June 24, 2022 03:12 PM GMT

UPDATE

Cross-Asset Dispatches | Global

AGG+ and CORE+ Optimal Fixed Income Portfolios: June 2022

We refresh our AGG+ and CORE+ fixed income optimal portfolios for June. The move in rates coupled with our macro strategists' revised forecasts for US Treasuries means our optimal portfolios focused on the N12M have pared back exposure in UST, and added in Agency MBS.

Revised UST N12M forecasts drive UW on UST within optimal portfolios: Our macro strategists now see US Treasury 10Y yields rising to around 3.5% at end-2022, with the front end cheapening most from now until 2Q23. These new forecasts form new assumptions for our AGG+ and CORE+ optimal portfolios, and tilt allocation away from US Treasuries.

AGG+ and CORE+ N12M portfolios: Based on our strategists' N12M forecasts, our optimal portfolios maximising total returns subject to vol have a preference for corporates and Agency MBS over US Treasuries, with allocation to the latter swinging from OW last month to UW this month.

AGG+ and CORE+ LR portfolios: Based on the cross-asset team's long-term capital markets assumptions, our optimal portfolios continue to like taking duration and vol exposure in corporate credit (IG and HY), while being underweight in USTs. Allocation for the LR optimal portfolios is little changed from a month ago.

Close to home for fixed income portfolios: Similar to the last AGG+ and CORE+ update, our optimal portfolios have risk profiles close to their benchmarks across semi deviation, max drawdown, etc., suggesting that N12M and long-run expected risk/reward don't justify taking huge bets in vol and duration.

For more on the methodology behind the AGG+ and CORE+ framework, see Cross-Asset Dispatches: Optimal Fixed Income Portfolios, April 24, 2022.

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AGG+ Optimal Portfolios

AGG+ N12M vol target portfolio

Targeting same volatility as US AGG while maximising N12M expected returns.

Portfolio preference: IG corporates and MBS > Treasuries.

The AGG+ N12M optimal portfolio is UW Treasuries, OW Agency MBS, OW IG corporates. Treasuries swing from OW last month to UW this month, driven by our macro strategy team's new forecasts.

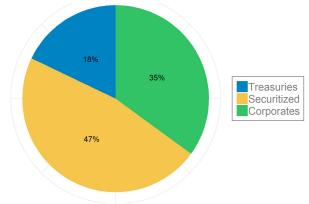
The portfolio has slightly higher duration than the benchmark, driven by an OW in longer-dated IG corporates. AGG+ N12M prefers taking risk in IG 10Y+ instead of US Treasuries. The risk profile of AGG+ N12M is similar to the benchmark across most risk metrics like semi deviation, max drawdown, etc.

Exhibit 1: AGG+ N12M vol target portfolio allocation

AGG+ N12M Portfolio	MO		Neu		WO
TREASURIES		0	0	0	
MBS		0	0	0	
CORPORATE		0	0	0	

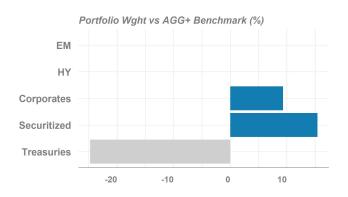
Source: Morgan Stanley Research

Exhibit 2: AGG+ N12M vol target portfolio breakdown by broad asset



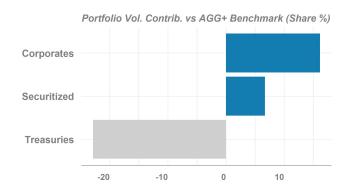
Source: Morgan Stanley Research

Exhibit 3: AGG+ N12M vol target portfolio weight versus benchmark



Source: Morgan Stanley Research

Exhibit 4: AGG+ N12M vol target portfolio volatility contribution versus benchmark



