STATE OF RHODE ISLAND

CLO FOLLOW UP

May 21, 2021

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EXECUTIVE SUMMARY

SUMMARY OF MARCH DISCUSSION

- **At the March SIC meeting, NEPC provided an educational presentation on CLOs**
  - In addition, NEPC presented on how a CLO allocation could benefit the ERSRI portfolio and the Income bucket in particular
  - The Income bucket is designed and structured to have an appetite for risk that results in a meaningful yield premia over investment grade fixed income markets

- **As a result, the SIC approved a new asset allocation which included a 2% allocation to CLOs**
  - The SIC approved the CLO allocation but requested that NEPC & the RI Investment team come back at the April meeting with insights on implementation
  - The newly approved asset allocation can be found in the appendix

- **There was interest in better understanding the benefits and risks of investing across CLOs and preferred implementation**
  - Including what could go wrong in a dedicated Mezz & Equity allocation

ERSRI ASSET ALLOCATION

		Approved Target
Equity	Global Equity	40%
	Public Growth	**40%**
	Private Equity	12.5%
	Non-Core Real Estate	2.5%
	Opp. Private Credit	0.0%
	Private Growth	**15%**
	TOTAL GROWTH	**55%**
Income	Equity Options	2.0%
	Liquid Credit	3.0%
	EMD (Blended)	2.0%
	HY Infrastructure	0.0%
	REITs	0.0%
	CLOs	2.0%
	Private Credit	3.0%
	TOTAL INCOME	**12%**
Stability	Long Treasuries	5.0%
	Systematic	5.0%
	CPC	**10%**
	Core Real Estate	4.0%
	Private Real Assets (ex-Real Estate)	4.0%
	TIPS	0.0%
	Inflation Protection	**8%**
	IG Fixed Income (ex-Treasuries)	6.5%
	Absolute Return	6.5%
	Strategic Cash	2.0%
	Volatility Protection	**15%**
	TOTAL STABILITY	**33%**
	TOTAL CASH	**0%**

OVERVIEW OF IMPLEMENTATION

- **Subsequent to the March meeting, NEPC and the RI Investment team further refined our implementation proposal**
  - Continued to meet with CLO managers to better inform our understanding of the space and areas of opportunities
- **Investment Grade tranches of CLOs typically offer LIBOR plus 1-2% representing marginal improvements over Investment Grade Corp. Credit but are less compelling relative to High Yield**
  - More trafficked space which likely limits manager alpha
  - Strong income component and held up well in market crisis
- **Mezz & Equity however reflect a more compelling opportunity relative to High Yield and typically offer low to mid-double digit returns**
  - Less trafficked space with higher manager alpha
  - Less contractual income but higher upside
- **Our analysis has led us to focus on Mezz & Equity as the preferred implementation approach for the 2% CLO target**

IMPLEMENTATION: CAPITAL STRUCTURE

Senior (AAA-A)

- Positives
  - Make up the bulk of total debt issued; Best liquidity profile
  - The most senior tranche which helps mitigates risks and losses
  - Typically the controlling class and are given greater control over the indenture
- Risks
  - Pays the lowest promissory interest to investors (L+1-2%)
- Preferred Use
  - An attractive risk-adjusted alternative to IG Corp. Credit
  - Existing exposure through ERSRI's Securitized Credit allocation

Mezzanine (BBB-B)

- Positives
  - Riskier than senior tranche but still well protected against losses
  - Pays the highest promissory interest (L+3-5%)
  - Most actively traded tranche in secondary market
- Risks
  - Spreads can widen quickly/meaningfully relative to senior tranches
  - Exposed to more credit risk given its subordination to senior tranches
- Preferred Use
  - A dedicated allocation with flexibility to add opportunistic investments when spreads widen

Equity

- Positives
  - Offers the greatest return potential (10%-15%)
  - Majority equity holders have optionality to reset, refinance, or call; This can add significant alpha potential
- Risks
  - First loss position
  - Receives residual cash flows after the debt tranches; payments are not promised
  - Cash flows can be temporarily 'shut off' if tests are failed
- Preferred Use
  - Private credit-like allocation and returns for long-term investors that can withstand volatility

IMPLEMENTATION: INVESTING STRUCTURE

- **A potential way to invest in CLOs is to do so with a Collateral manager who will invest directly into their own CLOs**
  - Investors can often invest directly into a single CLO via an investment fund managed by the collateral manager. This approach comes with several advantages and Risks

- **Advantages**
  - **Lower fees**: Investing directly into the equity tranche of a CLO via a collateral manager can often come with lower fees, fee rebates, and occasionally fee sharing arrangements
  - **Potential Alignment of interest**: When taking the majority position of an equity tranche of a CLO via a collateral manager, investors can sometimes (but not always) persuade the collateral manager to take a minority position alongside the investor, increasing the alignment of interest

