



Pennsylvania Public School Employees' Retirement System

2026 Capital Market Assumptions and Liquidity Study

June 2026

PSERS' 2026 return and risk expectations

Liquidity Grouping	Asset Class	Policy Allocation	Public Markets Only	60/40 Publics with Same Privates	Global 60/40
Liquid Assets	Global Public Equity	32	45.7	42	60
	Core Fixed Income	8	11.4	28	40
	US Long Treasury	8	11.4	-	-
	High Yield Corp. Credit	4	5.7	-	-
	US TIPS	7	10.0	-	-
	Commodities	4	5.7	-	-
	REITs	2	2.9	-	-
	Public Infrastructure	5	7.1	-	-
	Total Liquid	70	100	70	100
Private Market Assets	Private Equity	12	-	12	-
	Private Credit	7	-	7	-
	Private Real Estate	6	-	6	-
	Private Infrastructure	5	-	5	-
	Total Private Markets	30	-	30	-

30-Year CMAs	Policy Allocation	Public Markets Only	60/40 Publics with Same Privates	Global 60/40
Forecast Return	7.4	6.4	7.2	6.1
Standard Deviation	11.2	10.6	11.5	11.0
25 th Percentile ret. 1 year	0.2	-0.4	-0.2	-1.0
5 th Percentile ret. 1 year	-9.4	-9.6	-10.0	-10.4
Sharpe Ratio	0.36	0.29	0.34	0.25

10-Year CMAs	Policy Allocation	Public Markets Only	60/40 Publics with Same Privates	Global 60/40
Forecast Return	7.2	6.3	6.9	5.7
Standard Deviation	11.2	10.6	11.5	11.0
25 th Percentile ret. 1 year	0.0	-0.6	-0.6	-1.4
5 th Percentile ret. 1 year	-9.6	-9.8	-10.3	-10.8
Sharpe Ratio	0.36	0.29	0.33	0.23

Source: Cerity Partners 2026 and 2025 30 and 10-year capital market assumptions (see Appendix)

PSERS' 2025 return and risk expectations

30-Year CMAs		Policy Allocation	Public Markets Only	60/40 Publics with Same Privates	Global 60/40
Forecast Return		7.3	6.2	7.0	5.9
Standard Deviation		11.6	10.6	11.8	10.9
25 th Percentile ret. 1 year		-0.2	-0.6	-0.6	-1.1
5 th Percentile ret. 1 year		-10.1	-9.7	-10.6	-10.5
Sharpe Ratio		0.34	0.27	0.32	0.24

10-Year CMAs		Policy Allocation	Public Markets Only	60/40 Publics with Same Privates	Global 60/40
Forecast Return		7.1	6.1	6.8	5.6
Standard Deviation		11.6	10.6	11.8	10.9
25 th Percentile ret. 1 year		-0.3	-0.8	-0.8	-1.5
5 th Percentile ret. 1 year		-10.2	-9.9	-10.8	-10.8
Sharpe Ratio		0.34	0.26	0.30	0.21

Source: Cerity Partners 2026 and 2025 30 and 10-year capital market assumptions (see Appendix)

Liquidity assessment overview

The **Liquidity Coverage Ratio (LCR)** is useful for quantifying liquidity risk.

The LCR is the ratio of liquidity available to the liquidity needed over a specified time-period. The calculation reflects PSERS' specific asset allocation and cashflow profile.

$$\text{Liquidity Coverage Ratio (LCR)} = \frac{\begin{array}{l} \text{Starting Liquid Financial Assets} \\ \Sigma(\text{Distributions from Illiquid Assets}) \\ \Sigma(\text{Employer and Employee Contributions}) \\ \Sigma(\text{Liquid Investment Return}) \end{array}}{\begin{array}{l} \Sigma(\text{Benefit Payments}) \\ \Sigma(\text{Capital Calls for Illiquid Assets}) \end{array}}$$

LCR Value	Implication
<1	Insufficient liquidity
>1	Sufficient liquidity

The analysis includes the following alternative versions of the LCR :

- **Return scenarios:** Stochastic and deterministic
- **Cashflow scenarios:** 1) Baseline and 2) adverse private market cashflows with distributions equal to capital calls

Policy allocation and liquidity assumptions

By asset class

Liquidity Grouping	Asset Class	Policy Allocation
Liquid Assets	Global Public Equity	32
	Core Fixed Income	8
	US Long Treasury	8
	High Yield Corp. Credit	4
	US TIPS	7
	Commodities	4
	REITs	2
	Public Infrastructure	5
	Total Liquid	70
Private Market Assets	Private Equity	12
	Private Credit	7
	Private Real Estate	6
	Private Infrastructure	5
	Total Private Markets	30

At 12/31/2025, the actual private markets allocation is 31.4%, relative to the 30% policy allocation. This is used as the starting illiquid allocation in the analysis.

