correlated alpha.
- Our integrated, team-based approach to selecting investments has delivered strong long-term results and been instrumental to the success of the Dodge & Cox Intermediate Credit strategy.

Intermediate Credit: A Hedge And An Opportunity

At the latter stages of the pension journey, when plan assets are allocated primarily to liability-hedging assets (LHA) and interest rate hedge ratios are high, many plan sponsors seek to further reduce funded status risk by sharpening the precision of the liability hedge. This typically involves implementing a completion strategy to achieve a granular interest rate hedge, revisiting the Treasury and credit weights to align with the nature of the liability discount rate, and implementing an allocation to Intermediate Credit (or core-duration credit) beside a long-standing Long Credit allocation to refine the credit spread hedge.² As liability duration shortens over time—typically by 0.2 to 0.4 years per year for a frozen plan (absent changes in interest rates)—Intermediate Credit is likely to play an increasingly important hedging role.

As we explore below, the Intermediate Credit investible universe is somewhat different from its long-duration counterpart and can incorporate a richer set of alpha-generating and diversifying opportunities. Investors can take advantage of both a wider set of investment-grade credit (IG) issuers as well as below investment-grade (BIG), securitized, and other security types available in the intermediate part of the yield curve. Consequently, Intermediate Credit can serve as an alpha-generating engine within LHA and help plan sponsors reach their endgame, whether it is hibernation or termination.

Refining The Credit Spread Hedge: An Example

Consider a hypothetical \$1 billion, fully funded, frozen plan with an 11-year duration liability, allocated 20% to global equities, 65% to Long Credit, and 15% to completion, targeting a 100% interest rate hedge ratio (IRHR) across the curve.³ As Figure 1 illustrates, after accounting for the fact that a typical Long Credit portfolio has a lower quality profile than the liability discount rate (assumed to be AA), this asset allocation has a total credit spread hedge ratio (CSHR) of 112%, with even higher values at longer maturities. This “overhedge” means that widening spreads would result in a *reduction* in funded status as LHA would decrease by a greater dollar amount than the liabilities. A CSHR of over 100% may be especially

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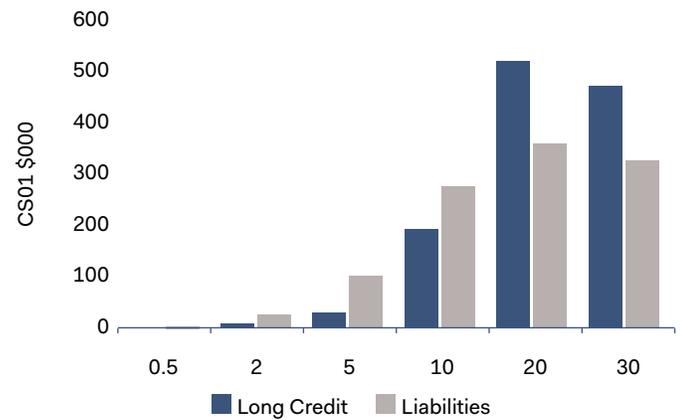
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concerning given high correlations between credit spread changes and equity returns, which are often a large component of return-seeking assets. Consequently, a target CSHR of under 100% may be desirable.

Figure 1. Sample Plan: Asset Allocation A, CS01, and CSHR³

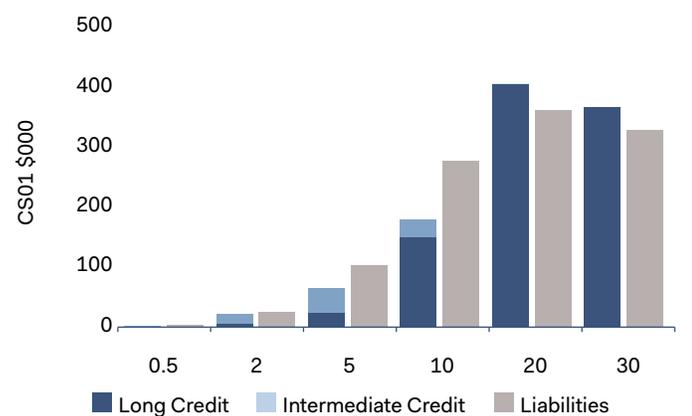


	0.5	2	5	10	20	30	Total
Assets CS01	1	8	30	194	522	473	1,229
Liabilities CS01	4	26	103	277	361	328	1,100
Difference	(3)	(19)	(72)	(83)	161	145	129
CSHR	27%	29%	30%	70%	145%	144%	112%

Source: Dodge & Cox. CS01 is expected change in the present value of liabilities or market value of assets given a 1bp change in AA spreads at the specified maturity (or in total). CSHR is the credit spread hedge ratio, i.e., the ratio of asset CS01 to liability CS01. Numbers may not add up due to rounding.

