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Pacing Plans for Illiquid Asset Classes

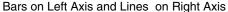
Rhode Island State Investment Commission

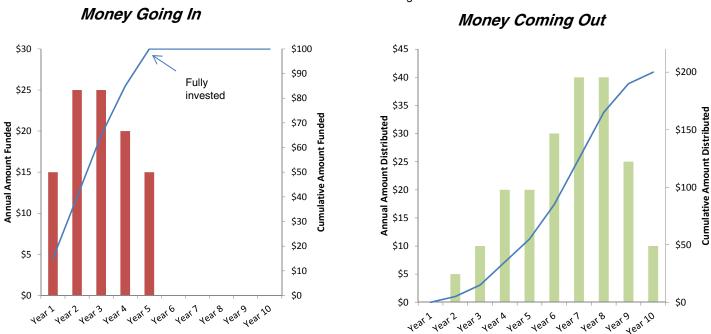
Tom Lynch, Senior Managing Director, CFA

September 27, 2017

Pacing Plan Concept

Example Private Equity Fund Cash Flows





Unlike a typical liquid investment vehicle where capital is funded and returned quickly, illiquid investment vehicles are typically made on a commitment basis and funded and returned over time. Thus commitment amount does not equal invested amount but rather invested amount must be forecasted and commitments planned based on a forecast model.

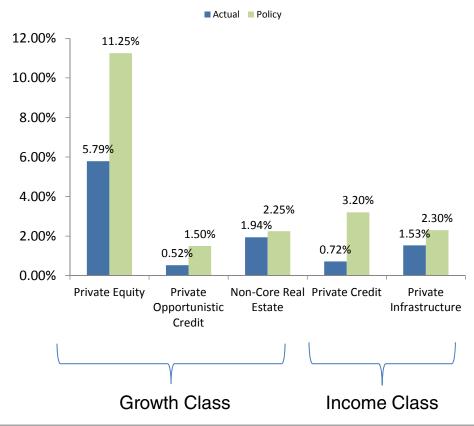
Example assumes a \$100 commitment to a fund with a 10 year term and a five year investment period



Pacing Plan Process

Pacing plan quantifies the amount and timing of capital commitments to achieve a target investment level (asset allocation policy target) over a specified period of time

Actual and Policy Targets for Illiquid Investments





Pacing Plan Process

Pacing Plan forecasts cash flows and market values for each legacy fund commitment and new fund commitment

Forecast of legacy fund commitments based on actual historical data and average industry experience for future cash flows

Forecast of new commitments based on average industry experience for future cash flows

Forecast depends on type of investment (e.g. buyout fund, distressed debt fund, etc.)



Pacing Plan: Private Equity

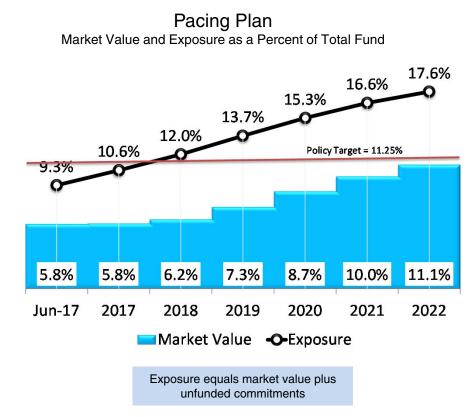
Policy target of 11.25% within Growth Class

Allocation starts at 5.8% (current allocation), increasing to 11.25% by 2022

Unfunded commitments = 4% to 7% of total fund

Opportunistic and diversified pacing:

- Vintage year
 - Maintain level vintage year commitments averaging \$265mm per year
- Funds:
 - ~5-10 funds per year/\$20-60mm per fund
- Potential Strategies:
 - US Buyouts
 - Growth Equity
 - International Private Equity
 - Venture Capital





Private Equity Pacing Plan

ERSRI - Pacing Plan	6/30/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Forecast Plan Total Assets	8,041,060	8,160,785	8,405,608	8,657,776	8,917,510	9,185,035	9,460,586
New Commitments		220,000	265,000	265,000	265,000	265,000	265,000
Private Equity Fair Value by Sector:							
Private Equity Total	465,634	476,074	521,386	633,632	777,148	922,767	1,053,551
Private Equity Fair Value as % of Total Plan Assets	5.79%	5.83%	6.20%	7.32%	8.71%	10.05%	11.14%
Private Equity Target Asset Allocation	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%
Unfunded Commitments and Fair Value	3/31/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Private Equity Unfunded Commitments	278,278	387,859	488,973	550,829	584,849	603,561	613,852
Unfunded Commitments + FV	743,912	863,933	1,010,358	1,184,461	1,361,997	1,526,328	1,667,403
Unfunded Commitments + FV as % of Assets	9.3%	10.6%	12.0%	13.7%	15.3%	16.6%	17.6%
Ratio of Unf Com + FV to Target Allocation	0.82x	0.94x	1.07x	1.22x	1.36x	1.48x	1.57x
Net Cash Flow Requirements		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Total Net Cash Flow to Private Equity		23,959	1,581	(60,890)	(81,102)	(69,071)	(39,890)