- **Disadvantages**
  - **Conflicts of interest**: A CLO manager that also manages a Fund that holds the majority equity position could be easily influenced by the continuation of management fee collection versus acting in the best interest of the CLO equity. There is also the concern that large strategic buyers of AAA tranches could influence the manager to delay calling a deal
  - **Covenant negotiation**: Investors in this type of structure have little to no say on the specific covenants of the CLOs. CLO indentures are not standardized and vary by CLO manager and vintage. Typically, provisions that are 'equity friendly' are at direct odds with debt holders. Firms that have locked in majority capital for the equity tranche can be tempted to place debt friendly (equity unfriendly) language in their indentures in order to secure buyers for the AAA, AA and mezzanine tranches
  - **Lack of track record**: Collateral managers that create investment funds designed to take the majority equity tranche of their own CLO often have limited track records

IMPLEMENTATION: INVESTING STRUCTURE

- **Another point of access it to invest with an unaffiliated Investment Manager who will invest in 3rd party CLOs**
  - Investors can also invest across multiple CLOs managed by multiple collateral managers by investing in a commingled fund managed by an unaffiliated investment manager
    - Unaffiliated simply means the Fund will not invest in the primary issuance of their own in-house CLOs
- **Advantages**
  - **Manager diversification**: No single CLO or CLO collateral manager are the same. By investing in a Fund that invests across multiple collateral managers, investors take less manager-specific risk and can build a more diversified portfolio
  - **Vintage diversification**: Performance (and covenants) can vary significantly by vintage year. By diversifying exposure across vintages, investors can reduce the risk of concentrated exposure to underperforming vintages or market-timing risk
  - **Control equity positions**: Rights afforded by control equity positions include ability to refinance, re-price, or call a deal; to negotiate key man departure events; and to invest rescue financing should a manager fail an over collateralization test. Further, control positions in CLO equity typically trade at a premium to minority positions in the same CLO, due to the rights afforded to the control investor.
- **Disadvantages**
  - **No control of underlying loans**: Managers invested in a CLO that it does not also manage do not have direct control of the underlying loan portfolio. Portfolio management decisions are made by the collateral manager
  - **Fees**: Unaffiliated managers pay fees at the CLO level, which are often rebated by a collateral manager when investing directly through an internally managed fund. This can add to the expenses of end investors. However, the optionality for equity holders can compensate for fees, especially when acting in an unconflicted manner

CONSIDERATIONS FOR INVESTING IN CLO EQUITY

- **Funding gap potential**
  - Asset spread tightening, with all else equal, will reduce the residual cash flows available to the equity tranche. Liability spreads are fixed at a CLO's issuance date; however, a widening of liability spreads (particularly AAA tranches) can reduce the residual cash flow available to new issue CLOs.

- **Rising short-term interest rates (capped)**
  - Most (not all) CLO assets (bank loans) exhibit LIBOR floors (ranging from 100 basis points to 120 basis points for new issues). CLO liabilities (debt notes) do not have LIBOR floors. Equity holders currently benefit as much as 400 bps to 500 bps on an annualized basis from the mismatch. As LIBOR rises to the floor level of bank loans, CLO equity returns are negatively impacted. A further rise in LIBOR – past the floor level of bank loans – is generally viewed as a positive as asset spreads will widen and a CLO's liability costs are fixed.

- **Anticipated default and recovery rates**
  - CLO equity is the first loss tranche of a CLO. Defaults and recovery rate given default impact net asset values (NAV) of CLO equity. Asset spreads are typically wide during periods of high defaults and low recoveries. CLO equity within its reinvestment period can benefit from default cycles due to wider asset spreads (and larger funding gap) compensating for loss in principal. Manager selection and vintage diversification can help mitigate these risks.

CONSIDERATIONS FOR INVESTING IN CLO EQUITY (CONT.)

- **Liquidity**
  - CLO equity is not a deeply traded market during times of stress. The larger the concentration in a specific tranche, the more it should be viewed as a hold-to-maturity/hold-to-call type investment.

- **CLO manager selection**
  - CLO manager skill varies considerably from collateral analysis, trading acumen, and structuring capabilities. There is a material difference in the performance of top and bottom quartile managers.

- **Timing of the reinvestment period**
  - Given the fixed liability costs, variable asset spreads, and defined reinvestment period of a CLO combined with cyclical nature of credit, CLO equity performance can vary significantly by vintage. We recommend diversification across vintages to avoid specific long-term timing bets on liability spreads, asset spreads, and credit default cycles.