Redistributing credit exposure to include a 15% allocation to Intermediate Credit, as shown in Figure 2, eliminates the credit spread overhedge and results in a more even spread hedge across the curve. The net result is a nearly 20% reduction in funded status risk, from 3.0% to 2.5%, as summarized in Figure 3.

Figure 2. Sample Plan: Asset Allocation B, CS01, and CSHR³



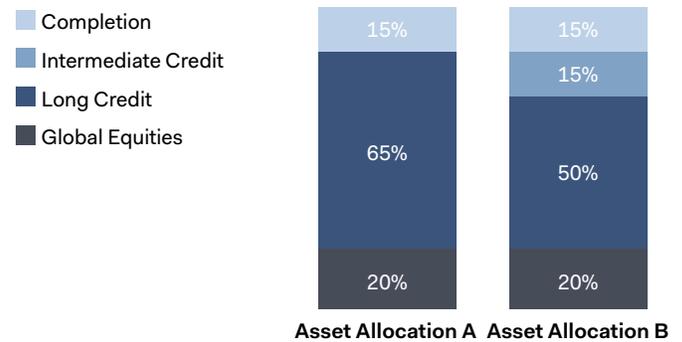
	0.5	2	5	10	20	30	Total
Assets CS01	2	21	64	178	402	364	1,031
Liabilities CS01	4	26	103	277	361	328	1,100
Difference	(2)	(5)	(39)	(99)	41	36	(69)
CSHR	53%	81%	62%	64%	111%	111%	94%

Source: Dodge & Cox. CS01 is expected change in the present value of liabilities or market value of assets given a 1bp change in AA spreads at the specified maturity (or in total). CSHR is the credit spread hedge ratio, i.e., the ratio of asset CS01 to liability CS01. Numbers may not add up due to rounding.

Unlike in a completion portfolio—where precise IRHRs across the curve can be achieved courtesy of a deep, liquid market in Treasuries and Treasury derivatives—targeting precise CSHRs may not be realistic or desirable because:

- The CSHR may vary over time due to the opaque nature of the discount rate and the fact that its beta to IG credit is variable.
- The high correlation between return-seeking assets (e.g., equities) and credit spreads may overwhelm any benefits of precisely targeting the CSHR.
- Achieving precise CSHRs across the curve may result in elevated transaction costs, especially with respect to off-the-run bonds.
- There is a high correlation in spread changes at nearby maturities. For example, a slight overweight at the 20-year point can be offset by an underweight at the 10-year point.
- Incremental tracking error resulting from CSHR deviations across the curve may well be justified, keeping in mind the alpha-generating objectives of the credit portfolio.

Figure 3. Sample Plan: Asset Allocations A and B³



	11.0 years	11.0 years
Liability Duration	11.0 years	11.0 years
Interest Rate Hedge Ratio	100%	100%
Credit Spread Hedge Ratio	112%	94%
CSHR 0-10 year maturities	46%	74%
CSHR 10-30-year maturities	129%	99%
Funded Status Risk	3.0%	2.5%

Source: Dodge & Cox. CSHR is the credit spread hedge ratio.

Implementation: To Blend or Not To Blend

Plan sponsors can layer in Intermediate Credit exposure by either creating an Intermediate Credit sleeve within the LHA or by adopting a single blended benchmark for the entire credit allocation and across all credit managers. As Figure 4 summarizes, the alternative approaches entail important tradeoffs to be considered in light of both investment objectives and plan sponsor resources. For example, while more complex, the two-sleeve approach is more flexible and may allow for a greater diversity of strategies, especially as a plan matures.

