

Investment Board Meeting Agenda

Thursday, June 17, 2021

Conference Telephone #: 646-558-8656

Meeting ID: 880 9951 0401

8:30 a.m. – 12:00 p.m.

- | | |
|-------------------|--|
| 8:30 a.m. | Call to Order |
| 8:30 a.m. | Approval of March 26, 2021, Board Meeting Minutes |
| 8:35 a.m. | CEO Report – Greg Samorajski |
| 8:45 a.m. | CEO Across-the-Board Salary Adjustment
Greg Samorajski, IPERS |
| 8:50 a.m. | IPERS Investment Staff Reports <ul style="list-style-type: none">• Beta Report – Karl Koch• Alpha Report – Investment Team• Risk Report – Sriram Lakshminarayanan• CIO Updates – Karl Koch |
| 9:10 a.m. | Private Markets Overview and Outlook
Shawn Quinn, Wilshire Associates |
| 9:25 a.m. | Private Markets Program Annual Review
Pat Reinhardt, IPERS |
| 10:05 a.m. | Break |
| 10:15 a.m. | Private Equity Program Review
Doug LeBon, Richard Mazer and Jason Jenkins, Pathway Capital Management |
| 10:45 a.m. | Proposed Private Markets Investment Policy Revisions
Pat Reinhardt, IPERS |
| 11:00 a.m. | Opportunistic Private Credit Manager Hiring Recommendations
Pat Reinhardt, IPERS |
| 11:15 a.m. | Securities Lending Program Review
Jina Bresson, State Treasurer's Office |
| 11:30 a.m. | Securities Litigation Report
Elizabeth Hennessey, IPERS |
| 11:45 a.m. | Public Comments |
| 11:55 a.m. | Other Business <ul style="list-style-type: none">• Confirm Next Board Meeting Dates of September 15–16, 2021• Next BAC Meeting is Monday, August 23, 2021 |
| 12:00 p.m. | Adjourn |



INVESTMENT BOARD MEETING MINUTES

Video / Telephonic Meeting

March 26, 2021

The following people participated in the telephonic IPERS Investment Board meeting held on Friday, March 26, 2021.

Members of the Board – Present

Lisa Stange, Chair
David Creighton, Vice Chair
Mike Duncan
Treasurer Michael Fitzgerald
Justin Kirchhoff
Phyllis Peterson
Kris Rowley

Representative Brian Lohse
Representative Mary Mascher
Senator Pam Jochum
Senator Mark Lofgren

Administration

Greg Samorajski, CEO
Karl Koch, CIO
Sriram Lakshminarayanan, CRO
Sheldon Lien, Senior Investment Officer
Pat Reinhardt, Senior Investment Officer
Keith Scholten, Senior Investment Officer

Luca Rassenti, Investment Officer
Kevin Terdal, Investment Officer
Melinda McElroy, Executive Assistant
David Martin, Chief Benefits Officer
Rick Hindman, Chief Information Officer
Shawna Lode, Director of Communications

Consultants and Presenters

Rose Dean, Wilshire Associates
Ali Kazemi, Wilshire Associates
Shawn Quinn, Wilshire Associates

Call to Order

Lisa Stange, chair, called the meeting to order at 8:30 a.m. She began the meeting welcoming Representative Brian Lohse to the Board.

Approval of Minutes from Previous Meeting

David Creighton made the motion to approve the December 3, 2020, Investment Board meeting minutes. Phyllis Peterson seconded. The minutes were approved by unanimous roll call vote.

Ayes: Lisa Stange, David Creighton, Mike Duncan, Treasurer Michael Fitzgerald, Justin Kirchhoff, Phyllis Peterson and Kris Rowley

Nays: None

Absent: None

MOTION PASSED

CEO Report – Greg Samorajski

Greg Samorajski reported that the IPERS building continues to be closed to the public due to the COVID-19 pandemic and most employees are still working remotely. He next reviewed that IPERS has requested an incremental appropriation of \$1.135 million in FY2022 and FY2023 to hire four new investment professionals. Governor Reynolds supported IPERS' request, the next step is to get legislative support.

Calendar Year 2020 Investment Performance Review – Rose Dean and Ali Kazemi

Rose Dean and Ali Kazemi of Wilshire Associates reported that at December 31, 2020, the Total Fund performance for the calendar year was 13.5%, underperforming the policy benchmark return of 13.9%. The presentation also included a return/risk ranking, sources of risk and a performance review of each publicly traded asset class and the managers within each class.

Internal Equity Management Update

Discussions were held regarding developing an internal equity management program with a portion of IPERS' assets. The Board will revisit the issue in September.