Source: Morgan Stanley Research

Exhibit 5: AGG+ N12M vol target portfolio volatility contribution by asset





Exhibit 6: Summary statistics for AGG+ N12M vol target portfolio

AGG+ N12M Portfolio

Targeting Same Volatility As AGG While Maximizing N12M Expected Returns

Targeting Same Volatility As Ad		Bench.		1M Wght	Neu Neu
LIS CORE FIXED INCOME	AGG+ Wght	Wght 100%	AGG+ Tilt	Chg	5 Ž O
US CORE FIXED INCOME			0.504	0.00-1	
Treasuries	18%	43%	-25%	-28%	
1-3Y	3%	14%	-11%	-22%	
3-7Y	5%	16%	-11%	1%	
7-10Y	4%	4%	-0%	0%	
10-20Y	3%	3%	+0%	-1%	
20Y+	3%	6%	-3%	-5%	
Securitized	47%	32%	+15%	31%	
MBS	45%	30%	+15%	31%	0000
CMBS	2%	2%	+0%	0%	
Corporate	35%	26%	+9%	-3%	0000
1-5Y	10%	9%	+1%	-5%	
5-10Y	10%	7%	+3%	1%	
10Y+	15%	9%	+6%	2%	
1011	1070	0 70	1070	AGG+ 1M	vs Bench
RISK REWARD	AGG+	Bench	Diff	Chg	Higher
N12M Exp Rtn (%)	3.9	3.5	0.4	3.0	
LR Exp Rtn (%)	4.5	4.2	0.2	0.7	
Risk-free Rtn (%)	2.8	2.8	-	n/a	
XS Rtn (bp)	109	67	42	304	0000
10Y Vol (%)	3.9	3.9	0.0	0.0	0 0 0 0
Exp Sharpe	1.0	0.9	0.1	0.8	Ŏ Ŏ Ō Ŏ Ŏ
Historical Sharpe	0.5	0.5	0.1	0.0	O O O O
Exp Sortino	1.3	1.2	0.1	1.0	
Historical Sortino	0.7	0.6	0.0	0.0	0000
RISK PROFILE					Riskier
Downside Deviation	2.8	2.6	0.2	0.0	
Semi Deviation	3.1	2.9	0.2	0.0	00000
Max Drawdown	12.3	12.2	0.1	-0.1	0000
Historical VaR	-6.8	-5.7	-1.1	-0.6	0 0 0 0
Historical CVaR	-9.8	-9.2	-0.6	-0.4	0 0 0 0
PORTFOLIO METRICS					Higher
YTW	4.1	3.8	0.3	n/a	
OAS	0.8	0.6	0	n/a	0000
MDur	7.2	6.5	0.7	n/a	00000
MTY	10.0	8.7	1.3	n/a	00000
Rtg	AA3	AA2	n/a	n/a	
CORRELATION & BETA					Higher
Correl. vs AGG+	1.0	1.0	0.0	0.0	\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc
Correl. vs UST 10Y	0.8	0.9	-0.1	0.0	
Beta vs AGG+	1.0	1.0	0.0	0.0	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$
Beta vs UST 10Y	0.5	0.6	0.0	0.0	



AGG+ LR vol target portfolio

Targeting same volatility as US AGG while maximising long-run expected returns.

Portfolio preference: IG corporates and MBS > Treasuries.

The AGG+ LR optimal portfolio is OW Agency MBS and IG corporates, and UW Treasuries. The portfolio has added exposure in short-dated IG corporates, and pared some exposure in Agency MBS.

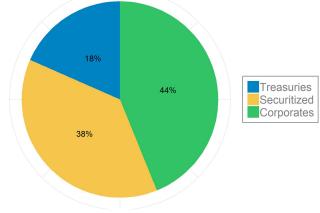
The portfolio has similar duration to the benchmark, mostly via an OW in long-dated IG corporates and UW in long-end US Treasuries. The AGG+ LR portfolio prefers taking vol exposure in IG corporate credit and is underweight vol in UST. The risk profile of the AGG+ LR portfolio is roughly similar to the benchmark across most risk metrics like semi deviation, max drawdown, etc.