Figure 4. Comparison of Portfolio Structures

	Separate Long and Intermediate Credit Sleeves and Benchmarks	Single Credit Sleeve Blended Benchmark
Manager Benchmarks	Long Credit managers: Long Credit Intermediate Credit managers: Intermediate Credit	All managers: Blended Long/ Intermediate Credit benchmark
Rebalancing between Long and Intermediate Credit	Executed by the plan sponsor	Executed by the managers within their portfolios
Manager/Strategy Fit	Greater ability to diversify manager exposure by style Managers specializing in Long Credit, Intermediate Credit, or both Satellite strategies with durations similar to Intermediate Credit	Lower ability to diversify manager exposure by style Managers capable of managing to blended benchmarks and expertise across the entire credit maturity spectrum
Tactical Views on Long vs. Intermediate Credit and CSHR	Expressed primarily by the plan sponsor	Expressed primarily by the managers
Required Resources to Implement	Potentially higher (e.g., more managers to monitor, report on, and rebalance among)	Potentially lower

Intermediate Credit: A Broader Investment Universe

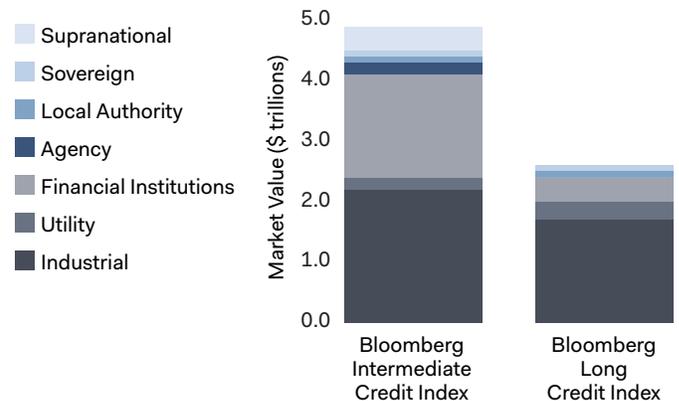
We now turn our attention to investing within Intermediate Credit, starting with the corporate component of the universe. The Bloomberg U.S. Intermediate Corporate Index differs from the Bloomberg U.S. Long Corporate Index in several key ways:

- The market value outstanding is almost twice as big, \$4.1 trillion vs. \$2.3 trillion;
- The number of issuers is one-third larger, 742 vs. 553;
- The weight of Financials is more than double, 41% vs. 17%, while that of Industrials is lower; and,
- Issuer concentration is slightly higher, with the top-10 issuers representing 19.2% of Index market value (versus 17.0%) and five issuers have a weight of over 2% (versus just two).

Please see the Appendix for more details.

Since these differences are sufficiently large, returns drivers, portfolio tilts, and attribution results may be different across intermediate and long-duration strategies, especially over shorter time periods. Although spreads are largely correlated across the major sectors, we have seen periods of decoupling, including the Global Financial Crisis (2008-2009), the U.S. sovereign downgrade (2011), the European Debt Crisis (2011-2013), and the energy-related spread widening of 2015-2016. Given our emphasis on bottom-up security selection, issuer diversification, and relative value, the Dodge & Cox Intermediate Credit strategy has historically exhibited an underweight to Financials, particularly as certain industrial sectors, such as Energy and Communications, have often provided more compelling opportunities.

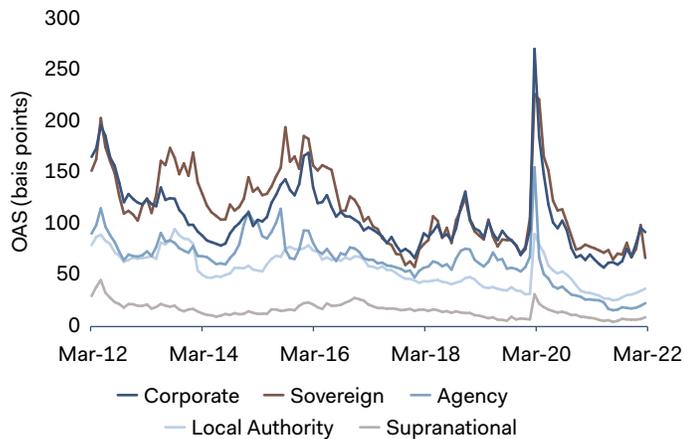
Figure 5. Sector Composition of Long and Intermediate Credit Indices (as of March 31, 2022)



Source: Bloomberg Index Services.