Cashflow projection and deterministic LCR analysis

Baseline cashflow projection (\$B)

Market Value of Assets (BOY)				Total Fund Cashflows		Total Fund Net Cashflow		Private Market Cashflows		Liquid Fund Net Cashflow	
January 1,	Liquid	Illiquid	Total	Contributions	Benefit Payments	Net Cash Flow (%)	Net Cash Flow (\$)	Distributions	Capital Calls	Net Cash Flow (%)	Net Cash Flow (\$)
2026	59	27	85	6.6	-8.3	-3%	(1.7)	9.4	-4.7	5%	3.0
2027	65	25	90	6.8	-8.4	-2%	(1.6)	8.9	-4.4	4%	2.9
2028	72	22	94	6.9	-8.6	-2%	(1.7)	7.4	-4.4	2%	1.3
2029	78	21	99	7.0	-8.9	-2%	(1.9)	5.6	-4.6	-1%	(0.9)
2030	82	22	104	7.1	-9.1	-2%	(2.0)	5.0	-4.7	-2%	(1.7)
2031	85	24	109	7.2	-9.4	-3%	(2.2)	5.4	-4.8	-2%	(1.6)
2032	89	25	114	7.3	-9.6	-3%	(2.3)	6.4	-4.8	-1%	(0.7)
2033	94	26	120	7.5	-9.8	-2%	(2.3)	7.0	-4.8	0%	(0.1)
2034	100	26	126	7.6	-10.1	-3%	(2.5)	7.4	-4.9	0%	0.0
2035	106	26	132	6.2	-10.3	-4%	(4.1)	7.8	-4.9	-1%	(1.2)

- PSERS is expected to have 1.8 times as much liquidity as required over the next 10-years under baseline return and cashflow assumptions.
- The net cash flow position is expected to grow increasingly negative over time due to increasing benefit payments and declining expected private markets distributions.
- The private market's program is expected to provide more distributions than capital calls over the 10-year projection period.

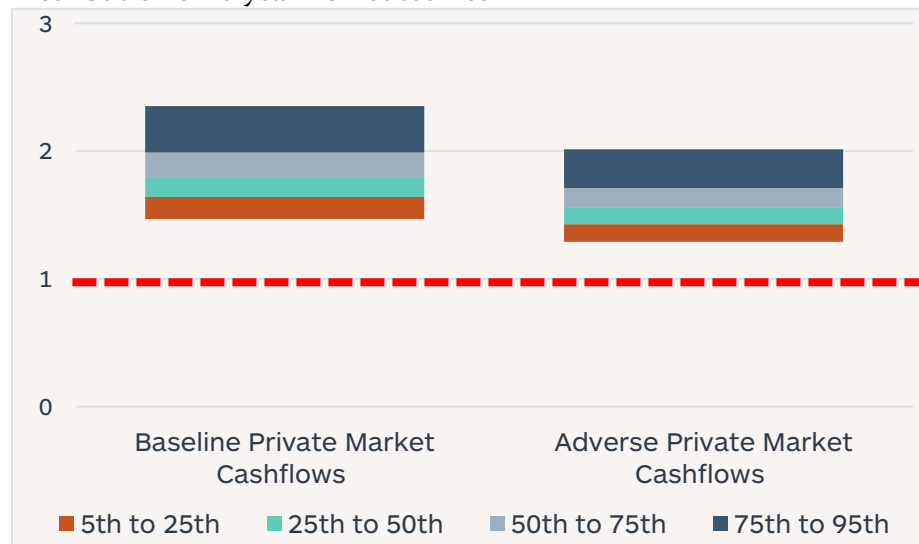
Deterministic Liquidity Coverage Ratio (LCR) (\$B)

Liquidity Available	Starting Liquid Assets	59
	10-Year Contributions	70
	10-Year Private Market Distributions	70
	10-Year Liquid Investment Income	52
	10-Year Liquidity Available	251
Liquidity Needs	10-Year Benefit Payments & Expenses	93
	10-Year Private Market Capital Calls	47
	10-Year Liquidity Needed	140
10-Year LCR		1.8

Actuarial information provided by Gallagher. Private market capital calls and distributions provided by Aksia. Baseline return assumption is 7.2% for the overall portfolio and 6.3% for the liquid portfolio based on Cerity Partners' 2026 10-year CMAs. See appendix for additional details.

