



# IPS and Benchmark Updates

Investment Staff | June 2018

# IPS

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- **Revise actuarial return assumption to 7% from 7.5%**
- **Remove legacy asset class IPS info**
  - Equity Hedge Fund IPS
- **Create IPS and establish benchmarks for missing classes**
  - Private Growth
  - Volatility Protection
- **Update target weights**
  - Public Equity moved to 40% from 38%
- **Update sub-asset class benchmarks**
  - Liquid Credit BM: 50% BoA US HY + 50% CS LL (*component of total Plan benchmark approved by SIC vote in September, 2017*)
- **Communicate total Plan benchmark**

# IPS

IPS	IPS Approval Date	Updates Required
GLOBAL PUBLIC EQUITY	12/6/2015	Adjust target weights, slightly revise language
PRIVATE GROWTH  -Private Equity -Non-Core RE -Opportunistic Private Credit	N/A	Create new draft using material from previously approved Private Assets IPS, add benchmarks, adjust target weights
INCOME  -MLPs -REITs -Liquid Credit -Private Credit	7/10/2017	Adjust Liquid Credit BM
CPC  -CPC Trend -CPC Long Duration -CPC Platform Manager	N/A  5/24/2017 1/25/2017 5/24/2017	Consolidate CPC Trend, LD, and Platform Manager IPS, move general CPC and rebalancing paragraphs to header of overall CPC IPS

IPS	IPS Approval Date	Updates Required
INFLATION PROTECTION  -Core RE -Private Infrastructure -TIPS -Natural Resources	8/23/2017	Adjust language (e.g. change "GILBS" to Public Inflation-Indexed Government Bonds)
VOLATILITY PROTECTION  -Core Fixed Income -Absolute Return -Cash	N/A  5/27/2015 1/27/2016 1/25/2017	Consolidate Core FI, Abs Return and Cash IPS, create header paragraph outlining volatility protection class objective and target allocation  Remove underlying manager target %s and adjust overall target allocation Remove hedge funds, add Equity L/S and Event-Driven strategies, adjust target allocation weight
TOTAL PLAN BENCHMARK	N/A	Create chart with components and weights, per SIC vote

\*in addition to other minor adjustments

# Benchmark

- The following graphic was presented and approved during the September 27, 2017 SIC meeting
- The new benchmark was implemented on October 1, 2017

## Current Benchmark Weightings

### Equities 58.5%

44.5% MSCI ACWI Net  
8.0% HFRI Equity Hedge Index  
7.0% ILPA All Funds Index

### Fixed Income 24.0%

15% Barclays Agg  
5.0% Credit Aggregate Custom  
(30% BOA BB-B 1-3 Yr/35% CS Inst Loans/35% JPM BB/B Lev Loan)  
4.0% Barclays 1-10 Year TIPs Index

### Other 18.5%

1.5% Alerian MLP Total Return  
5% NFI-ODCE Index  
3.0% BOA ML 3 mo Tbill  
7.0% HFRI FOF Composite

## Long-Run Strategic Benchmark Weightings

### Equity 51%

40% MSCI ACWI Net  
11% ILPA All Funds Index

### Fixed Income 23%

11.5% Barclays Agg  
1% Barclays 1-10 Year TIPs Index  
4% Barclays Long Duration US Treasury Index  
3.5% Liquid Credit Custom (50% BoA HY/50% CS LL)  
3% S&P LSTA Lev Loans + 3%

### Other 26%

2.5% ODCE + 2.5%  
1.5% ILPA/Cambridge Distressed Securities Index  
6.5% HFRI FOF Composite  
3.0% BofA Merrill Lynch US T-Notes 0-1 Yr  
4% NFI-ODCE Index  
2% CPI + 4%  
1.5% Alerian MLP Total Return  
4% CS Managed Futures 18% Vol Index  
1% Commodities

# Benchmark

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- **Adjust weights/components of asset class level benchmarks to ensure consistency**
  - Weighting in asset class benchmark should roll-up to weights approved in total Plan benchmark (e.g. Income Class IPS states, “The Income Class Portfolio benchmark will be a weighted average of the individual assets’ benchmarks.”)
- **Create Private Growth and Volatility Protection asset class benchmarks**
- **Create Growth and Stability bucket benchmarks**
- **Modify Liquid Credit benchmark to reflect 50% BofA US HY Index + 50% Credit Suisse Leveraged Loan Index**
- **Adjust temporary monthly placeholders that are used for benchmark components that are reported on a quarterly basis**
  - Must reflect updated SAA