As with Long Credit, adding IG government-related issuers materially increases the investible universe, but, unlike in Long Credit, their liability-hedging and return-enhancing benefits are limited. This is because 7.3% of the Intermediate Credit Index is comprised of supranationals (i.e., multinational organizations focused on economic development, such as the European Development Bank) compared to only 0.1% in Long Credit. The sector is very high quality and has historically exhibited low and stable credit spreads (see Figure 6). Furthermore, the Agency component is larger (3.7% vs. 0.5%) and more heavily tilted toward government-guaranteed (as opposed to non-guaranteed) debt, also exhibiting lower spreads compared to Corporates.

Figure 6. Option-Adjusted Spread, Intermediate Credit Index sectors (as of March 31, 2022)



Source: Bloomberg Index Services.

In our view, these sectors create a consistent yield headwind relative to the overall Index and the liability discount rate while exhibiting minimal opportunity for spread compression. Instead of investing in these low-spread sectors, we prefer:

- **Agency MBS**, which, like supranationals, are high quality but more liquid and provide a similar or higher level of yield, and, importantly, the opportunity for alpha generation through security selection;
- **Taxable municipals**, whose relatively stable spread levels and spread volatility are often attractive relative to AA-rated or A-rated corporates; and,
- **U.S. Treasuries**, which are attractive due to their ample supply across maturities and low transaction costs (though tempered by the absence of spread).

Indeed, a long-time staple of our Long Credit strategy, taxable munis are becoming more relevant for Intermediate Credit portfolio management as bonds issued shortly after the Global Financial Crisis roll down the curve.

Seeking Out-of-Benchmark Alpha Opportunities

While also applicable to Long Credit, there are four out-of-benchmark exposures that are especially attractive for Intermediate Credit strategies: BIG issuers, securitized assets, hybrid and 144A securities, and securities with maturities outside the benchmark's norms. Allocating a portion of the portfolio to these segments can help generate alpha, enhance liquidity, and manage total portfolio risk, though issuer selection and sizing are crucial to ensure that tracking error remains reasonable.

As shown in Figure 7, spread sectors outside IG credit generally exhibit durations that are well aligned with that of Intermediate Credit. With the exception of Agency MBS, excess returns are also well correlated, making these segments a reasonable, yet diversifying, liability spread hedge. Of particular note are:

- **BIG credit**: Selective investments in BIG issuers can help generate alpha by compounding the yield advantage and accessing potential spread compression for improving credits. Notably, the broader BIG universe contains hundreds of issuers (compared to less than 100 for the *long* BIG universe) with 93% of the universe maturing in 10 years or less.
- **Agency CMBS**: As a whole, Agency CMBS exhibit spread levels that are comparable to higher quality Intermediate Credit, as well as high correlation, and, unlike Agency MBS, minimal prepayment risk. Risk exposures that are differentiated from corporates and the implicit government guarantee also make Agency CMBS an attractive diversifier.
- **Agency MBS**: The duration and spread of Agency MBS are typically comparable to high-quality intermediate corporates, but the correlation and beta are relatively low, making Agency MBS an attractive tactical relative value position, defensive holding, and/or diversifier. Of course, negative convexity risks must be taken into account and can be mitigated to a degree by investing in certain types of Agency CMOs rather than pass-throughs.
- **Asset-Backed Securities**: Like Agency MBS, high-quality ABS offer an alternative to AAA-rated and AA-rated corporate bonds, particularly those at the front end of the curve, while also delivering a somewhat different cash flow and risk profile.

Although strategic allocations to these market segments may be appropriate, especially from a spread diversification perspective, we favor a tactical approach that enables us to adjust to changes in the market environment and capitalize on opportunities. These include, for example, investing in select, high-conviction fallen angels after a period of spread-widening or establishing defensive positions in Agency MBS and CMBS in periods of tight credit spreads.

Using Security Structures to Generate Alpha

144A securities and hybrids issued by industrial companies can also help generate incremental alpha. Certain securities are issued in unregistered form pursuant to SEC Rule 144A⁴, making them available only to qualified institutional investors, including many plan sponsors and insurance companies. As such, these securities often trade at wider spreads than registered bonds issued by the same company, primarily as compensation for lower expected trading liquidity. With our long-term investment horizon, we sometimes find attractive opportunities to capitalize on these differentials while exposing our portfolios to, in our view, manageable incremental liquidity risk. In fact, 144A securities have become a broadly accepted component of the U.S. IG market (see Figure 8). They represent nearly a quarter of all corporate IG issuance currently, thus mitigating the liquidity considerations relative to their registered counterparts.