Monte Carlo LCR analysis

Distribution of 10-year LCR outcomes



The *baseline private market cashflow* scenario assumes the illiquid net cashflows are as expected. The *adverse private market cashflow* scenario assumes the private market distributions are equal to capital calls over the ten-years (approximately one-third less than expected).

The Plan is expected to have sufficient liquidity to meet cashflow needs over the next 10 years, including in adverse return and private market cashflow scenarios.

10-Year LCR	Baseline PM Cashflows	Adverse PM Cashflows
Percentile		
95% Percentile	2.4	2.0
75% Percentile	2.0	1.7
50% Percentile	1.8	1.6
25% Percentile	1.6	1.4
5% Percentile	1.5	1.3
Probability of Liquidity Event	~0%	~0%

Reflects 5,000 simulations of liquidity coverage ratio based on Cerity Partners' 2026 10-year CMAs. See appendix for additional details.

Appendix

Liquidity model assumptions and inputs

GENERAL INPUTS, ASSUMPTIONS, AND METHODS

Starting Asset Value	\$85,295,590,001 as of 12/31/2025
Capital market assumptions	Cerity Partners' 2026 10-year institutional CMAs (details in Appendix)
Cashflows	Unless stated otherwise, cashflows are assumed to be consistent with those shown below. Contributions and benefit payments were provided by Gallagher. Private market cashflows were provided by Aksia.
Rebalancing methodology	The liquid portfolio is rebalanced after every projection year so that each liquid asset class makes up its target weight of the total liquid portfolio.

CASHFLOW ASSUMPTIONS

	Contributions	Benefit Payments	Illiquid Distributions	Illiquid Capital Calls
2026	6,598,157,500	8,263,300,500	9,386,000,000	4,747,000,000
2027	6,751,393,500	8,419,621,000	8,908,000,000	4,408,000,000
2028	6,860,377,000	8,642,719,500	7,380,000,000	4,436,000,000
2029	6,975,825,500	8,878,135,000	5,587,000,000	4,570,000,000
2030	7,095,853,500	9,114,896,000	4,975,000,000	4,684,000,000
2031	7,205,129,000	9,360,597,000	5,443,000,000	4,766,000,000
2032	7,340,710,500	9,604,711,000	6,350,000,000	4,814,000,000
2033	7,497,150,500	9,835,888,000	6,986,000,000	4,843,000,000
2034	7,632,650,000	10,073,734,000	7,433,000,000	4,852,000,000
2035	6,213,587,500	10,315,420,000	7,777,000,000	4,856,000,000

Capital market assumption methodology

SUMMARY OF THE VERUS APPROACH

- We use a fundamental building block approach to forecast asset class returns, based on several inputs. These include practitioner best-in-class thinking, historical data, and academic research. Each year Verus conducts an in-depth review of our methodology, analyzing new industry research findings and evaluating alternative forecasting approaches to determine whether an improvement to our methodology might be warranted. We maintain flexibility and openness to adjusting our approach if strong evidence suggests change is appropriate.
- For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
- Correlations between asset classes are calculated based on the last decade. For certain illiquid assets we use a Bloomberg factor model and adjustments for price lags to forecast correlations.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the 10-year TIPS breakeven rate	-
Cash	$1/3 * \text{current federal funds rate} + 1/3 * \text{U.S. 10-year Treasury yield} + 1/3 * \text{Federal Reserve long-term interest rate target}$	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate	Long-term volatility
Private Credit	Levered gross return (SOFR + spread + original issuance discounts) – management fees – carried interest	Estimated volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change	Long-term volatility
Private Equity**	US large cap domestic equity forecast * 1.85 beta adjustment	Implied annualized volatility, using actual historical private equity performance distribution
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional market betas + historical idiosyncratic/alpha return	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 3%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Modeled as the 10-year return expectations of a representative selection of Risk Parity strategy exposures	Target volatility

*Long-term historical volatility data is adjusted for autocorrelation (see Appendix)