# Benchmarks (Oct '17 – Present)

Aggregate Asset Class	Sub-Asset Class	% Weight Asset Class Benchmark (OLD)	Asset Class Benchmark Component (OLD)
Total Public Growth	Public Equity	100.00%	MSCI ACWI Net
	PE		
Total Private Growth	Non-core RE		
	Opp Private Credit		
Income	HY Infra	18.75%	Alerian MLP Index
	Liquid Credit	43.75%	30% BofA 1-3 BB-B HY + 35% CS Leveraged Loan + 35% JPM Leveraged Loan BB-B
	Private Credit	37.50%	S&P LSTA Leveraged Loan + 3%
CPC	Treasury Duration	50.00%	Barclays US Treasury Long Term
	Systematic Trend	50.00%	Credit Suisse Liquid Alt Beta 18 Vol
Inflation Protection	Core RE	46.25%	NFI ODCE
	Private Infra <sup>1</sup>	28.75%	CPI + 4% 1 Month Lag
	TIPs	25.00%	Bloomberg Barclays 1-10 Year TIPs
	Nat' Resources		
Volatility Protection	IG Fixed Income Absolute Return		
	Cash		



% Weight Asset Class Benchmark (NEW)	Asset Class Benchmark Component (NEW)
100.00%	MSCI ACWI Net
73.33%	ILPA All Funds 1Q Lag
16.67%	NFI ODCE + 2.5% <sup>2</sup>
10.00%	ILPA Distressed 1Q Lag <sup>2</sup>
18.75%	Alerian MLP Index
43.75%	50% Bank of America US HY Index + 50% Credit Suisse Leveraged Loan Index
37.50%	S&P LSTA Leveraged Loan + 3%
50.00%	Barclays US Treasury Long Term
50.00%	Credit Suisse Liquid Alt Beta 18 Vol
50.00%	NFI ODCE
25.00%	CPI + 4% 1 Month Lag
12.50%	Bloomberg Barclays 1-10 Year TIPs
12.50%	Bloomberg Barclays Commodity Index
54.76%	Bloomberg Barclays US Aggregate
30.95%	HFRI Fund of Funds Index
14.29%	BofA US Treasury Notes 0-1 Year US Treasury

Total Plan Benchmark	
40.00%	MSCI ACWI Net
11.00%	ILPA All Funds 1Q Lag <sup>2</sup>
2.50%	NFI ODCE + 2.5% <sup>2</sup>
1.50%	ILPA Distressed 1Q Lag <sup>2</sup>
1.50%	Alerian MLP Index
3.50%	50% Bank of America US HY Index + 50% Credit Suisse Leveraged Loan Index
3.00%	S&P LSTA Leveraged Loan + 3%
4.00%	Barclays US Treasury Long Term
4.00%	Credit Suisse Liquid Alt Beta 18 Vol
4.00%	NFI ODCE <sup>2</sup>
2.00%	CPI + 4% 1 Month Lag
1.00%	Bloomberg Barclays 1-10 Year TIPs
1.00%	Bloomberg Barclays Commodity Index
11.50%	Bloomberg Barclays US Aggregate
6.50%	HFRI Fund of Funds Index
3.00%	BofA US Treasury Notes 0-1 Year US Treasury

## Adjustments

<sup>1</sup> The individual Private Infra benchmark (CPI + 4%) should be lagged 1 month in order to be consistent with the Aggregate Asset Class and Total Plan benchmarks (backfill through Jul'17)

<sup>2</sup> Benchmarks results are reported on a quarterly basis. Temporary intra-quarter placeholders are used. These temporary placeholders need to be adjusted to account for updated SAA, net of fee returns