Figure 7. Characteristics of Non-IG-Corporate Fixed Income Market Segments

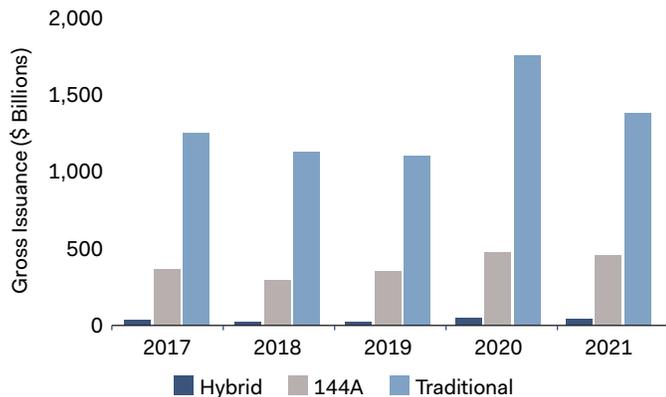
	Intermediate Corporate AA	Intermediate Corporate	Intermediate Credit	Agency MBS	ERISA-Eligible CMBS	U.S. Corporate High Yield	U.S. HY Fallen Angel 3% Cap	Aggregate-Eligible ABS	Global Agg Hedged
Duration	4.13	4.41	4.32	5.18	4.94	3.94	5.71	2.28	7.28
Option Adjusted Spread (bp)	33	92	82	24	85	325	283	57	42
Spread Return Beta to Int Corp AA	1.00	1.90	1.69	0.21	1.19	3.74	5.25	0.61	0.64
Volatility of Spread Returns	1.64%	3.23%	2.87%	0.94%	2.32%	7.12%	9.71%	1.30%	1.19%
Correlation of Excess Returns									
Intermediate Corporate AA	1.00	0.96	0.96	0.37	0.84	0.86	0.89	0.77	0.88
Intermediate Corporate	0.96	1.00	1.00	0.34	0.90	0.88	0.92	0.86	0.91
Intermediate Credit	0.96	1.00	1.00	0.34	0.90	0.88	0.92	0.86	0.91
Agency MBS	0.37	0.34	0.34	1.00	0.27	0.42	0.39	0.15	0.48
ERISA-Eligible CMBS	0.84	0.90	0.90	0.27	1.00	0.79	0.79	0.86	0.84
U.S. Corporate High Yield	0.86	0.88	0.88	0.42	0.79	1.00	0.95	0.65	0.87
U.S. HY Fallen Angel 3% Cap	0.89	0.92	0.92	0.39	0.79	0.95	1.00	0.71	0.87
Aggregate-Eligible ABS	0.77	0.86	0.86	0.15	0.86	0.65	0.71	1.00	0.72
Global Agg Hedged	0.88	0.91	0.91	0.48	0.84	0.87	0.87	0.72	1.00

Source: Dodge & Cox, Bloomberg Index Services. Data are as of March 31, 2022. Correlations and beta are based on monthly observations for the 10-year period ending March 31, 2022.

More niche than 144As, the hybrid securities we typically invest in have all of the following properties: they are lower in the capital structure than senior debt (but senior to common and preferred stock), allow for deferral of interest payments, have long legal maturities, are typically callable at par starting 5 or 10 years after issuance, and include incentives to redeem the hybrid at the first call date. Hybrids with these last two features exhibit intermediate (rather than long) duration. As compensation for subordination and structural complexity, hybrids typically offer a higher spread relative to traditional corporate bonds and can be attractive when issued by companies for which we view default and/or distress risk to be quite low.

As a result, including these securities while hedging the excess duration via U.S. Treasury futures can be an additional source of incremental alpha. Further, “pre-buying” 12- or 13-year securities (before they enter the Index) and holding them for a number of years can reduce long-term portfolio turnover and transaction costs. Importantly, we weigh these advantages against the associated complexity of the position and elevated spread duration risk. Executing this type of trade requires credit research expertise, deep understanding of trading dynamics across the curve, and the ability to trade futures.

Figure 8. Corporate 144A and Hybrid Annual Issuance



Source: Dodge & Cox, Bloomberg Index Services, JP Morgan.