Exhibit 7: AGG+ LR vol target portfolio allocation

AGG+ LR Portfolio	MO		Nen		WO
TREASURIES		0	0	0	
MBS		0	0	0	
CORPORATE		0	0	0	

Source: Morgan Stanley Research

Exhibit 8: AGG+ LR vol target portfolio breakdown by broad asset



Source: Morgan Stanley Research

Exhibit 9: AGG+ LR vol target portfolio weight versus benchmark



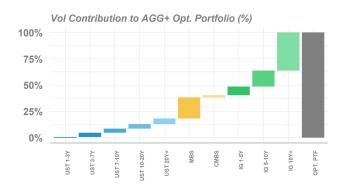
Source: Morgan Stanley Research

Exhibit 10: AGG+ LR vol target portfolio volatility contribution versus benchmark



Source: Morgan Stanley Research

Exhibit 11: AGG+ LR vol target portfolio volatility contribution by asset



UPDATE

Exhibit 12: Summary statistics for AGG+ LR vol target portfolio

AGG+ LR Portfolio

Targeting Same Volatility As AGG While Maximizing LR Expected Returns

	Bench.		1M Waht		_		
AGG+ Wght	Wght	AGG+ Tilt	Chg	3	Ne		NO.
100%	100%				0	0	0
18%	43%	-24%	2%		00		
4%	14%	-11%	1%		00	0	
7%	16%	-9%	-1%		\circ	0	•
3%	4%	-1%	0%		\circ	0	•
3%	3%	-0%	1%	•	0	0	
2%	6%	-3%	0%		• 0	0	•
38%	32%	+6%	-7%		00	0	
35%	30%	+6%	-7%		00	0	
3%	2%	+0%	0%		0	0	•
44%	26%	+18%	5%	0	00	0	
16%	9%	+7%	6%	0	0 0	Õ	
12%	7%	+5%	0%	Ó	0 0	•	0
		+6%		Ŏ	$\tilde{0}$	Ö	
			AGG+ 1M		vs B	ench	
AGG+	Bench	Diff	Chg				her
3.9	3.5	0.4	3.2			0	
4.5	4.2	0.3	0.5	Ō	00	0	
2.8	2.8	-	n/a				
105	67	37	325	0	00		0
3.9	3.9	0.0	0.0	0	0	0	0
1.0	0.9	0.1	0.8			0	0
0.5	0.5	0.1	0.0	\circ		\circ	0
				0	0	0	0
0.7	0.6	0.1	0.0			\bigcirc	\bigcirc
0.0	0.0	0.0	0.0			Ris	kier
				\mathbb{Q}		$\frac{1}{2}$	$\stackrel{\bigcirc}{\sim}$
						9	\bigcirc
				\mathbb{R}^{2}		$\stackrel{\bigcirc}{\sim}$	\mathbb{R}
						0	9
-10.0	-9.2	-0.8	0.1				\bigcirc
4.4		0.0	- 1-			Hig	her
				\mathbb{R}^{2}			\mathbb{R}
				\mathbb{H}		\mathbb{R}	H
				\mathbb{R}	56	=	H
7,710	7 1/ 1/2	180	17/4			Hig	her
1.0	1.0	0.0	0.0				0
0.8	0.9	-0.1	0.0	ŏ	ŏŏ	ŏ	ŏ
0.0	0.0						_
1.0	1.0	0.0	0.0	Ŏ	0	Ŏ	
	AGG+ Wght 100% 18% 4% 7% 3% 3% 2% 38% 35% 3% 44% 16% 12% 16% 16% AGG+ 3.9 4.5 2.8 105 3.9 1.0 0.5 1.3 0.7 2.8 3.1 12.1 -6.9 -10.0 4.1 0.9 6.9 9.6 AA3	AGG+ Wght Bench. Wght 100% 100% 18% 43% 4% 14% 7% 16% 3% 3% 2% 6% 38% 32% 35% 30% 3% 2% 44% 26% 16% 9% 12% 7% 16% 9% AGG+ Bench 3.9 3.5 4.5 4.2 2.8 2.8 105 67 3.9 3.9 1.0 0.9 0.5 0.5 1.3 1.2 0.7 0.6 2.8 2.6 3.1 2.9 12.1 12.2 -6.9 -5.7 -10.0 -9.2 4.1 3.8 0.9 0.6 6.9 6.5 9.6 8.7	AGG+ Wght Wght AGG+ Tilt 100% 100% 18% 43% -24% 4% 14% -11% 7% 16% -9% 3% 4% -1% 3% 3% -0% 2% 6% -3% 38% 32% +6% 35% 30% +6% 3% 2% +0% 44% 26% +18% 16% 9% +7% 12% 7% +5% 16% 9% +6% 3.9 3.5 0.4 4.5 4.2 0.3 2.8 2.8 - 105 67 37 3.9 3.9 0.0 1.0 0.9 0.1 0.5 0.5 0.1 1.3 1.2 0.0 0.7 0.6 0.1 2.8 2.6 0.2	Bench Wight AGG+ Tilt Chg	Bench Wght Wght AGG+ Tilt Chg	AGG+ Wght Bench. Wght AGG+ Tilt 1M Wght Chg 2 100% 100% 24% 2% 0 0 4% 14% -11% 1% 0 0 3% 4% -1% 0% 0 0 3% 3% -0% 1% 0 0 3% 3% -0% 1% 0 0 38% 32% +6% -7% 0 0 38% 32% +6% -7% 0 0 38% 32% +6% -7% 0 0 35% 30% +6% -7% 0 0 44% 26% +18% 5% 0 0 44% 26% +18% 5% 0 0 12% 7% +5% 0% 0 0 44% 26% +18% 5% 0 0 0 48G+ B	Bench Wght AGG+ Tilt Chg E E E E E E E E E