**Private Equity is modeled assuming an 8.0% floor for expected return, and a 3% return premium ceiling over U.S. Large Cap Equity. These adjustments are in place to recognize that higher interest rates (cost of leverage) act as a drag on expected Private Equity returns but that this drag has had limits historically, and to recognize that future Private Equity total universe performance is likely to be more anchored to public equity performance than in past times, given a more competitive market environment

10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
Equities								
U.S. Large	S&P 500	5.4%	6.5%	15.5%	0.10	0.17	0.86	0.88
U.S. Small	Russell 2000	6.4%	8.4%	21.2%	0.12	0.22	0.37	0.45
International Developed	MSCI EAFE	6.8%	8.2%	17.4%	0.17	0.25	0.44	0.50
International Small	MSCI EAFE Small Cap	9.4%	11.4%	21.2%	0.26	0.36	0.35	0.42
Emerging Markets	MSCI EM	6.7%	9.3%	24.2%	0.12	0.23	0.38	0.45
Global Equity	MSCI ACWI	6.0%	7.3%	16.6%	0.13	0.21	0.67	0.70
Global Equity ex USA	MSCI ACWI ex USA	6.9%	8.6%	19.2%	0.16	0.25	0.42	0.47
Private Equity	CA Private Equity	8.0%	10.9%	26.0%	0.16	0.27	-	-
Private Equity Direct	CA Private Equity	9.0%	11.9%	26.0%	0.20	0.31	-	-
Private Equity (FoF)	CA Private Equity	7.0%	10.0%	26.0%	0.12	0.24	-	-
Fixed Income								
Cash	30 Day T-Bills	3.7%	3.7%	1.1%	-	-	-	-
U.S. TIPS	Bloomberg U.S. TIPS 5-10	4.5%	4.7%	5.5%	0.13	0.16	0.18	0.20
Non-U.S. Inflation Linked Bonds	Bbg World Govt. Inf Linked Bond ex U.S.	4.1%	3.7%	7.3%	0.04	-0.01	-0.04	-0.01
U.S. Treasury	Bloomberg Treasury 7-10 Year	4.2%	4.4%	7.1%	0.06	0.08	-0.15	-0.11
Long U.S. Treasury	Bloomberg Treasury 20+ Year	4.7%	5.6%	13.4%	0.07	0.13	-0.19	-0.13
Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	2.7%	3.2%	9.9%	-0.11	-0.06	-0.26	-0.21
Global Aggregate	Bloomberg Global Aggregate	3.8%	4.0%	6.6%	0.00	0.03	-0.15	-0.11
Core Fixed Income	Bloomberg U.S. Aggregate Bond	4.7%	4.8%	4.9%	0.18	0.20	-0.05	-0.02
Core Plus Fixed Income	Bloomberg U.S. Universal	4.8%	4.9%	4.6%	0.22	0.24	0.04	0.06
Investment Grade Corp. Credit	Bloomberg U.S. Corporate Investment Grade	4.8%	5.1%	8.3%	0.12	0.16	0.15	0.18
Short-Term Gov't/Credit	Bloomberg U.S. Gov't/Credit 1-3 Year	4.2%	4.3%	3.6%	0.11	0.14	-0.10	-0.09
Short-Term Credit	Bloomberg Credit 1-3 Year	4.4%	4.5%	3.6%	0.17	0.19	0.23	0.24
Intermediate Credit	Bloomberg U.S. Intermediate Credit	4.6%	4.8%	5.9%	0.14	0.17	0.21	0.22
Long-Term Credit	Bloomberg Long U.S. Credit	4.7%	5.3%	11.0%	0.08	0.14	0.11	0.16
High Yield Corp. Credit	Bloomberg U.S. Corporate High Yield	5.7%	6.2%	10.7%	0.18	0.22	0.55	0.56
Bank Loans	Morningstar LSTA US Leveraged Loan	6.1%	6.5%	8.7%	0.26	0.31	0.62	0.63
Global Credit	Bloomberg Global Credit	4.3%	4.6%	7.7%	0.06	0.10	0.13	0.16
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	7.4%	7.8%	10.5%	0.35	0.38	0.23	0.27
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	5.6%	6.3%	12.1%	0.16	0.21	0.13	0.19
Securitized Credit	Bbg U.S. Securitized: MBS, ABS, and CMBS	5.1%	5.2%	4.0%	0.35	0.35	-0.12	-0.09
Multi-Asset Credit	50/50 (High Yield / Bank Loans)	5.9%	6.4%	9.3%	0.23	0.27	-	-

- › Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
Fixed Income (continued)								
Private Credit	Morningstar LSTA US Leveraged Loan	7.7%	8.5%	13.3%	0.29	0.35	-	-
Private Credit (Direct Lending - Unlevered)	Morningstar LSTA US Leveraged Loan	6.3%	6.7%	8.7%	0.29	0.33	-	-
Private Credit (Direct Lending - Levered)	Morningstar LSTA US Leveraged Loan	7.4%	8.1%	12.3%	0.29	0.35	-	-
Private Credit (Credit Opportunities)	Morningstar LSTA US Leveraged Loan	8.4%	9.6%	16.0%	0.29	0.36	-	-
Private Credit (Junior Capital / Mezzanine)	Morningstar LSTA US Leveraged Loan	7.8%	8.7%	14.0%	0.29	0.35	-	-
Private Credit (Distressed)	Morningstar LSTA US Leveraged Loan	8.6%	12.2%	29.1%	0.16	0.29	-	-
Other								
Commodities	Bloomberg Commodity	6.4%	7.7%	15.8%	0.17	0.25	0.14	0.20
Hedge Funds	HFRI Fund Weighted Composite	5.1%	5.4%	7.5%	0.17	0.21	0.70	0.70
Hedge Fund of Funds	HFRI Fund of Funds Composite	4.1%	4.4%	7.5%	0.04	0.08	0.50	0.51
Hedge Funds (Equity Style)	Custom HFRI Benchmark Mix*	5.4%	6.3%	14.0%	0.11	0.18	0.50	0.53
Hedge Funds (Credit Style)	Custom HFRI Benchmark Mix*	5.3%	5.7%	9.3%	0.16	0.20	0.77	0.77
Hedge Funds (Asymmetric Style)	Custom HFRI Benchmark Mix*	5.3%	5.6%	6.3%	0.25	0.29	0.63	0.63
Real Estate Debt	Bloomberg CMBS IG	6.3%	6.6%	7.3%	0.34	0.38	0.12	0.14
Core Real Estate	NCREIF Property	7.2%	7.9%	11.7%	0.29	0.35	-	-
Value-Add Real Estate	NCREIF Property + 200bps	9.2%	10.2%	14.4%	0.38	0.44	-	-
Opportunistic Real Estate	NCREIF Property + 300bps	10.2%	12.0%	19.8%	0.32	0.41	-	-
REITs	FTSE Nareit Equity REITs	7.2%	8.8%	18.0%	0.19	0.28	0.25	0.33
Global Infrastructure	S&P Global Infrastructure	8.2%	9.5%	16.5%	0.27	0.35	0.44	0.50
Risk Parity**	S&P Risk Parity 10% Vol Index	6.9%	7.4%	10.0%	0.32	0.36	0.52	0.55
Currency Beta	MSCI Currency Factor Index	2.1%	2.2%	3.3%	-0.52	-0.48	-0.74	-0.72
Inflation		2.7%	-	-	-	-	-	-
60/40 Portfolio (Global Equity / Core Fixed)		5.7%	6.3%	11.0%	0.17	0.23	0.62	0.60

- Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.
- *To represent hedge fund styles, we use a combination of HFRI benchmarks: Equity Style = 33% HFRI Fundamental Growth, 33% HFRI Fundamental Value, 33% HFRI Activist. Credit Style = 20% HFRI Distressed/Restructuring, 20% HFRI Credit Arbitrage, 20% HFRI Fixed Income-Corporate, 20% HFRI Fixed Income-Convertible Arbitrage, 20% HFRI Fixed Income-Asset Backed. Asymmetric Style = 50% HFRI Relative Value, 50% HFRI Macro
- **The Risk Parity forecast shown here assumes a 10% target volatility strategy. We recommend customizing this forecast to the target volatility specifications of the risk parity strategy that an investor wishes to model. Please speak with your Verus consultants for customization needs.