Expanding the Toolkit: Credit Default Swaps and Exchange-Traded Funds

We would be remiss if we did not acknowledge credit exchange-traded funds (ETFs) and credit derivatives, such as index credit default swaps (CDX), as valuable tools that often allow investors to establish beta exposure more efficiently than by buying individual securities. This can be particularly useful in environments of rapidly rising credit spreads where we may seek to gain exposure quickly (e.g., March 2020), when there are large account inflows, and during account mandate transitions. CDX and ETFs are more relevant in Intermediate Credit strategies compared to Long Credit: CDX due to their 5- and 10-year tenors and ETFs due to better liquidity in intermediate duration. Generally speaking, credit ETFs are operationally simpler to implement, provide broader credit exposure, and align more closely with traditional market benchmarks than CDX.

Compounding a Spread Advantage

Finally, we have found that select off-the-run credits with maturities over 10 years can offer a higher spread and roll-down relative to similar securities with 10 years to maturity or less.

Putting It All Together

At Dodge & Cox, we apply a consistent investment philosophy and rely on a variety of internal resources to manage fixed income and equity portfolios on behalf of our clients. Rooted in fundamental research and scenario analysis with a particular focus on downside risk, this approach allows us to take advantage of the breadth of opportunities within IG credit—and also outside of it—to effectively hedge liabilities and generate alpha.

For example, by leaning on the expertise and experience of our global industry and credit analysts, we are able to build the confidence necessary to take the long view and, when sufficiently compensated, invest selectively in low-rated securities and subordinated parts of issuer capital structures. Likewise, our credit and structured products analysts are well equipped to analyze opportunities in the securitized space and evaluate their attractiveness relative to corporates across a range of interest rate and credit market scenarios. As a final example, we rely on our macroeconomic analysts to inform interest rate positioning, develop sector views, and help evaluate non-U.S. corporate issuers, sovereigns, and foreign Agencies.

This integrated, team-based approach is critical to the success of the Dodge & Cox Intermediate Credit strategy, which has generated meaningful alpha of approximately 1% annualized since the strategy's inception in 2013 while maintaining a comparable tracking error (see Figure 9). We bring a similar mindset to managing portfolios for our clients who have more constrained guidelines, maintain blended market benchmarks for all their liability-hedging managers, or manage LHA directly to liability cash flows.

Figure 9. Dodge & Cox Intermediate Credit Composite Characteristics relative to the Bloomberg U.S. Intermediate Credit Index (as of March 31, 2022)⁵

	3 Years	5 Years	Since Inception
Relative Return	1.38%	1.05%	0.90%
Tracking Error	1.35%	1.15%	1.00%
Information Ratio	1.02	0.91	0.88
Up-capture	120	115	111
Down-capture	100	95	91

Source: Dodge & Cox, Bloomberg Index Services. Inception date is January 1, 2013. All return statistics are annualized and gross of investment management fees.

In Conclusion

Plan sponsors can more effectively achieve credit spread hedge ratio targets and a more even credit spread hedge across maturities by combining Long and Intermediate Credit strategies. In doing so, it is important to keep in mind the differences between the two investment universes and out-of-benchmark opportunities and the resulting implications for portfolio construction, benchmarks, and relative performance. Dodge & Cox has a demonstrated track record of finding opportunities across the entire IG universe and tactically including out-of-benchmark securities defined by their sectors, structures, below investment-grade ratings, or maturities to deliver credit alpha while carefully managing portfolio risk.