As-Of Date: 2022-06-24



CORE+ Optimal Portfolios

CORE+ N12M vol target portfolio

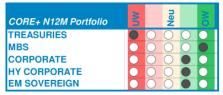
Targeting same volatility as CORE+ benchmark while maximising N12M expected returns.

Portfolio preference: Agency MBS > IG and HY corporates and EM sovereigns > Treasuries.

The CORE+ N12M optimal portfolio is UW US Treasuries, OW MBS, OW IG corporates, OW HY corporates, OW EM sovereigns. Treasuries swing from OW last month to UW this month, driven by our macro strategy team's new forecasts.

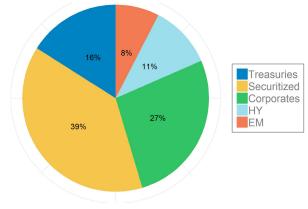
The portfolio has similar duration to the benchmark. For portfolio volatility CORE+ N12M prefers taking risk in IG, HY and EM. The risk profile of CORE+ N12M is similar to the CORE+ benchmark across most risk metrics like semi deviation, max drawdown, etc.

Exhibit 13: CORE+ N12M vol target portfolio allocation



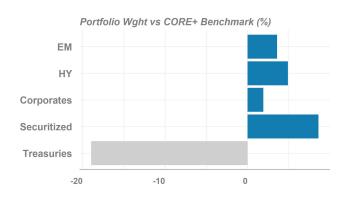
Source: Morgan Stanley Research

Exhibit 14: CORE+ N12M vol target portfolio breakdown by broad asset



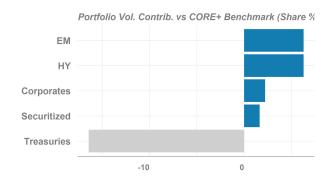
Source: Morgan Stanley Research

Exhibit 15: CORE+ N12M vol target portfolio weight versus benchmark



Source: Morgan Stanley Research

Exhibit 16: CORE+ N12M vol target portfolio volatility contribution versus benchmark



Source: Morgan Stanley Research

Exhibit 17: CORE+ N12M vol target portfolio volatility contribution by asset

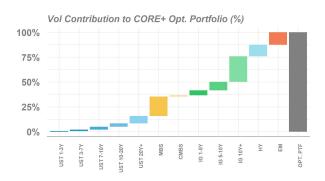




Exhibit 18: Summary statistics for CORE+ N12M vol target portfolio

CORE+ N12M Portfolio

Targeting Same Volatility As 'Core USD Fixed Income' While Maximizing N12M Expected Returns