IPERS Investment Staff Reports

Beta Report

Karl Koch reviewed the beta report, noting the Fund's estimated market value of \$39.528 billion as of March 12, 2021, the date of the report. All asset classes were within policy ranges.

Alpha Report

The investment staff reviewed the alpha report noting minor performance concerns continue with Janus Capital, a domestic equity manager, and IPM Informed Portfolio Management, a liquid absolute return strategy manager.

Risk Report

Sriram Lakshminarayanan presented IPERS' risk monitoring reports. He noted that active risk is back down to normal levels.

CIO Updates

Karl Koch updated the Board on several matters including the status of implementing ARP strategies and two upcoming RFPs. The first RFP will be for private markets investment tracking software, and the second for investment consulting services. The investment consultant search is required because the contract with Wilshire Associates expires September 30, 2021.

Opportunistic Private Credit Manager Hiring Recommendations – Pat Reinhardt

Pat Reinhardt explained that the opportunistic private credit search is being completed in two parts. In the first part of the search, multi-strategy and mezzanine submissions were evaluated. In the second part, the remainder of the submissions (specialty finance, real assets, special situations and other) will be evaluated. Staff requested the Investment Board approve the following hiring recommendations for the first part of the search:

- Hire Marathon Asset Management and Crestline Investors each for \$250 million allocations in multi-strategy opportunistic credit mandates subject to final due diligence and successful contract negotiations. Magnetar, CarVal Investors and Varde Partners will serve as bench managers for potential future funding if authorize by the Board at some future date.
- Hire Ares Management and Audax Group each for \$100 million allocations in mezzanine opportunistic credit mandates (and up to \$25 million co-investment allocations for each), subject to final due diligence and successful contract negotiations. Blackstone (GSO) will serve as a bench manager for potential future funding if authorized by the Board at some future date.

David Creighton made the motion to approve the hiring recommendations. Treasurer Fitzgerald seconded.

Ayes: Lisa Stange, David Creighton, Treasurer Michael Fitzgerald, Justin Kirchhoff, Phyllis Peterson and Kris Rowley

Nays: None

Absent: Mike Duncan

MOTION PASSED

IPERS Staff Updates

David Martin reviewed the member demand measures report for February 2021 and noted that member annual benefit statements will begin mailing on Monday, March 29.

Shawna Lode reported on the 2021 Legislative session.

Public Comments

Pat Deluhery inquired if IPERS was seeing an increase in member's double dipping due to the COVID-19 pandemic. David Martin answered no and explained that double dipping is a term used to describe the act of receiving pension benefits while also accepting a salary, oftentimes from the same employer.

Confirm Next Meeting Date

The next regularly scheduled Investment Board meeting is Thursday, June 17, 2021, beginning at 8:30 a.m.

Adjourn

With no further business to come before the Investment Board, the meeting adjourned at 11:38 a.m.



IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Gregory S. Samorajski, CFA
Chief Executive Officer

Kim Reynolds
Governor

Adam Gregg
Lt. Governor

June 8, 2021

MEMORANDUM

TO: IPERS Investment Board Members

FR: Greg Samorajski, CEO

RE: Across-the-Board Salary Adjustment

For fiscal years 2022 and 2023, Governor Reynolds authorized an across-the-board (ATB) salary increase of 1.10% for state of Iowa employees not covered by a collective bargaining agreement. However, for those directors whose salaries are set by a governing board other than the Governor, the salary adjustment must be approved by the appropriate governing body.

The Investment Board sets the salary for IPERS' chief executive officer, within the state of Iowa's 000-pay plan, [See §97B.3\(1\)](#). Therefore, I request the Investment Board approve application of the Governor approved ATB to IPERS' CEO position effective July 1, 2021 and July 1, 2022.

BETA REPORT
IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM PORTFOLIO
PRELIMINARY (Unreconciled) MARKET VALUES AT
6/4/2021

	Actual	Overlay	Total	Policy	Difference
PUBLIC MARKETS					
Domestic	\$ 9,123,348,502	\$ 24,041,758	\$ 9,147,390,261	\$ 9,115,877,138	\$ 31,513,123
International	\$ 7,317,002,737	\$ 13,259,710	\$ 7,330,262,447	\$ 7,251,834,557	\$ 78,427,890
Global Smart Beta	\$ 2,516,301,492		\$ 2,516,301,492	\$ 2,489,560,225	\$ 26,741,267
Total Equities	\$ 18,956,652,731		\$ 18,993,954,199	\$ 18,857,271,920	\$ 136,682,280
Core Plus	\$ 10,520,464,615	\$ 200,320,340	\$ 10,720,784,955	\$ 10,771,413,836	\$ (50,628,882)
Public Credit	\$ 1,632,052,707		\$ 1,632,052,707	\$ 1,655,536,699	\$ (23,483,992)
Cash	\$ 636,253,145	\$ (237,621,808)	\$ 398,631,337	\$ 412,841,645	\$ (14,210,308)
PRIVATE MARKETS	\$ 9,955,753,094		\$ 9,955,753,094	\$ 10,004,112,193	\$ (48,359,098)
Private Equity	\$ 6,702,415,020		\$ 6,702,415,020	\$ 6,734,739,971	\$ (32,324,951)
Private Credit	\$ 1,110,844,142		\$ 1,110,844,142	\$ 1,117,591,525	\$ (6,747,383)
Private Real Assets	\$ 2,142,493,933		\$ 2,142,493,933	\$ 2,151,780,697	\$ (9,286,764)
TOTAL FUND	\$ 41,701,176,293			\$ 41,701,176,293	\$ -