Correlation assumptions

	Cash	US Large	US Small	Intl Large	Intl Small	EM	Global Equity	PE	US TIPS	US Treasury	Global Sovereign ex-US	US Core	Core Plus	Short-Term Gov't/Credit	Short-Term Credit	Long-Term Credit	US HY	Bank Loans	Global Credit	EMD USD	EMD Local	Commodities	Hedge Funds	Real Estate	REITs	Infrastructure	Currency Beta	Risk Parity
Cash	1.0																											
US Large	0.0	1.0																										
US Small	-0.1	0.9	1.0																									
Intl Large	0.0	0.8	0.8	1.0																								
Intl Small	0.0	0.8	0.8	1.0	1.0																							
EM	0.0	0.7	0.6	0.8	0.8	1.0																						
Global Equity	0.0	1.0	0.9	0.9	0.9	0.8	1.0																					
PE	0.0	0.7	0.6	0.5	0.5	0.5	0.7	1.0																				
US TIPS	0.0	0.5	0.4	0.5	0.5	0.4	0.5	0.1	1.0																			
US Treasury	0.2	0.2	0.1	0.2	0.2	0.2	0.2	-0.1	0.8	1.0																		
Global Sovereign ex-US																												
US Core	0.1	0.4	0.3	0.5	0.6	0.6	0.5	0.1	0.7	0.7	1.0																	
Core Plus	0.2	0.4	0.3	0.4	0.4	0.4	0.4	0.1	0.8	0.9	0.8	1.0																
Core Plus	0.1	0.5	0.4	0.5	0.5	0.5	0.5	0.1	0.9	0.9	0.8	1.0	1.0															
Short-Term Gov't/Credit	0.4	0.2	0.1	0.3	0.3	0.3	0.3	0.0	0.7	0.8	0.7	0.9	0.8	1.0														
Short-Term Credit	0.2	0.4	0.4	0.5	0.6	0.5	0.5	0.1	0.7	0.6	0.7	0.8	0.9	0.9	1.0													
Long-Term Credit	0.0	0.6	0.5	0.6	0.6	0.6	0.6	0.2	0.8	0.7	0.8	0.9	0.9	0.7	0.8	1.0												
US HY	0.0	0.8	0.8	0.8	0.8	0.7	0.8	0.4	0.6	0.2	0.5	0.5	0.6	0.4	0.7	0.7	1.0											
Bank Loans	0.0	0.6	0.7	0.6	0.7	0.6	0.6	0.3	0.3	-0.1	0.2	0.2	0.3	0.1	0.5	0.4	0.8	1.0										
Global Credit	0.0	0.6	0.6	0.8	0.8	0.7	0.7	0.2	0.8	0.6	0.8	0.8	0.9	0.7	0.9	0.9	0.8	0.6	1.0									
EMD USD	0.1	0.7	0.6	0.7	0.7	0.7	0.7	0.4	0.6	0.4	0.7	0.7	0.7	0.5	0.7	0.8	0.8	0.7	0.9	1.0								
EMD Local	0.1	0.5	0.4	0.7	0.7	0.8	0.7	0.4	0.5	0.3	0.7	0.5	0.6	0.4	0.6	0.7	0.7	0.5	0.8	0.8	1.0							
Commodities	-0.1	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.2	-0.2	0.1	0.0	0.0	-0.1	0.1	0.1	0.5	0.5	0.3	0.3	0.4	1.0						
Hedge Funds	-0.1	0.8	0.9	0.8	0.8	0.7	0.8	0.4	0.4	0.0	0.3	0.3	0.4	0.1	0.5	0.5	0.8	0.7	0.7	0.7	0.5	0.5	1.0					
Real Estate	-0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.1	0.3	0.3	0.1	0.2	0.4	1.0				
REITs	-0.1	0.8	0.8	0.7	0.7	0.6	0.8	0.5	0.6	0.3	0.5	0.5	0.6	0.3	0.5	0.7	0.7	0.6	0.7	0.7	0.5	0.4	0.7	0.3	1.0			
Infrastructure	0.0	0.8	0.7	0.8	0.8	0.7	0.8	0.5	0.5	0.2	0.5	0.4	0.5	0.3	0.6	0.6	0.8	0.7	0.7	0.8	0.7	0.5	0.7	0.2	0.8	1.0		
Currency Beta	0.0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.1	-0.2	1.0	
Risk Parity	0.0	0.8	0.7	0.8	0.8	0.7	0.8	0.5	0.7	0.5	0.6	0.6	0.7	0.5	0.7	0.7	0.8	0.6	0.8	0.8	0.6	0.5	0.7	0.3	0.8	0.8	-0.1	1.0

➤ Note: as of 9/30/25 - Correlation assumptions are based on the last ten years. Private Equity and Private Real Estate correlations are especially difficult to model due to appraisal-based pricing and lag issues that exist in the data. For Private Equity we use Bloomberg's Private Equity factor estimates to calculate correlation to other assets. For Private Real Estate we de-lag stated quarterly returns to better estimate correlations to other assets.

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