	CORE+ Wght	Bench. Wght	CORE+ Tilt	1M Wght Chg	Neu Neu
US CORE FIXED INCOME	100%	100%			
Treasuries	16%	35%	-19%	-19%	0000
1-3Y	5%	12%	-7%	-14%	00000
3-7Y	3%	13%	-10%	-2%	0 0 0 0
7-10Y	3%	3%	-0%	1%	0 0 0 0
10-20Y	2%	2%	+0%	0%	
20Y+	3%	5%	-2%	-3%	
Securitized	39%	30%	+9%	24%	0 0 0
MBS	37%	28%	+9%	25%	0000
CMBS	2%	2%	-0%	-1%	
Corporate	27%	25%	+2%	-6%	
1-5Y	10%	9%	+1%	-4%	
5-10Y	6%	7%	-1%	-2%	
10Y+	11%	9%	+2%	0%	
OTHER FIXED INCOME	18%	10%	+8%		
HY Corporate	11%	6%	+5%	1%	
EM Sovereign	8%	4%	+4%	0%	
3				CORE+ 1M	vs Bench
RISK REWARD	CORE+	Bench	Diff	Chg	Higher
N12M Exp Rtn (%)	5.2	4.3	0,9	3.4	
LR Exp Rtn (%)	5.0	4.6	0.4	0.6	
Risk-free Rtn (%)	2.8		0.4		
XS Rtn (bp)	240	<i>2.8</i> 149	91	n/a 337	
		149		337	
10V Val (0/.)	2.0	2.0	0.0	0.0	
10Y Vol (%)	3.9	3.9	0.0	0.0	
Exp Sharpe	1.3	1.1	0.2	0.9	
Exp Sharpe Historical Sharpe	1.3 0.6	1.1 0.5	0.2 0.1	0.9 0.0	0000
Exp Sharpe Historical Sharpe Exp Sortino	1.3 0.6 1.6	1.1 0.5 1.4	0.2 0.1 0.2	0.9 0.0 1.1	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino	1.3 0.6	1.1 0.5	0.2 0.1	0.9 0.0	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE	1.3 0.6 1.6 0.8	1.1 0.5 1.4 0.7	0.2 0.1 0.2 0.1	0.9 0.0 1.1 n/a	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation	1.3 0.6 1.6 0.8	1.1 0.5 1.4 0.7	0.2 0.1 0.2 0.1	0.9 0.0 1.1 n/a	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation	1.3 0.6 1.6 0.8 2.9 3.2	1.1 0.5 1.4 0.7 2.7 3.0	0.2 0.1 0.2 0.1 0.2 0.2	0.9 0.0 1.1 n/a n/a n/a	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown	1.3 0.6 1.6 0.8 2.9 3.2 11.5	1.1 0.5 1.4 0.7 2.7 3.0 11.5	0.2 0.1 0.2 0.1 0.2 0.2 0.2 0.0	0.9 0.0 1.1 n/a n/a n/a 0.3	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8	0.2 0.1 0.2 0.1 0.2 0.2 0.2 0.0 -0.5	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR	1.3 0.6 1.6 0.8 2.9 3.2 11.5	1.1 0.5 1.4 0.7 2.7 3.0 11.5	0.2 0.1 0.2 0.1 0.2 0.2 0.2 0.0	0.9 0.0 1.1 n/a n/a n/a 0.3	O O O O O O O O O O
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1	O O O O O O O O O O
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS YTW	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1	Riskie
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS YTW OAS	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5 4.3 1.0	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1 n/a n/a	Riskie
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS YTW OAS MDur	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5 4.8 1.5 6.8	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5 4.3 1.0 6.5	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0 0.5 1 0.3	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1 n/a n/a	Riskie
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS YTW OAS MDur MTY	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5 4.8 1.5 6.8 9.7	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5 4.3 1.0 6.5 8.9	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0 0.5 1 0.3 0.8	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1 n/a n/a n/a	Riskie
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS YTW OAS MDur MTY Rtg	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5 4.8 1.5 6.8	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5 4.3 1.0 6.5	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0 0.5 1 0.3	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1 n/a n/a	O
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Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS YTW OAS MDur MTY Rtg CORRELATION & BETA Correl. vs CORE+ Correl. vs UST 10Y	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5 4.8 1.5 6.8 9.7 A1	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5 4.3 1.0 6.5 8.9 AA3	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0 0.5 1 0.3 0.8 n/a 0.0 -0.1	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1 n/a n/a n/a n/a 0.0 0.0 0.0	
Exp Sharpe Historical Sharpe Exp Sortino Historical Sortino RISK PROFILE Downside Deviation Semi Deviation Max Drawdown Historical VaR Historical CVaR PORTFOLIO METRICS YTW OAS MDur MTY Rtg CORRELATION & BETA Correl. vs CORE+	1.3 0.6 1.6 0.8 2.9 3.2 11.5 -7.2 -10.5 4.8 1.5 6.8 9.7 A1	1.1 0.5 1.4 0.7 2.7 3.0 11.5 -6.8 -9.5 4.3 1.0 6.5 8.9 AA3	0.2 0.1 0.2 0.1 0.2 0.2 0.0 -0.5 -1.0 0.5 1 0.3 0.8 n/a	0.9 0.0 1.1 n/a n/a n/a 0.3 -0.2 -0.1 n/a n/a n/a n/a n/a n/a n/a n/	Riskiel