	Actual	Overlay	Total	Policy	Difference
PUBLIC MARKETS					
Domestic	21.88%	0.06%	21.94%	21.86%	0.08%
International	17.55%	0.03%	17.58%	17.39%	0.19%
Global Smart Beta	6.03%		6.03%	5.97%	0.06%
Total Equities	45.46%		45.55%	45.22%	0.33%
Core Plus	25.23%	0.48%	25.71%	25.83%	-0.12%
Public Credit	3.91%		3.91%	3.97%	-0.06%
Cash	1.53%	-0.57%	0.96%	0.99%	-0.03%
PRIVATE MARKETS	23.87%		23.87%	23.99%	-0.12%
Private Equity	16.07%		16.07%	16.15%	-0.08%
Private Credit	2.66%		2.66%	2.68%	-0.02%
Private Real Assets	5.14%		5.14%	5.16%	-0.02%
TOTAL FUND	100.00%			100.00%	0.00%

BETA REPORT						
IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM PORTFOLIO						
PRELIMINARY (Unreconciled) MARKET VALUES AT						
6/4/2021						
PUBLIC PORTFOLIO		76.13%	\$	31,745,423,198		
Manager Name	Manager % of Asset Class	Total Market Value		Manager Name	Manager % of Asset Class	Total Market Value
Blackrock R2000 SAE	2.88%	\$	262,424,597	Western	16.45%	\$ 1,730,091,738
Blackrock - U.S. Alpha Tilt	17.52%	\$	1,598,014,007	Blackrock	6.87%	\$ 723,220,078
Fisher	0.00%	\$	14,386	Principal Global Investors	12.47%	\$ 1,311,384,324
Janus	5.37%	\$	489,749,306	TCW	12.52%	\$ 1,316,993,095
Domestic Equity Transition	0.00%	\$	203,294	Prudential	6.94%	\$ 730,150,181
Russell 2500 Value Transition	0.00%	\$	-	BlackRock Universal Alpha	1.00%	\$ 105,643,504
DOMESTIC EQUITY - ACTIVE	25.76%	\$	2,350,405,590	BlackRock Universal Beta	3.78%	\$ 397,643,734
Mellon - S&P 500	67.26%	\$	6,136,326,855	Mackay Shields	11.74%	\$ 1,234,999,233
Mellon - Wilshire 4500	0.38%	\$	34,348,372	PGIM GLRV Alpha	2.32%	\$ 243,676,061
Rhumblin Advisers	6.60%	\$	602,267,684	PGIM GLRV Beta	2.31%	\$ 242,528,702
DOMESTIC EQUITY - PASSIVE	74.24%	\$	6,772,942,912	CORE PLUS - ACTIVE	76.39%	\$ 8,036,330,650
TOTAL DOMESTIC EQUITY	21.88%	\$	9,123,348,502	Mellon SLH Agg	23.61%	\$ 2,484,133,964
Blackrock - Canada	6.99%	\$	511,452,451	CORE PLUS - PASSIVE	23.61%	\$ 2,484,133,964
Passive - Blackrock EAFE	21.10%	\$	1,543,612,193	TOTAL CORE PLUS	25.23%	\$ 10,520,464,615
Mellon Passive Emerging	8.78%	\$	642,292,904	Oaktree Capital Management	0.27%	\$ 4,368,991
INTERNATIONAL EQUITY - PASSIVE	36.86%	\$	2,697,357,547	Aegon USA	33.15%	\$ 540,965,669
Blackrock EAFE SAE	24.14%	\$	1,766,102,703	Prudential EMD	33.38%	\$ 544,770,834
Blackrock EM SAE	8.21%	\$	600,602,875	PGIM High Yield	33.21%	\$ 541,947,213
Blackrock Europe Alpha Tilt	0.16%	\$	11,366,031	TOTAL PUBLIC CREDIT	3.91%	\$ 1,632,052,707
BMO EAFE	8.61%	\$	629,955,978	UBS - US	55.85%	\$ 1,405,248,292
International Equity Transition	0.02%	\$	1,191,341	UBS - Developed ex US	34.02%	\$ 856,094,695
Oechsle	0.02%	\$	1,505,153	UBS - EM	10.13%	\$ 254,958,505
PanAgora Dynamic EAFE	8.83%	\$	646,007,114	TOTAL GLOBAL SMART BETA EQUITIES	6.03%	\$ 2,516,301,492
Wellington EM	13.16%	\$	962,913,994	Cash Account	58.41%	\$ 371,607,325
INTERNATIONAL EQUITY - ACTIVE	63.14%	\$	4,619,645,190	LARS Liquid Assets	13.66%	\$ 86,940,350