CLO ANALYSIS

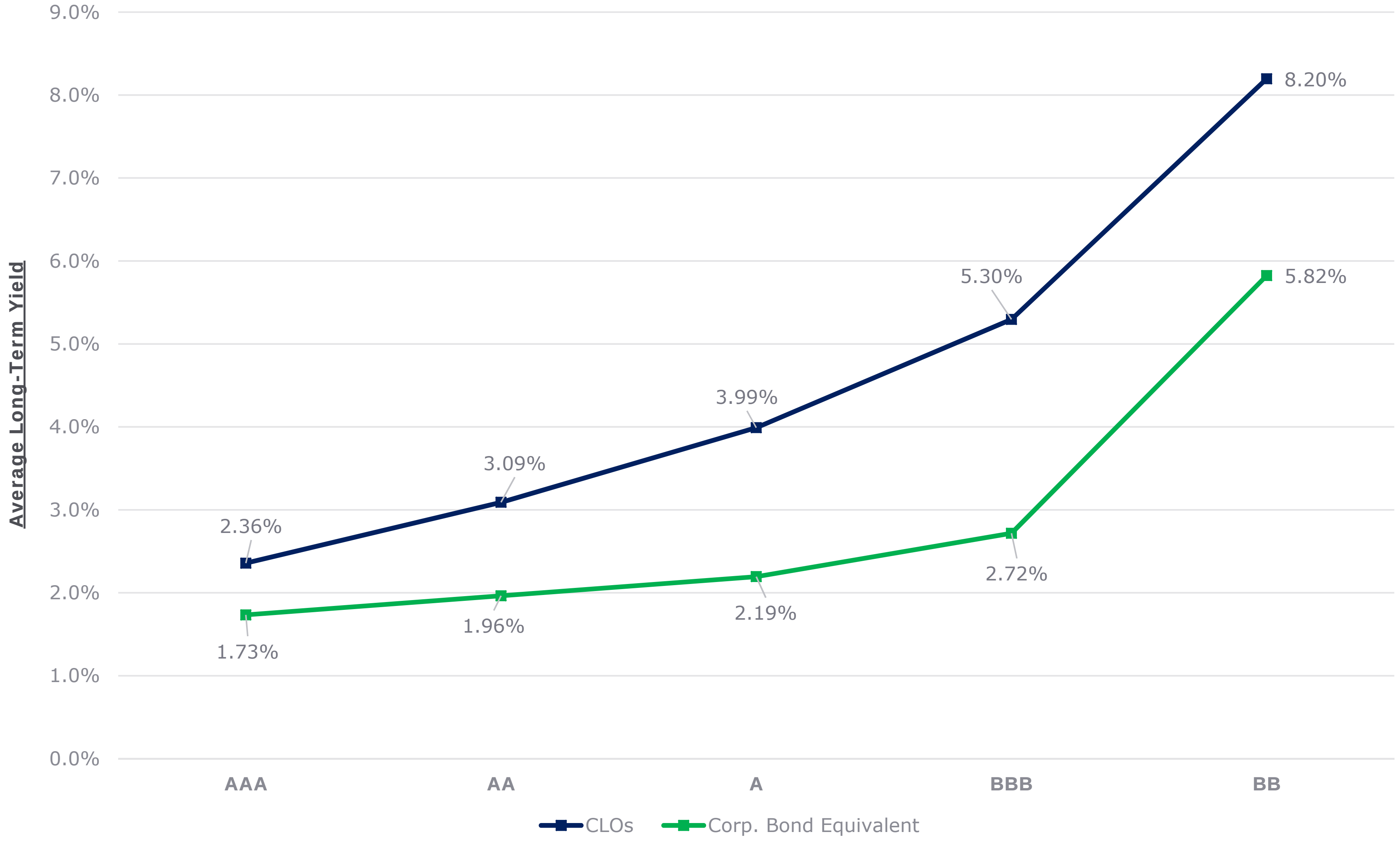
NEPC, LLC

CLO BALANCE SHEET EXAMPLE

Assets	Liabilities
150-300 Broadly Syndicated Bank Loans Floating Rate First Lien Senior Secured >90% of Portfolio Rated BB and B Actively Managed Portfolio Managed to Specific Parameters Monthly Loan-Level Transparency Average Life of Loan Approximately 3 Years	**CLO Senior Tranches** AAA AA A
	CLO Mezzanine Tranches BBB, BB, B
	CLO Equity Unrated, Residual Stake, First Loss Position