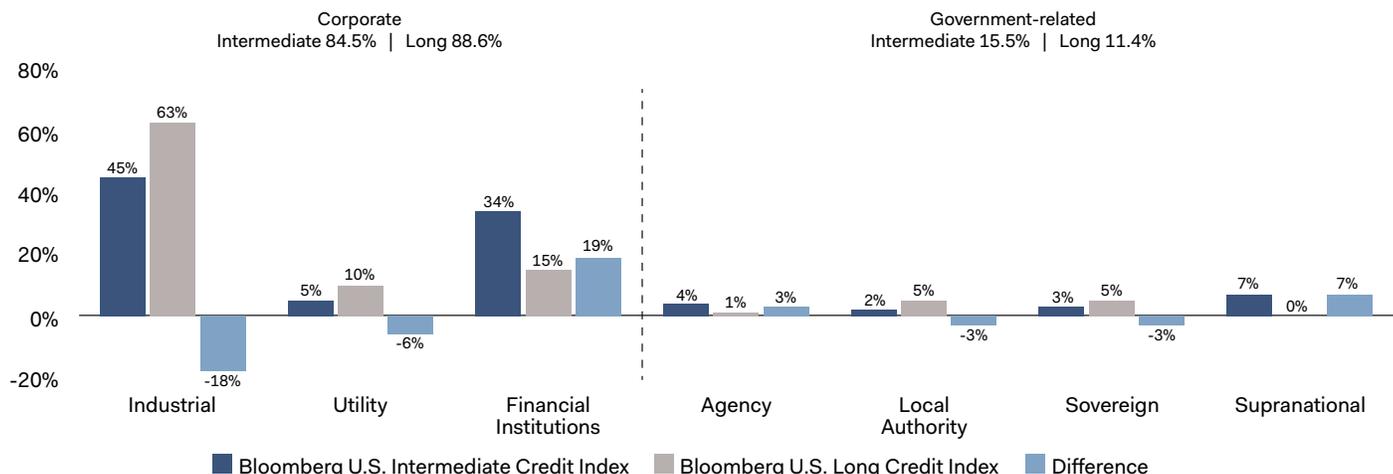
Appendix

Figure A1. Characteristics of Long Credit Indices (as of March 31, 2022)

Corporate			
	Intermediate	Long	Difference
Market Value (\$ trillions)	4.07	2.33	1.74
Issuers	742	553	189
Top 10 Issuers	19.2%	17.0%	2.2%
Government Related			
	Intermediate	Long	Difference
Market Value	0.75	0.29	0.46
Issuers	74	126	(52)
Top 10 Issuers	62.8%	52.5%	10.3%
Total			
	Intermediate	Long	Difference
Market Value	4.82	2.62	2.00
Issuers	816	679	137
Top 10 Issuers	18.3%	15.4%	2.9%

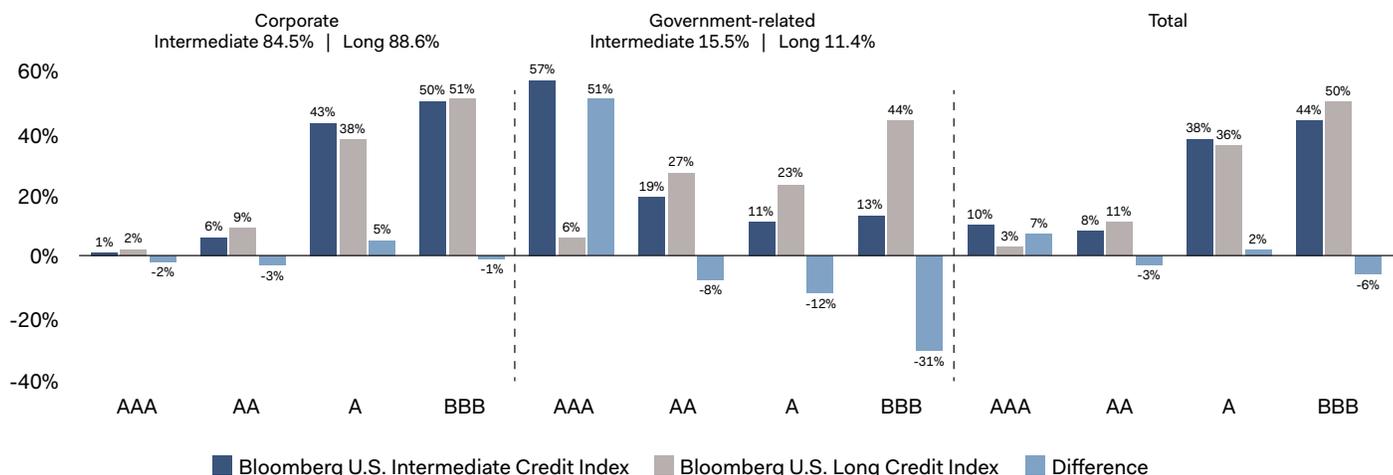
Source: Bloomberg Index Services. Numbers may not add up due to rounding.

Figure A2. Sector Composition (as of March 31, 2022)



Source: Bloomberg Index Services. Numbers may not add up due to rounding.

Figure A3. Quality Composition (as of March 31, 2022)



Source: Bloomberg Index Services. Numbers may not add up due to rounding.