TOTAL INTERNATIONAL EQUITY	17.55%	\$	7,317,002,737	Parametric - Domestic Equity	8.72%	\$ 55,478,808
				Parametric - Int'l Equity	12.58%	\$ 80,034,443
				Parametric - Fixed Income	6.62%	\$ 42,148,416
				Parametric - Directed Trades	0.00%	\$ -
				Parametric - Synthetic Cash	0.00%	\$ -
				Public Real Assets Cash	0.01%	\$ 43,802
				Pending Cash	0.00%	\$ -
				CASH ACCOUNT	1.53%	\$ 636,253,145
PRIVATE PORTFOLIO		23.87%	\$	9,955,753,094		
Manager Name	Manager % of Asset Class	Total Market Value		Manager Name	Manager % of Asset Class	Total Market Value
Legacy Portfolio	23.97%	\$	1,606,709,595	Clarion Partners	20.83%	\$ 446,267,470
Pathway PE Fund XXV	76.03%	\$	5,095,705,425	Invesco	21.60%	\$ 462,692,070
PRIVATE EQUITY	16.07%	\$	6,702,415,020	RREEF	28.99%	\$ 621,210,505
Tennenbaum Capital	28.19%	\$	313,105,558	UBS Realty	17.34%	\$ 371,432,384
BREDS II	0.02%	\$	227,721	Forest Invest	8.45%	\$ 180,990,941
Principal RE Debt	0.07%	\$	791,697	UBS Farmland Investors	2.80%	\$ 59,900,563
Monroe Capital	42.39%	\$	470,890,012	PRIVATE REAL ASSETS	5.14%	\$ 2,142,493,933
Principal RE Debt II	2.45%	\$	27,269,824			
PGIM RE Global Debt	12.68%	\$	140,863,037			
KKR Goldfinch	14.20%	\$	157,696,294			
PRIVATE CREDIT	2.66%	\$	1,110,844,142			
				RECENT MARKET VALUES		
GRAND TOTAL		\$	41,701,176,293	6/4/2021	\$	41,701,176,293
				5/28/2021	\$	41,516,718,818
				5/21/2021	\$	41,369,562,692
				5/14/2021	\$	41,258,965,458
				5/7/2021	\$	41,562,072,797
PUBLIC MARKET	PERCENT	\$	DOLLARS	4/30/2021	\$	41,202,418,723
	76.13%	\$	31,745,423,198	4/23/2021	\$	40,428,841,339
PRIVATE MARKET	23.87%	\$	9,955,753,094	4/16/2021	\$	40,477,427,431
TOTAL	100.00%	\$	41,701,176,293	4/9/2021	\$	40,033,569,819

Preliminary
IPERS Portfolio Structure and Allocations
Quarter End March 31, 2021
\$40.4 Billion

Public Markets – 75% of Total Fund (Equities 45%)				
Domestic Equity \$8.8 Billion 21.7%		International Equity \$7.0 Billion 17.3%		Global Smart Beta \$2.5 Billion 6.2%
Active \$2.2 Billion 25.3%	Passive \$6.6 Billion 74.7%	Active \$4.3 Billion 61.7%	Passive \$2.7 Billion 38.3%	Passive \$2.5 Billion 100.0%
BlackRock (US Alpha Tilt) \$1.5 billion	BNY Mellon (S&P 500) \$5.9 billion	BlackRock (EAFE SAE) \$1.6 billion	BlackRock (Canada) \$457.0 million	UBS (U.S. Equity Smart Beta) \$1.4 billion
BlackRock (R2000 SAE) \$254.3 million	BNY Mellon (Wilshire 4500) \$33.1 million	BMO (EAFE) \$584.4 million	BNY Mellon (Emerging) \$609.3 million	UBS (Developed ex U.S. Smart Beta) \$830.5 million
Janus (SMID Growth) \$485.2 million	RhumbLine Advisers (Russell 2500 Value) \$560.1 million	Panagora (Dynamic EAFE) \$595.0 million	BlackRock (EAFE) \$1.5 billion	UBS (Emerging Market Smart Beta) \$258.5 million
	Parametric (Synthetic) \$53.8 million	BlackRock (Emerging SAE) \$574.1 million	Parametric (Synthetic) \$75.9 million	
		Wellington (Emerging) \$901.7 million		