Source: JP Morgan, S&P Global

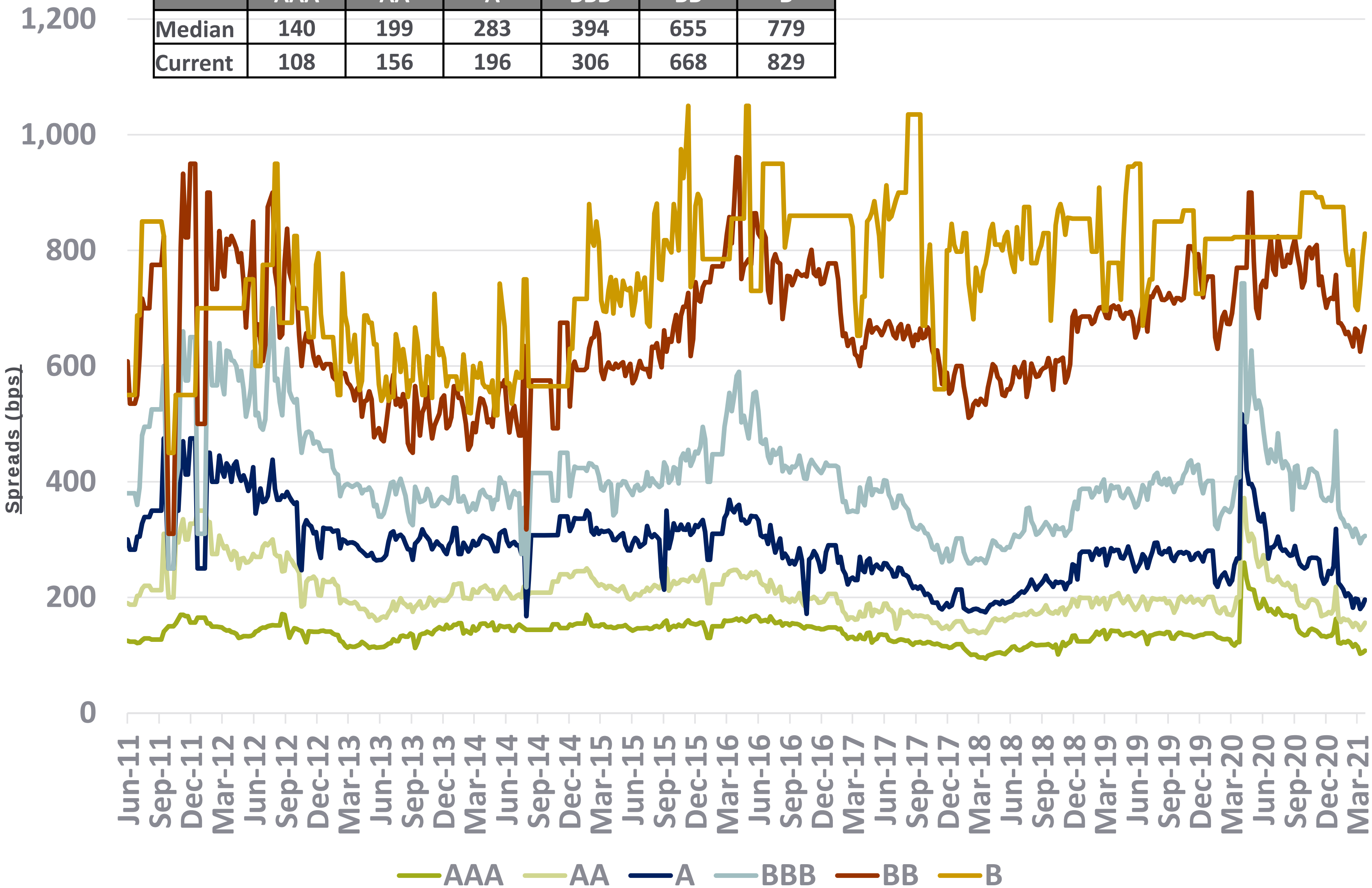
COMPARATIVE LONG-TERM YIELD OF CLOS VS. CORP. BONDS



*Source JP Mprgan Markets DataQuery
**The above analysis dates back to Dec. 2011 and is as of Feb. 2021