# Benchmarks (Jul '17 - Sep '17)

Aggregate Asset Class	Sub-Asset Class	% Weight Asset Class Benchmark	Asset Class Benchmark Component
Total Public Growth	Public Equity	100.00%	MSCI ACWI Net
Total Private Growth	PE		
	Non-core RE		
	Opp Private Credit		
Income	HY Infra	18.75%	Alerian MLP Index
	Liquid Credit	43.75%	50% Bank of America US HY Index + 50% Credit Suisse Leveraged Loan Index
	Private Credit	37.50%	S&P LSTA Leveraged Loan + 3%
CPC	Treasury Duration	50.00%	Barclays US Treasury Long Term
	Systematic Trend	50.00%	Credit Suisse Liquid Alt Beta 18 Vol
Inflation Protection	Core RE	46.25%	NFI ODCE
	Private Infra <sup>1</sup>	28.75%	CPI + 4% 1 Month Lag
	TIPs	25.00%	Bloomberg Barclays 1-10 Year TIPs
	Nat' Resources		
Volatility Protection	IG Fixed Income		
	Absolute Return		
	Cash		

<sup>1</sup> The individual Private Infra benchmark (CPI + 4%) should be lagged 1 month in order to be consistent with the Aggregate Asset Class and Total Plan benchmarks (backfill through Jul'17)

## Adjustments

Total Plan Benchmark	
44.50%	MSCI ACWI Net
7.00%	ILPA All Funds 1Q Lag
1.50%	Alerian MLP Index
5.00%	50% Bank of America US HY Index + 50% Credit Suisse Leveraged Loan Index
5.00%	NFI ODCE
4.00%	Bloomberg Barclays 1-10 Year TIPs
15.00%	Bloomberg Barclays US Aggregate
7.00%	HFRI Fund of Funds Index
3.00%	BofA US Treasury Notes 0-1 Year US Treasury
8.00%	HFRI Equity Hedge Index

- Jul 10, 2017: SIC voted to approve Income Class IPS
  - Liquid Credit benchmark stated as 50% BB HY 2% Issuer Cap + 50% S&P/LSTA Leveraged Loan Index
- Sep 27, 2017: SIC voted to approve Total Plan benchmark
  - Liquid Credit component stated as 50% BofA HY Index + 50% Credit Suisse Leveraged Loan Index
- The Liquid Credit component of the Jul'17-Sep'17 Income Class benchmark needs to be adjusted to reflect 50% BofA US HY Index + 50% Credit Suisse Leveraged Loan Index**

# Summary of Benchmark Adjustments

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## TOTAL PLAN BENCHMARK

- | Replace ILPA All Fds Index with **ILPA All Fds Index 1Q Lag BM2<sup>1</sup>**
- | Replace NFI ODCE Index with **NFI ODCE Index BM2<sup>1</sup>**
- | Replace “Credit Aggregate” with **50% BofAML US HY/50% CS Leveraged Loan**

## INCOME BENCHMARK

- | Replace “Credit Aggregate” with **50% BofAML US HY/50% CS Leveraged Loan**

## INFLATION PROTECTION BENCHMARK

- | Adjust weights to match Total Plan Benchmark

## PRIVATE INFRA ASSET CLASS BENCHMARK

- | Replace CPI + 4% with **CPI + 4% 1mo Lag**

## NFI ODCE BM + 2.5%

- | Replace ODCE + 2.5% with **ODCE BM2<sup>1</sup> + 2.5%**

## INTRA-QUARTER PLACEHOLDERS

- | Placeholders for ILPA All Fds Index 1Q Lag BM2<sup>1</sup>, ILPA Distressed BM 1Q Lag, NFI ODCE Index BM2<sup>1</sup>, should be changed from Gross to **Net of fees**

## BUCKET AND CLASS BENCHMARKS

- | Create Benchmarks for the Growth Bucket, Stability Bucket, Private Growth Aggregate Asset Class, and Volatility Protection Aggregate Asset Class

<sup>1</sup> BM2 reflects BNY Mellon terminology, which is used to denote an adjustment to the temporary intra-quarter placeholders used for benchmarks that report on a quarterly or lagged basis. For example, Total RE (old SAA) performance is used as a temporary placeholder for the NFI ODCE Index benchmark during Jan and Feb. The NFI ODCE Index BM2 uses Core RE (new SAA) performance as the Jan and Feb temporary placeholder.