Pacing Plan: Private Opportunistic Credit

Policy target of 1.5% within Growth Class

Allocation starts at 0.5% (current allocation), increasing to 1.5% by 2022

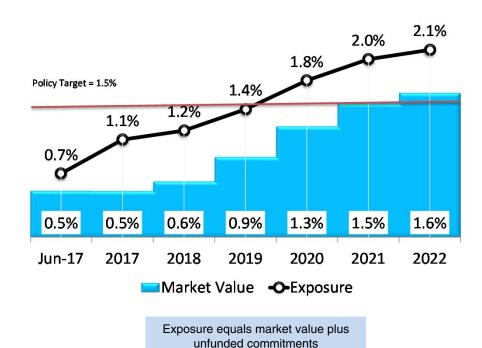
Unfunded commitments = 0.5% to 0.6% of total fund

Opportunistic and diversified pacing

- Vintage year
 - Maintain level vintage year commitments averaging \$35mm per year
- Funds
 - ~1-2 funds per year/\$20-35 mm per fund
- Potential Strategies:
 - Distressed corporate debt
 - Distressed real estate debt
 - Other non-performing debt

Pacing Plan

Market Value and Exposure as a Percent of Total Fund





Pacing Plan Opportunistic Private Credit

ERSRI - Pacing Plan	6/30/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Forecast Plan Total Assets	8,041,060	8,160,785	8,405,608	8,657,776	8,917,510	9,185,035	9,460,586
New Commitments		50,000	35,000	35,000	35,000	35,000	35,000
Private Opportunistic Credit Fair Value by Sector:							
Private Opportunistic Credit Total	42,197	42,591	52,942	78,462	111,683	138,613	154,247
POC Fair Value as % of Total Plan Assets	0.52%	0.52%	0.63%	0.91%	1.25%	1.51%	1.63%
POC Target Asset Allocation	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Unfunded Commitments and Fair Value	3/31/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Private Opportunistic Credit Unfunded Commitments	15,533	47,378	48,213	46,664	46,199	46,060	46,018
Unfunded Commitments + FV	57,730	89,969	101,156	125,126	157,882	184,672	200,265
Unfunded Commitments + FV as % of Assets	0.7%	1.1%	1.2%	1.4%	1.8%	2.0%	2.1%
Ratio of Unf Com + FV to Target Allocation	0.48x	0.73x	0.80x	0.96x	1.18x	1.34x	1.41x
Net Cash Flow Requirements		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Total Net Cash Flow to Private Opportunistic Credit		2,723	(6,156)	(20,305)	(25,493)	(15,929)	(1,981)



Pacing Plan: Non-Core Real Estate

Policy target of 2.25% within Growth Class

Allocation starts at 1.94% (current allocation), increasing to 2.25% by 2022

Unfunded commitments = 1.0% to 1.2% of total fund

Opportunistic and diversified pacing

- Vintage year
 - Maintain level vintage year commitments averaging \$60 mm per year
- Funds
 - ~1-2 funds per year/\$30-60mm per fund
- Potential Strategies:
 - Distressed Real Estate
 - Value-Add Real Estate

Pacing Plan

Market Value and Exposure as a Percent of Total Fund



Exposure equals market value plus unfunded commitments



Non-Core Real Estate Pacing Plan

ERSRI - Pacing Plan	6/30/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Forecast Plan Total Assets	8,041,060	8,160,785	8,405,608	8,657,776	8,917,510	9,185,035	9,460,586
New Commitments		0	60,000	60,000	60,000	60,000	60,000
Non-Core Real Estate at Fair Value	155,903	169,898	173,589	177,615	185,843	198,215	214,095
Non-Core Real Estate at Fair Value as % of Total Plan As	1.94%	2.08%	2.07%	2.05%	2.08%	2.16%	2.26%
Non-Core Real Estate Target Asset Allocation	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%
Unfunded Commitments and Fair Value	3/31/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Private Equity Unfunded Commitments	68,706	42,941	70,971	88,698	97,561	101,993	104,209
Unfunded Commitments + FV	224,609	212,840	244,560	266,313	283,405	300,209	318,304
Unfunded Commitments + FV as % of Assets	2.8%	2.6%	2.9%	3.1%	3.2%	3.3%	3.4%
Ratio of Unf Com + FV to Target Allocation	1.24x	1.16x	1.29x	1.37x	1.41x	1.45x	1.50x
Net Cash Flow Requirements		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Total Net Cash Flow to Opportunistic Real Estate		(3,998)	10,836	10,816	6,958	3,518	1,068
Annual Commitments by Strategy		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Total Annual Commitments to Opportunistic Real Estate		0	60,000	60,000	60,000	60,000	60,000