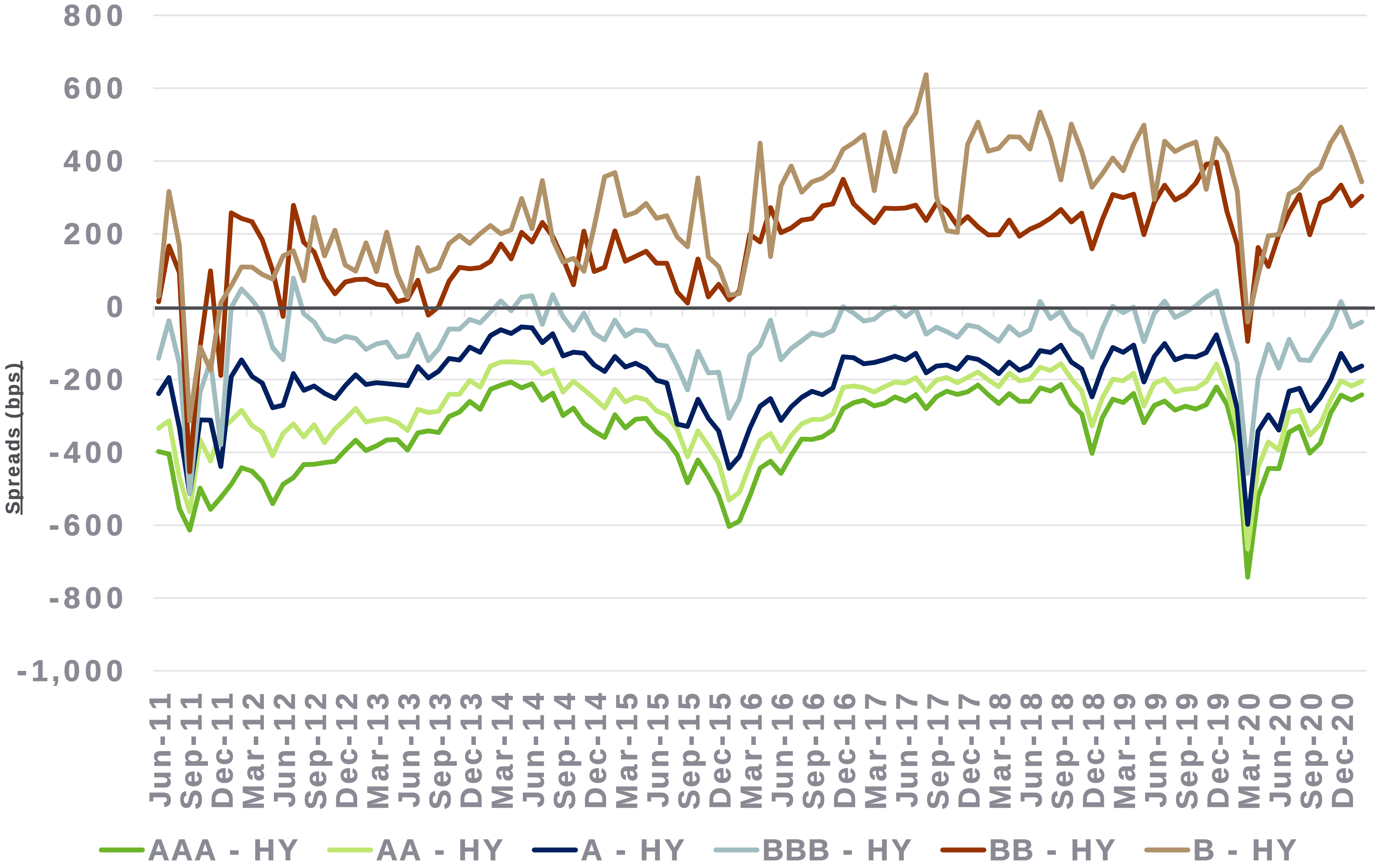
US CLO SPREADS

	AAA	AA	A	BBB	BB	B
Median	140	199	283	394	655	779
Current	108	156	196	306	668	829



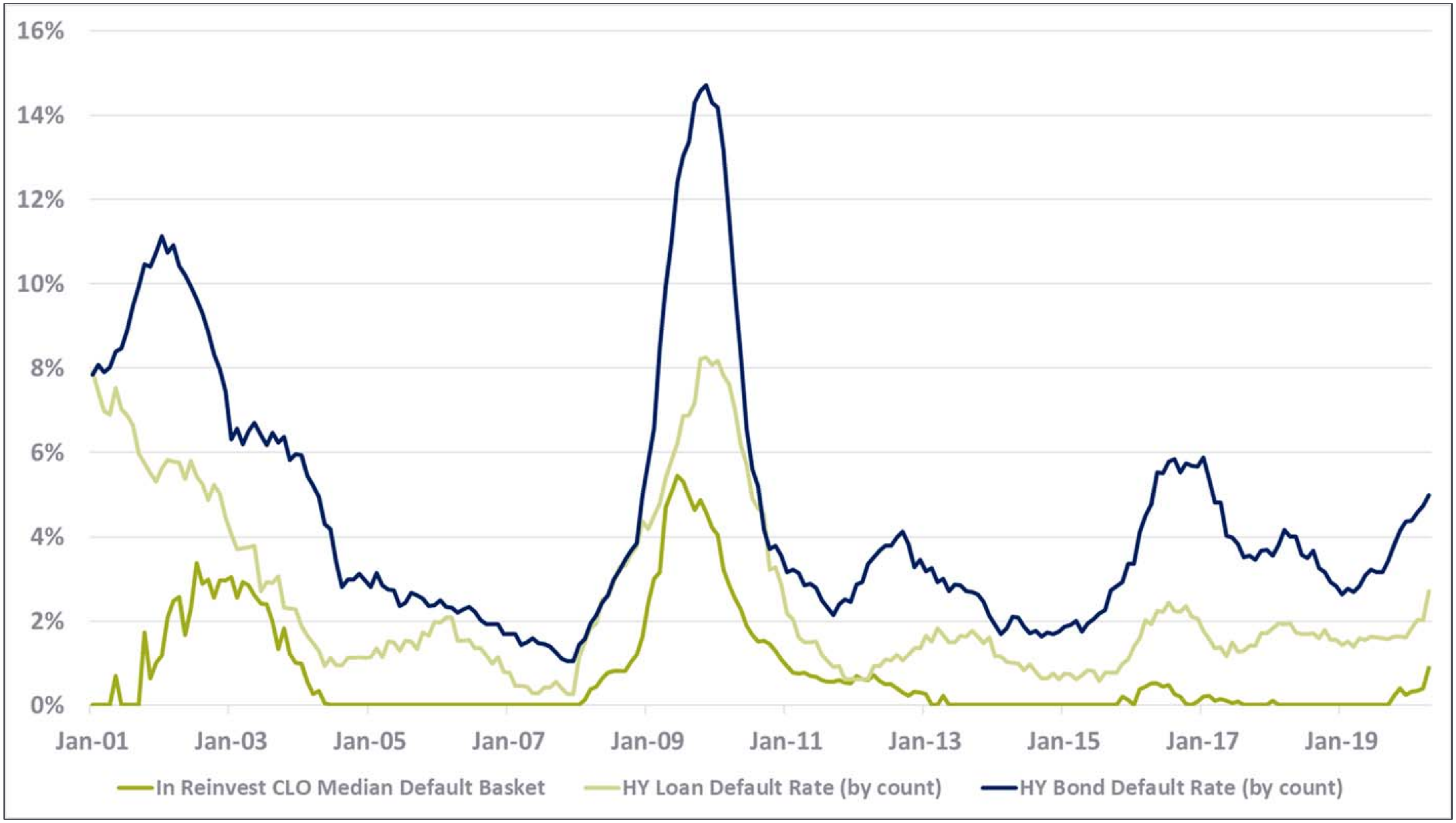
*Source BSL Data

US CLO SPREADS MINUS HIGH YIELD SPREAD



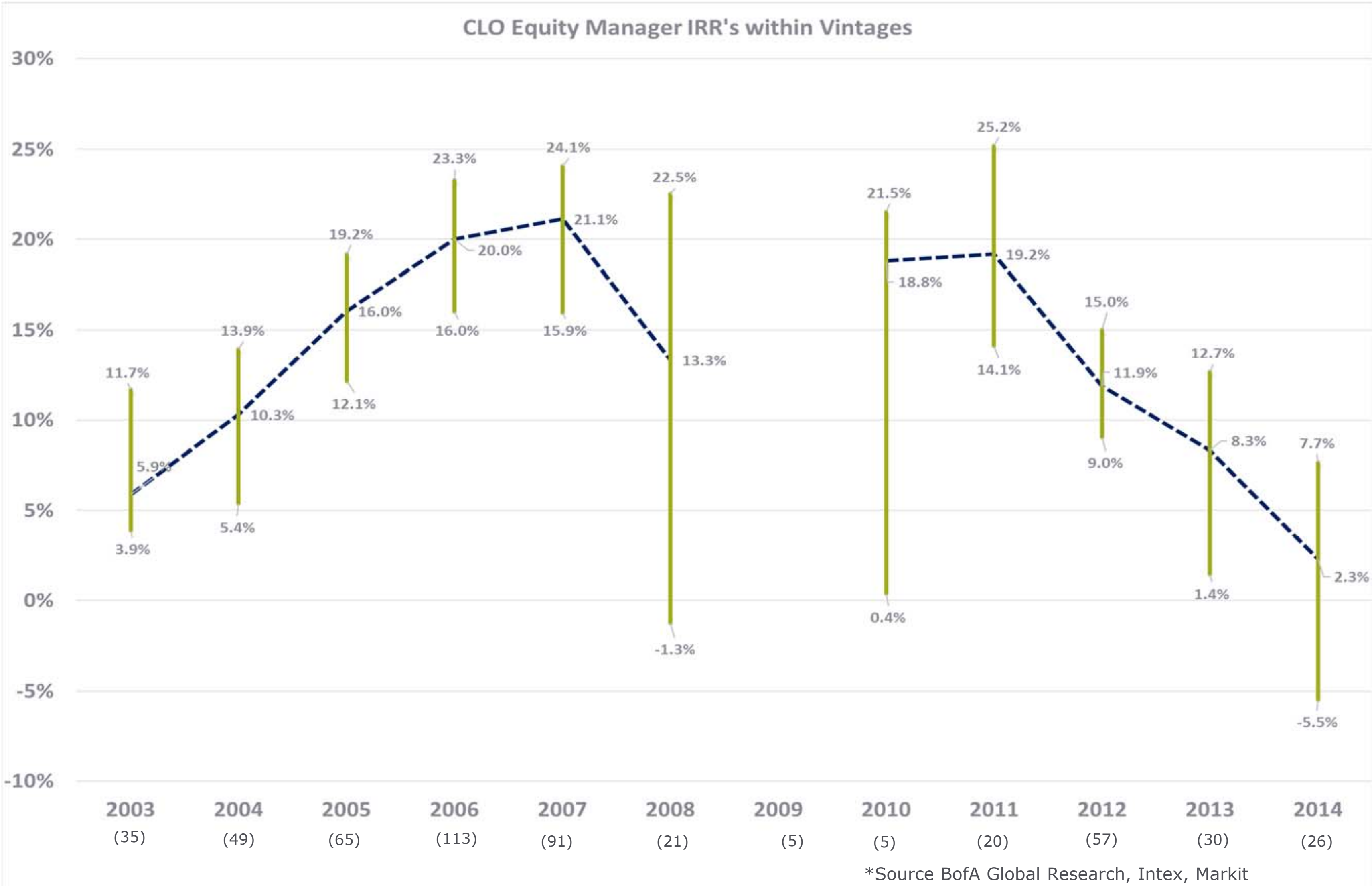