As-Of Date: 2022-06-24



CORE+ LR vol target portfolio

Targeting same volatility as CORE+ benchmark while maximising long-run expected returns.

Portfolio preference: IG corporates > HY corporates and EM sovereigns > Agency MBS > Treasuries.

The CORE+ LR optimal portfolio is UW UST, EW MBS, OW IG corporates, OW HY corporates, OW EM sovereigns. Portfolio has added exposure in IG corporates, and pared some exposure in Agency MBS.

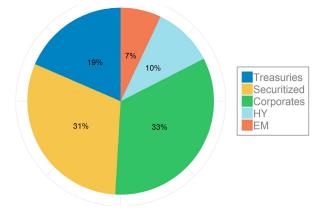
The portfolio has similar duration as the benchmark. For portfolio volatility the CORE+ LR portfolio prefers taking vol exposure in long-end IG corporates, HY corporates and EM sovereigns. The risk profile of the CORE+ LR portfolio is similar to the CORE+ benchmark across most risk metrics like semi deviation, max drawdown, etc.

Exhibit 19: CORE+ LR vol target portfolio allocation

CORE+ LR Portfolio	MO		Nen		WO
TREASURIES		0	0	0	
MBS		0		0	
CORPORATE		0	0	0	
HY CORPORATE		0	0		
EM SOVEREIGN		0	0		

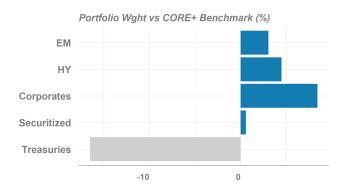
Source: Morgan Stanley Research

Exhibit 20: CORE+ LR vol target portfolio breakdown by broad asset



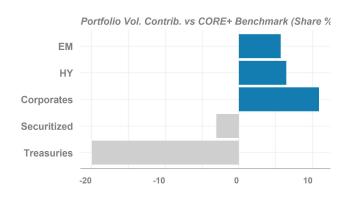
Source: Morgan Stanley Research

Exhibit 21: CORE+ LR vol target portfolio weight versus benchmark



Source: Morgan Stanley Research

Exhibit 22: CORE+ LR vol target portfolio volatility contribution versus benchmark



Source: Morgan Stanley Research

Exhibit 23: CORE+ LR vol target portfolio volatility contribution by asset

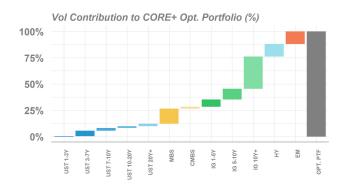




Exhibit 24: Summary statistics for CORE+ LR vol target portfolio

CORE+ LR Portfolio

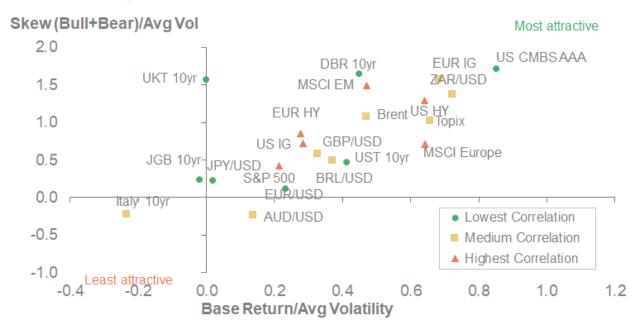
Targeting Same Volatility As 'Core USD Fixed Income' While Maximizing LR Expected Returns