Pacing Plan: Private Credit

Policy target of 3.2% within Income Class

Allocation starts at 0.7% (current allocation), increasing to 3.2% by 2022

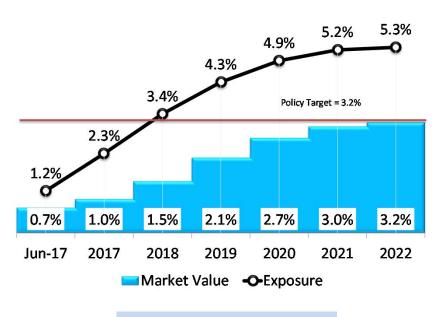
Unfunded commitments = 1.1% to 2.2% of total fund

Opportunistic and diversified pacing

- Vintage year
 - Maintain level vintage year commitments averaging \$125 mm per year
- Funds
 - ~2-3 funds per year/\$30-70mm per fund
- Potential Strategies:
 - Direct lending
 - Real estate debt
 - IP Royalties
 - Insurance linked
 - Other

Pacing Plan

Market Value and Exposure as a Percent of Total Fund



Exposure equals market value plus unfunded commitments



Private Credit Pacing Plan

ERSRI - Pacing Plan	6/30/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Forecast Plan Total Assets	8,041,060	8,160,785	8,405,608	8,657,776	8,917,510	9,185,035	9,460,586
New Commitments		100,000	125,000	125,000	125,000	125,000	125,000
Private Credit Fair Value by Sector:							
Private Credit at Fair Value	57,836	78,736	124,004	185,888	241,672	279,202	298,823
Private Credit Fair Value as % of Total Plan Assets	0.7%	1.0%	1.5%	2.1%	2.7%	3.0%	3.2%
Private Credit Target Asset Allocation	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
Unfunded Commitments and Fair Value	3/31/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Private Credit Unfunded Commitments	38,553	106,204	161,482	186,780	196,900	200,947	202,566
Unfunded Commitments + FV	96,389	184,941	285,486	372,669	438,571	480,150	501,389
Unfunded Commitments + FV as % of Assets	1.2%	2.3%	3.4%	4.3%	4.9%	5.2%	5.3%
Ratio of Unf Com + FV to Target Allocation	0.37x	0.71x	1.06x	1.35x	1.54x	1.63x	1.66x
Net Cash Flow Requirements		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Total Net Cash Flow to Private Credit		(17,864)	(39,756)	(53,204)	(42,771)	(20,614)	(76)
Annual Commitments by Stratogy		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	10/01/0000
Annual Commitments by Strategy							12/31/2022
Total Annual Commitments to Private Credit		100,000	125,000	125,000	125,000	125,000	125,000
Total Plan Assets assumed to grow at 3.0%							



Pacing Plan: Private Infrastructure

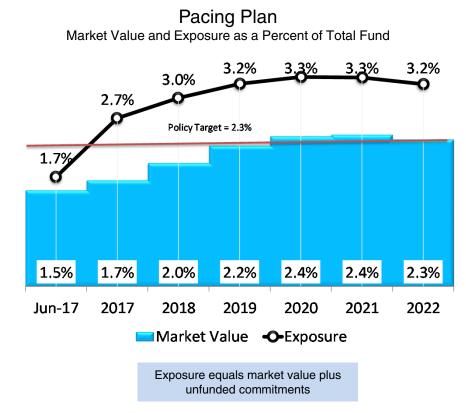
Policy target of 2.3% within Income Class

Allocation starts at 1.5% (current allocation), increasing to 2.3% by 2022

Unfunded commitments = 0.2% to 1.0% of total fund

Opportunistic and diversified pacing

- Vintage year
 - Maintain level vintage year commitments averaging \$35 mm per year
- Funds
 - ~1-2 funds per year/\$20-35mm per fund
- Potential Strategies:
 - Core infrastructure
 - Value –add
 - International





Private Infrastructure Pacing Plan

ERSRI - Pacing Plan	6/30/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Forecast Plan Total Assets	8,041,060	8,160,785	8,405,608	8,657,776	8,917,510	9,185,035	9,460,586
New Commitments		75,000	35,000	35,000	35,000	35,000	35,000
Private Infrastructure Fair Value by Sector:							
Private Infrastructure at Fair Value	122,773	137,297	164,517	193,485	212,659	221,374	220,817
Private Infra Fair Value as % of Total Plan Assets	1.5%	1.7%	2.0%	2.2%	2.4%	2.4%	2.3%
Private Infra Target Asset Allocation	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Unfunded Commitments and Fair Value	3/31/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Private Infra Unfunded Commitments	17,115	80,714	87,174	85,177	84,079	83,474	83,142
Unfunded Commitments + FV	139,888	218,011	251,691	278,662	296,738	304,848	303,959
Unfunded Commitments + FV as % of Assets	1.7%	2.7%	3.0%	3.2%	3.3%	3.3%	3.2%
Ratio of Unf Com + FV to Target Allocation	0.76x	1.16x	1.30x	1.40x	1.45x	1.44x	1.40x
Net Cash Flow Requirements		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Total Net Cash Flow to Private Credit		(5,455)	(13,696)	(12,763)	(116)	12,232	22,362
Annual Commitments by Strategy		12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Total Annual Commitments to Private Infrastructure		75,000	35,000	35,000	35,000	35,000	35,000



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