*Source BSL Data

HISTORICAL CLO DEFAULT RATES VS. HIGH YIELD & LEVERAGED LOANS



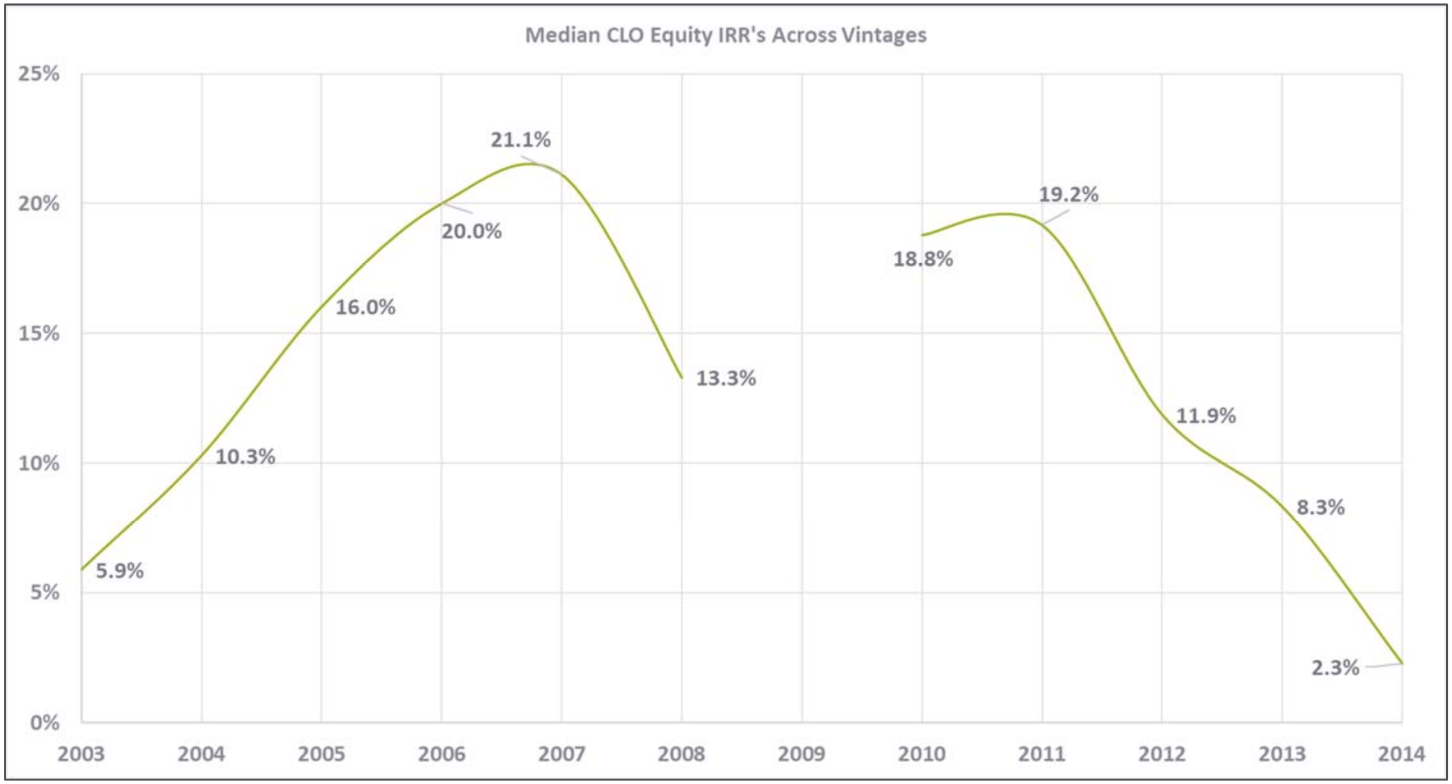
*CLO's historically have exhibited a much lower average default rate than the broader market.
**LCD, Moody's, Intex, Western Asset Management

CLO EQUITY RETURNS: VINTAGE DIVERSIFICATION VS MANAGER SELECTION



*Source BofA Global Research, Intex, Markit
**Analysis as of April 2021
***2009 is excluded given limited issuances of CLOs
****Number of observations in parentheses below vintage year