Preliminary
IPERS Portfolio Structure and Allocations
Quarter End March 31, 2021
\$40.4 Billion

Public Markets – 75% of Total Fund (Fixed Income and Cash 30%)				
Core-Plus Fixed Income \$10.1 Billion 25.0%			Public Credit \$1.5 Billion 3.8%	Cash \$475.7 Million 1.2%
Active \$7.7 Billion 76.8%		Passive \$2.3 Billion 23.2%	Active \$1.5 Billion 100.0%	
BlackRock (Core Plus) \$686.6 million	Western Asset (Core Plus) \$1.7 billion	BNY Mellon Agg (Core) \$2.3 billion	Aegon USA (High Yield) \$519.2 million	BNY Mellon (Cash) \$393.7 million
Principal Global (Core Plus) \$1.3 billion	MacKay Shields (Core Plus) \$1.2 billion	Parametric (Synthetic) \$38.9 million	PGIM (High Yield) \$530.7 million	LARS Liquid Assets (Cash) \$82.1 million
PGIM (Core Plus) \$691.5 million	TCW (Core Plus) \$1.3 billion		PGIM (Emerging Market Debt) \$489.8 million	
BlackRock Universal (Relative Value) \$495.8 million	PGIM Universal (Relative Value) \$479.6 million			

Preliminary
IPERS Portfolio Structure and Allocations
Quarter End March 31, 2021
\$40.4 Billion

Private Markets – 25% of Total Fund		
Private Equity \$6.8 Billion 16.7%	Private Real Assets \$2.1 Billion 5.3%	Private Credit \$1.1 Billion 2.8%
Pathway Capital (Private Equity) \$6.8 billion	Clarion Partners (RE Equity) \$445.1 million	BREDS II (RE Debt) \$0.2 million
	Invesco (RE Equity) \$465.7 million	Principal Global (RE Debt) \$1.6 million
	RREEF (RE Equity) \$621.2 million	Tennenbaum Capital (Corporate Debt) \$313.1 million
	UBS Realty (RE Equity) \$366.3 million	Monroe Capital (Corporate Debt) \$478.7 million
	Forest Investment (Timber) \$181.0 million	Principal Global II (RE Debt) \$27.3 million
	UBS Farmland Investors (Farmland) \$59.9 billion	PGIM RE Global Debt (RE Debt) \$133.9 million
		KKR Goldfinch (Corporate Debt) \$156.9 million

Alpha Report

For periods ending March 31, 2021

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IPERS' Active Manager Alpha Scorecard

Net of Fees as of 1Q21	1Q21	1 Year	3 Year	5 Year	SI	Perf	Org	People	Process
Domestic Equity									
BlackRock – U.S. SAE	0.44%	0.56%	-0.97%	0.56%	0.03%				
BlackRock Russell 2000 SAE	-0.50%	1.79%	NA	NA	2.45%				
Janus	-2.05%	-11.62%	-5.16%	-1.70%	0.61%				
International Equity									
BlackRock – EAFE SAE	0.73%	2.30%	NA	NA	0.30%				
BMO EAFE	2.63%	-1.96%	NA	NA	-2.38%				
PanAgora Dynamic EAFE	1.60%	4.47%	NA	NA	-1.02%				
Wellington EM	0.97%	13.20%	3.22%	3.31%	0.41%				
BlackRock Emerging Markets SAE	1.49%	3.58%	NA	NA	0.66%				
Core Plus Fixed Income									
Western	-1.41%	4.34%	0.78%	0.96%	0.99%				
BlackRock	0.07%	2.60%	0.32%	0.21%	0.32%				
Principal Global Investors	0.35%	3.57%	0.99%	0.80%	0.12%				
TCW	0.33%	2.19%	0.91%	0.48%	0.51%				
Prudential	-0.53%	4.14%	0.53%	0.80%	0.79%				
Mackay Shields	0.24%	5.04%	0.72%	0.71%	0.68%				
BlackRock Universal	0.78%	NA	NA	NA	0.81%				
Prudential Universal	NA	NA	NA	NA	-0.27%				
Public Credit									
Prudential High Yield	2.16%	5.84%	NA	NA	1.67%				
Aegon USA	0.95%	2.92%	-0.13%	-0.14%	0.45%				
Prudential EMD	0.01%	7.78%	-0.25%	NA	1.01%				
LARS									
Fort, LP	-0.95%	2.36%	3.50%	NA	3.78%				
Graham Capital Management, L.P.	3.14%	10.36%	3.75%	NA	2.35%				
IPM Informed Portfolio Management AB	-6.69%	-0.12%	-4.75%	NA	-2.79%	Manager terminated 2Q21			
P/E Global LLC	4.14%	-17.37%	8.03%	NA	1.46%				
Wadhvani Asset Management LLP	9.38%	15.87%	7.04%	NA	6.68%				