	CORE+ Wght	Bench. Wght	CORE+ Tilt	1M Wght Chg	UW/ Neu
JS CORE FIXED INCOME	100%	100%	CONET TIK	Ong	
Treasuries	19%	35%	-16%	0%	
1-3Y	3%	12%	-9%	0%	
3-7Y	10%	13%	-3%	1%	0 0 0
7-10Y	3%	3%	-0%	1%	
10-20Y	1%	2%	-1%	-1%	
20Y+	1%	5%	-4%	-2%	
Securitized	31%	30%	+1%	-3%	
MBS	28%	28%	+0%	-3%	
CMBS	2%	2%	+0%	0%	
Corporate	33%	25%	+8%	4%	0000
1-5Y	13%	9%	+4%	2%	
5-10Y	8%	7%	+1%	0%	0 0 0
10Y+	13%	9%	+4%	2%	
OTHER FIXED INCOME	18%	10%	+8%	-1%	
HY Corporate			+4%		
•	10% 7%	6% 4%		-1% 0%	
EM Sovereign	7%	4%	+3%		
			=	CORE+ 1M	vs Bench
RISK REWARD	CORE+	Bench	Diff	Chg	Higl
N12M Exp Rtn (%)	5.1	4.3	0.8	3.4	
LR Exp Rtn (%)	5.0	4.6	0.4	0.5	
Risk-free Rtn (%)	2.8	2.8	-	n/a	
XS Rtn (bp)	224	149	76	341	0000
10Y Vol (%)	3.9	3.9	0.0	0.0	
Exp Sharpe	1.3	1.2	0.1	0.9	
Historical Sharpe	0.6	0.5	0.1	0.0	
Exp Sortino	1.6	1.4	0.1	1.1	
Historical Sortino	0.8	0.7	0.1	0.0	
RISK PROFILE					Risk
Downside Deviation	2.9	2.7	0.2	0.0	
Semi Deviation	3.2	3.0	0.2	0.0	
Max Drawdown	11.4	11.5	-0.1	n/a	
Historical VaR	-6.9	-6.8	-0.2	0.1	
	40.0	-9.5	-1.1	-0.1	0 0 0 0
Historical CVaR	-10.6	0.0			
PORTFOLIO METRICS	-10.6	0.0			High
	4.8	4.3	0.5	n/a	
PORTFOLIO METRICS				n/a n/a	
PORTFOLIO METRICS YTW	4.8	4.3	0.5		
PORTFOLIO METRICS YTW OAS	4.8 1.6	4.3 1.0	0.5	n/a	
PORTFOLIO METRICS YTW OAS MDur	4.8 1.6 6.5	4.3 1.0 6.5	0.5 1 0.0	n/a n/a	
PORTFOLIO METRICS YTW OAS MDur MTY	4.8 1.6 6.5 9.2	4.3 1.0 6.5 8.9	0.5 1 0.0 0.3	n/a n/a n/a	
PORTFOLIO METRICS YTW OAS MDur MTY Rtg	4.8 1.6 6.5 9.2	4.3 1.0 6.5 8.9	0.5 1 0.0 0.3	n/a n/a n/a	
ORTFOLIO METRICS YTW OAS MDur MTY Rtg CORRELATION & BETA	4.8 1.6 6.5 9.2 A2	4.3 1.0 6.5 8.9 AA3	0.5 1 0.0 0.3 n/a	n/a n/a n/a n/a	
PORTFOLIO METRICS YTW OAS MDur MTY Rtg CORRELATION & BETA Correl. vs CORE+	4.8 1.6 6.5 9.2 A2	4.3 1.0 6.5 8.9 AA3	0.5 1 0.0 0.3 n/a	n/a n/a n/a n/a 0.0	0000