Figure A4. Top Issuers (as of March 31, 2022)

	Intermediate Corporate		Long Corporate		Intermediate Credit		Long Credit	
1	Bank of America	3.3%	AT&T	2.7%	Bank of America	2.8%	AT&T	2.4%
2	JP Morgan	3.0%	Comcast	2.0%	JP Morgan	2.5%	Comcast	1.8%
3	Morgan Stanley	2.2%	Anheuser-Busch	2.0%	Int'l Bank for Rec. and Development	2.0%	Anheuser-Busch	1.8%
4	Citigroup	2.2%	Verizon	1.8%	Morgan Stanley	1.9%	Verizon	1.6%
5	Goldman Sachs	2.1%	Bank of America	1.6%	Citigroup	1.9%	United Mexican States	1.5%
Next 5		6.4%		6.9%		7.2%		6.4%
Total Top 10		19.2%		17.0%		18.3%		15.4%

Source: Bloomberg Index Services. Numbers may not add up due to rounding.

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(1) The information in this paper should not be considered fiduciary investment advice under the Employee Retirement Income Security Act. This paper provides general information not individualized to the particular needs of any plan and should not be relied on as a primary basis for investment decisions. The fiduciaries of a plan should consult with their advisers as needed before making investment decisions.

(2) As of March 31, 2022, the durations of the Bloomberg Long, Intermediate, and U.S. (i.e., core-duration) Credit Indices are 14.2, 4.3, and 7.9 years, respectively. Typical liability duration is in the range of 8 to 14 years, but may be longer or shorter depending on plan provisions and participant population.

(3) For illustrative purposes only. The plan is assumed to be fully-funded. For purposes of interest rate and credit spread hedge ratios, the hypothetical liability reflects a sample client liability stream with a duration of 11.0 years; the credit beta of investment-grade credit to the liability discount rate is assumed to be 1.33; liability characteristics, including duration, spread duration, and key rate spread durations, are calculated using Bloomberg PORT+. For purposes of funded status risk estimates, the liability is represented as the following blend of market indices: 51% Bloomberg U.S. Long Credit Index, 24% Bloomberg U.S. Intermediate Credit Index, 13% Bloomberg Long Treasury Index, 12% Bloomberg Intermediate Treasury Index. This blend of indices was selected to match hypothetical liability duration and credit beta. In the hypothetical portfolios, global equities are represented by the MSCI All Country World Index (Net), Long Credit by the Bloomberg U.S. Long Credit Index, Intermediate Credit by the Bloomberg Intermediate Credit Index, and the completion portfolio as a blend of the Bloomberg U.S. Long and Intermediate Treasury Indices such that the interest rate hedge ratio of the entire portfolio is 100%. Index fixed income characteristics are calculated using PORT+. Standard deviations and correlations used in the calculation of funded status risk reflect monthly observations for the 10-year period ending March 31, 2022 for the above-mentioned indices. Funded status risk accounts only for the investment component of funded status risk, does not reflect any potential alpha in excess of index returns, potential tracking error to the index, and deduction of any investment management fees.

The hypothetical information presented does not represent actual results of any client and is based upon the hypothetical assumptions described above. While we believe the assumptions used in this analysis are reasonable, other assumptions may also be reasonable and may lead to results that differ significantly from those shown here. Some assumptions have been made for modeling purposes and are unlikely to be realized; not all assumptions have been stated or fully considered; and changes in assumptions may have a material impact on the hypothetical results presented. Actual results for investors will differ from the results contained in this analysis. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment.

(4) 144A securities are sold through a nonstandard offering and are subject to resale restrictions. The main advantages of 144A issuance are the avoidance of costly SEC registration, applicable primarily to foreign issuers, and the faster time-to-market, applicable primarily to domestic issuers engaged in M&A activity and liability management exercises.

(5) Performance figures do not reflect the deduction of investment advisory fees and other expenses. Returns will be reduced by advisory fees and other expenses incurred in the management of your account. For example, if an annual management fee of 0.60% were deducted quarterly from your account, a ten-year annualized cumulative composite return of 10.00% would be reduced by 0.64% to 9.36%. Information on Dodge & Cox investment advisory fees can be found in its Form ADV Part 2A. For a copy of the Dodge & Cox Long Credit composite, please contact your Dodge & Cox representative.