CLO EQUITY RETURNS: VINTAGE DIVERSIFICATION VS MANAGER SELECTION



Metric	Value	Interpretation
Standard deviation of returns ***across*** vintages**	6.25%	CLO equity performance dispersion attributable to year of issuance
Standard deviation of returns ***within*** vintages***	4.73%	CLO equity performance dispersion attributable to manager
Difference	1.52%	Vintage year has accounted for more return dispersion than manager

*2009 is excluded given limited issuances of CLOs
**Standard deviation of median return for each vintage year is calculated
***The standard deviation between the 25th and 75th percentile returns are calculated

CLO DEBT CALENDAR RETURNS

	Q1 2021	2020	2019	2018	2017
JPM CLOIE AAA	0.49%	2.55%	4.61%	1.66%	2.78%
JPM CLOIE AA	0.95%	2.96%	5.95%	1.02%	3.41%
JPM CLOIE A	1.46%	4.62%	6.71%	-0.07%	4.29%
JPM CLOIE BBB	1.62%	5.48%	8.94%	-0.69%	8.96%
JPM CLOIE BB	2.98%	8.03%	10.85%	0.37%	17.52%
JPM CLOIE B	12.69%	6.22%	4.17%	2.93%	30.64%
S&P 500	6.2%	18.4%	31.5%	-4.4%	21.8%

	2016	2015	2014	2013	2012
JPM CLOIE AAA	3.21%	1.50%	0.72%	1.08%	3.75%
JPM CLOIE AA	5.56%	2.06%	0.09%	2.17%	9.29%
JPM CLOIE A	7.17%	3.08%	0.72%	4.08%	16.97%
JPM CLOIE BBB	12.12%	-0.66%	2.32%	9.39%	23.96%
JPM CLOIE BB	21.86%	-5.65%	1.51%	13.95%	29.03%
JPM CLOIE B	23.74%	-10.75%	0.54%	21.17%	41.11%
S&P 500	12.0%	1.4%	13.7%	32.4%	16.0%

As of March 31, 2021
Source: JPMorgan
*Index inception January 1, 2012

CLO DEBT TRAILING RETURNS

	1-Year	3-Year	5-Year	7-Year	Since Inception*
JPM CLOIE AAA	7.77%	2.88%	2.97%	2.51%	2.41%
JPM CLOIE AA	13.67%	3.39%	3.93%	3.12%	3.58%
JPM CLOIE A	19.59%	4.00%	5.09%	3.95%	5.29%
JPM CLOIE BBB	33.69%	4.78%	8.02%	5.16%	7.50%
JPM CLOIE BB	65.44%	6.85%	12.73%	7.67%	10.40%
JPM CLOIE B	75.44%	8.03%	18.46%	8.97%	13.33%
S&P 500	53.71%	14.58%	14.04%	11.35%	15.58%
LSTA Lev. Loan	20.69%	4.12%	5.28%	3.39%	4.71%
Barclays Agg	0.71%	4.65%	3.10%	3.31%	2.93%

As of March 31, 2021
Source: JPMorgan
*Index inception January 1, 2012

NEXT STEPS

ERSRI NEXT STEPS

- **NEPC recommends that the SIC direct the RI Investment team to narrow its focus on Mezz & Equity implementation**

- **As part of the next steps, the RI Investment team and NEPC will look to complete the following:**
  - Update the IPS accordingly to reflect the new CLO allocation and its preferred implementation
  - Evaluate CLO candidates for consideration including both CLO collateral and investment managers
  - Update the Transition Plan, as necessary, to reflect an efficient and prudent funding of the new CLO allocation

- **Our goal will be to interview 2 CLO candidates at the June 2nd SIC meeting**

APPENDIX

ERSRI ASSET ALLOCATION CHANGES

		Old Target	New Target
Equity	Global Equity	40%	40%
	Public Growth	**40%**	**40%**
	Private Equity	11.25%	12.5%
	Non-Core Real Estate	2.25%	2.5%
	Opp. Private Credit	1.5%	0.0%
	Private Growth	**15%**	**15%**
	TOTAL GROWTH	**55%**	**55%**
Income	Equity Options	2.0%	2.0%
	Liquid Credit	2.8%	3.0%
	EMD (Blended)	2.0%	2.0%
	HY Infrastructure	1.0%	0.0%
	REITs	1.0%	0.0%
	CLOs	0.0%	2.0%
	Private Credit	3.2%	3.0%
	TOTAL INCOME	**12%**	**12%**
Stability	Long Treasuries	5.0%	5.0%
	Systematic	5.0%	5.0%
	CPC	**10%**	**10%**
	Core Real Estate	3.6%	4.0%
	Private Real Assets (ex-Real Estate)	2.4%	4.0%
	TIPS	2.0%	0.0%
	Inflation Protection	**8%**	**8%**
	IG Fixed Income (ex-Treasuries)	6.5%	6.5%
	Absolute Return	6.5%	6.5%
	Strategic Cash	2.0%	2.0%
	Volatility Protection	**15%**	**15%**
	TOTAL STABILITY	**33%**	**33%**
	TOTAL CASH	**0%**	**0%**