IPERS' Active Manager Listing

MANAGER	INCEPTION DATE	MANDATE	BENCHMARK
Domestic Equity			
BlackRock – U.S. SAE	September 2000	Enhanced Large Cap Core	S&P 500
BlackRock Russell 2000 SAE	May 2019	Small Cap	Russell 2000
Janus	February 2012	SMID Cap Growth	Russell 2500 Growth
International Equity			
BlackRock – EAFE SAE	May 2019	Developed EAFE	MSCI EAFE Index (net)
BMO EAFE	May 2019	Developed EAFE	MSCI EAFE Index (net)
PanAgora Dynamic EAFE	May 2019	Developed EAFE	MSCI EAFE Index (net)
Wellington EM	February 2009	Global Emerging Markets	MSCI Emerging Markets (net)
BlackRock Emerging Markets SAE	May 2019	Global Emerging Markets	MSCI Emerging Markets (net)
Core-Plus Fixed Income			
Western	October 1999	Core Plus	Bloomberg Barclays U.S. Universal
BlackRock	October 1999	Core Plus	Bloomberg Barclays U.S. Universal
Principal Global Investors	May 2005	Core Plus	Bloomberg Barclays U.S. Universal
TCW	July 2015	Core Plus	Bloomberg Barclays U.S. Universal
Prudential	July 2015	Core Plus	Bloomberg Barclays U.S. Universal
Mackay Shields	November 2011	Core Plus	Bloomberg Barclays U.S. Universal
BlackRock Universal	November 2020	Relative Value	Bloomberg Barclays U.S. Universal
Prudential Universal	March 2021	Relative Value	Bloomberg Barclays U.S. Universal
Public Credit			
Prudential High Yield	June 2019	High Yield	Bloomberg US HY 2% Capped Index
Aegon USA	February 2012	High Yield	High Yield Policy Index
Prudential EMD	April 2016	Emerging Market Debt	JP Morgan EMBI Global
LARS			
Fort, LP	December 2016	Global Contrarian	Absolute Return
Graham Capital Management, L.P.	December 2016	Tactical Trend	Absolute Return
IPM Informed Portfolio Management AB	December 2016	Systematic Macro Strategy	Absolute Return
P/E Global LLC	December 2016	FX Strategy	Absolute Return
Wadhvani Asset Management LLP	March 2017	Keynes Leveraged Quantitative Strategy	Absolute Return

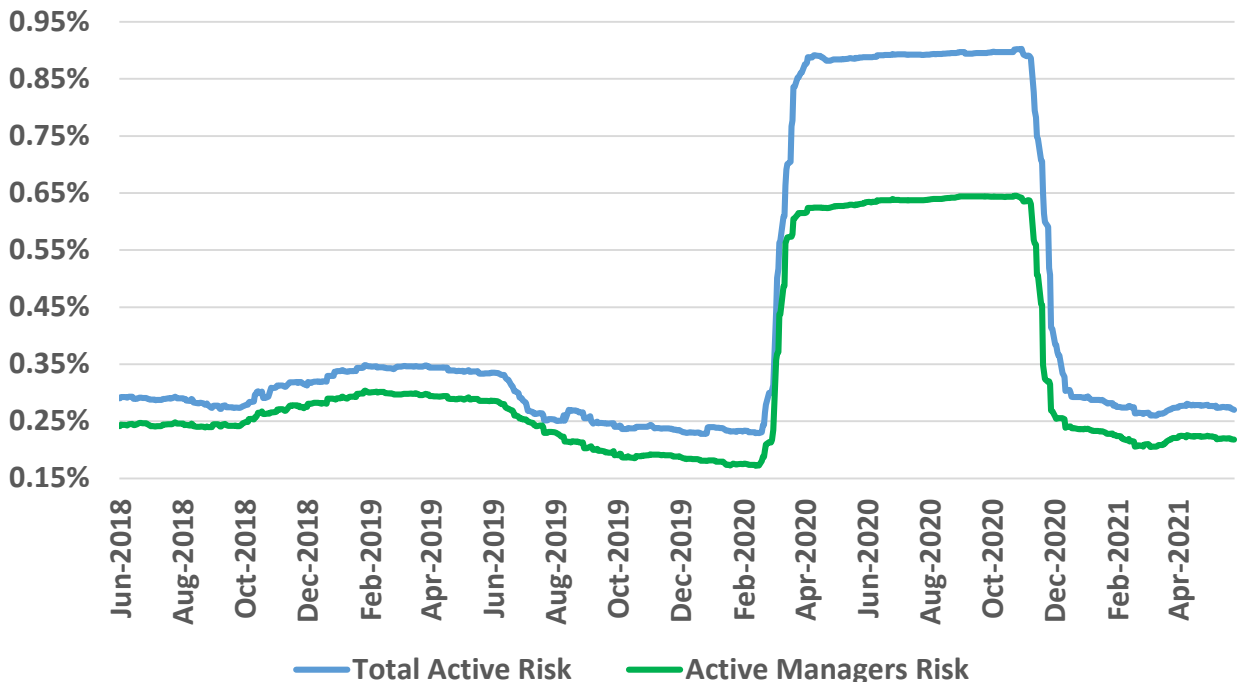
Active Risk –180 Days (May 2021)