Asset Class Forecasts and Risk/Reward

Global asset classes – expected 12-month return vs. risk



Source: Morgan Stanley Research. Note: 'Expected returns' based on MS Strategy 12m forecasts and current market prices. Correlation is six-month relative to global equities (MSCI ACWI). Credit returns are excess returns

Exhibit 25: Morgan Stanley forecasts

	As of Jun 23,	of Jun 23, Q2 2023 Forecast		t	Q2 20	23 Return Fo	recast	Average	Base Case
	2022	Bear	Base	Bull	Bear	Base	Bull	Volatility	Return/Risk
Equities					-	Total Returns	;		
S&P 500	3,796	3,350	3,900	4,450	-10%	4.4%	19%	21%	0.21
MSCI Europe	1,619	1,340	1,760	2,000	-14%	12.4%	27%	19%	0.64
Topix	1,852	1,620	2,050	2,370	-10%	13.3%	31%	20%	0.66
MSCI EM	995	890	1,060	1,340	-8%	9.5%	38%	20%	0.47
FX					-	Total Returns	•		
USD/JPY	135	125	130	133	-2%	0.2%	4%	10%	0.02
EUR/USD	1.05	1.03	1.10	1.14	-5%	1.9%	6%	8%	0.23
GBP/USD	1.23	1.20	1.28	1.33	-3%	3.6%	8%	10%	0.37
AUD/USD	0.69	0.63	0.70	0.73	-9%	1.5%	6%	11%	0.14
USD/INR	78.3	72.0	74.3	79.0	2%	8.4%	12%	6%	1.30
USD/ZAR	16.0	14.5	14.8	15.3	8%	11.5%	14%	16%	0.72
USD/BRL	5.24	5.20	5.40	5.70	1%	5.9%	10%	18%	0.33
Rates (% percent)						Total Returns	;		
UST 10yr	3.09	4.00	3.05	2.50	-5%	3.2%	8%	8%	0.41
DBR 10yr	1.43	1.75	1.25	0.20	-1%	3.3%	13%	7%	0.45
UKT 10yr	2.31	2.10	2.25	1.65	4%	3.8%	8%	8%	
JGB 10yr	0.23	0.45	0.30	0.05	-1%	-0.1%	2%	3%	-0.02
Credit (bps)					E	xcess Return	IS		
US IG	149	175	150	115	0%	1.5%	4%	5%	0.28
US HY	525	625	490	340	-1%	6.0%	13%	9%	0.64
EUR IG	108	115	95	65	1%	1.7%	3%	2%	0.69
EUR HY	479	650	550	350	-3%	2.0%	9%	7%	0.28
EM Sovs	510	525	410	350	4%	12.4%	17%	7%	1.68
US Agency MBS	51	60	35	25	0%	1.4%	2%	2%	0.89
Commodities					-	Total Returns	•		
Brent	110	75	110	150	-19%	19.3%	63%	41%	0.47
Copper	3.8	3.4	4.0	4.9	-13%	3.1%	29%	25%	0.12
Gold	1,842	1,530	1,700	2,040	-19%	-9.8%	8%	17%	-0.58

Source: Markit iBoxx, MSCI, Bloomberg, The Yield Book, Morgan Stanley Research forecasts. Note: Returns are total returns, except for credit, where we forecast excess returns versus government bonds. Commodity returns are calculated relative to futures to account for carry. All currency returns are shown as XXXUSD return. Volatility is shown as the average of 1y implied vol (where available) and 10y realised vol.



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(as of May 31, 2022)

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	COVERAGE UI	NIVERSE	INVESTMEN	IT BANKING CLII	OTHER MA INVESTMENT : CLIENTS (SERVICES	
STOCK RATING	COUNT	% OF	COUNT	% OF	% OF	COUNT	% OF
CATEGORY		TOTAL		TOTAL IBC	RATING		TOTAL
				(CATEGORY		OTHER
							MISC
Overweight/Buy	1398	39%	344	44%	25%	599	39%
Equal-weight/Hold	1576	45%	354	45%	22%	721	47%
Not-Rated/Hold	1	0%	1	0%	100%	0	0%
Underweight/Sell	565	16%	86	11%	15%	211	14%
TOTAL	3,540		785			1531	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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