	Active	Passive	Misfit	Total
Equities				
Domestic Equities	0.08%	0.00%	0.46%	0.08%
International Equities	0.13%	0.02%	0.04%	0.13%
Global Smart Beta Equities	-	0.01%	0.09%	0.01%
Fixed Income				
Core-Plus Fixed Income	0.12%	0.01%	0.02%	0.13%
Public Credit	0.04%	-	0.00%	0.04%
Cash/LARS	0.04%	-	-	0.04%
Asset Allocation	-	0.11%	-	0.11%
Total Public Markets	0.22%	0.11%	0.00%	0.27%

- Active risk is at normal pre-pandemic levels
- Core-Plus and International Equity managers are the largest contributor to active risk
- The 2 new FI - portable alpha managers are not included due to lack of sufficient history

Target	1.50%
Upper Limit	3.00%

External Active Risk –180 Days (May 2021)



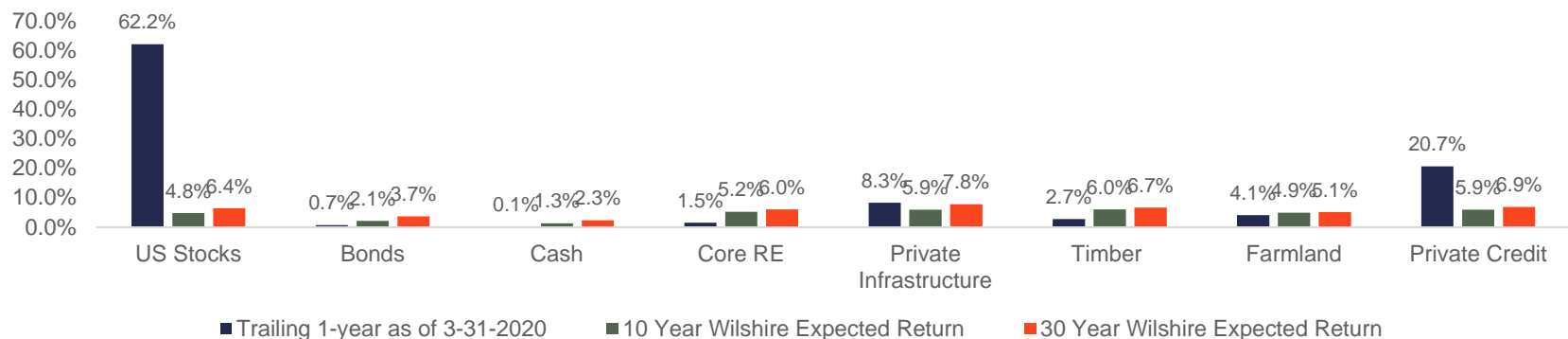
Market Themes

Alternatives

Wilshire

Market Performance

- Most asset classes have rebounded since the depths of the market downturn during the Covid-19 pandemic. Specifically, U.S. Stocks and Private Credit have experienced the strongest performance over the trailing 1-year.



	U.S. Stocks	U.S. Bonds	Cash	Private Core Real Estate	Private Infrastructure	Timber	Farmland*	Private Credit**
PERFORMANCE DRIVERS	New bull market formation within the U.S. stock market since COVID-19 lows. Volatility remains an ongoing issue.	Spreads have tightened significantly since COVID-19.	Federal Open Market Committee has held rates low following the pandemic, however increasing inflation could force future rate hikes.	Core real estate trailing 1-year returns have lagged expectations.	Infrastructure has largely remained resilient throughout COVID-19, with the exception of assets impacted by stay at home orders.	1-year trailing returns lagging expectations. Timber prices continue to rise with increased demand in housing market.	Farmland investments have continued steady returns based on stable commodity prices and strong demand throughout the pandemic.	Private credit investments experienced significant mark downs in Q1 2020 but have bounced back substantially due to fiscal intervention.

Chart Source: Wilshire Compass as of 3/31/2021, NCREIF, Wilshire long-term expected returns as of 1Q2021

*Farmland expected return based on commodity and real estate basket.


**Private Credit expected return based on Direct Lending, Mezzanine Debt, and Distressed Debt basket.

Investment Themes – North America

	REGIONAL CONTEXT	LOCAL OPPORTUNITIES
Macroeconomic Factors	<ul style="list-style-type: none"> • Re-Opening • Demographic Shifts • Consumer Recovery 	<ul style="list-style-type: none"> • Baby Boomers & Millennials • Non-Discretionary Services • Secular COVID Winners
Technology & Innovation	<ul style="list-style-type: none"> • Ubiquitous Connectivity • Tech-Driven Sector Disruption • Shifting Value Chain 	<ul style="list-style-type: none"> • Digital Content • Cybersecurity • e-Commerce Acceleration
Geopolitics	<ul style="list-style-type: none"> • Fiscal Stimulus • Tax Reform • Deglobalization 	<ul style="list-style-type: none"> • Sector-Focused Managers • Value-Added Infrastructure • Healthcare Refocus
Financial Markets	<ul style="list-style-type: none"> • Central Bank Policy & Rates • Valuation Risk • Inflation Potential 	<ul style="list-style-type: none"> • Special Situations • Uncorrelated Yield • Financial Product Innovation
	<ul style="list-style-type: none"> • Environmental Initiatives • Diversity and Inclusion • Wealth Redistribution 	<ul style="list-style-type: none"> • Energy Transition • WMBE Managers

North America Private Markets

Buyout 


Growth 

Venture 


Special Situations 

Credit 

Real Estate 

Natural Resources 

Infrastructure 

Alternative Yield 

-  Highly Favorable
-  Favorable
-  Neutral
-  Cautious
-  Unfavorable

Represents the current opinion of Wilshire as of the date of preparation and are subject to change without notice. Wilshire assumes no duty to update any such statements.

Investment Themes – Europe

	REGIONAL CONTEXT	LOCAL OPPORTUNITIES
Macroeconomic Factors	<ul style="list-style-type: none"> • Post-COVID Recovery • Demographic Shifts • Rise in Unemployment 	<ul style="list-style-type: none"> • Secular COVID Winners • Baby Boomers & Millennials • Non-Discretionary Services
Technology & Innovation	<ul style="list-style-type: none"> • Ubiquitous Connectivity • Tech-Driven Disruption • Shifting Value Chain 	<ul style="list-style-type: none"> • Digital Content, 5G • Cybersecurity, Big Data /AI • e-Commerce Acceleration
Geopolitics	<ul style="list-style-type: none"> • Fiscal Stimulus • Climate Change • Deglobalization 	<ul style="list-style-type: none"> • Value-Added Infrastructure • Energy Transition • Water Supply
Financial Markets	<ul style="list-style-type: none"> • Central Bank Policy & Rates • Inflation Potential • Bank Restraints 	<ul style="list-style-type: none"> • Special Situations • Uncorrelated Yield • Financial Product Innovation
	<ul style="list-style-type: none"> • Environmental Initiatives • Diversity and Inclusion • Wealth Redistribution 	<ul style="list-style-type: none"> • Renewable Energy • WMBE Managers • Healthcare and Life Science

Europe Private Markets	
Buyout	
Growth	
Venture	
Special Situations	
Credit	
Real Estate	
Natural Resources	
Infrastructure	
Alternative Yield	

-  Highly Favorable
-  Favorable
-  Neutral
-  Cautious
-  Unfavorable

Represents the current opinion of Wilshire as of the date of preparation and are subject to change without notice. Wilshire assumes no duty to update any such statements.

Investment Themes – Asia-Pacific

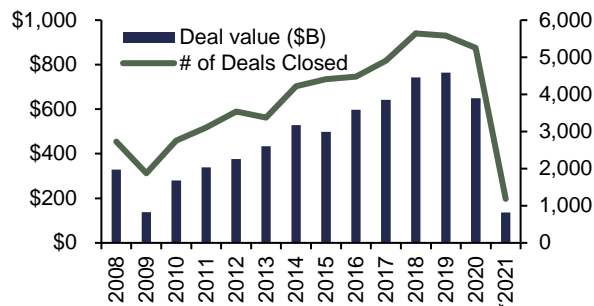
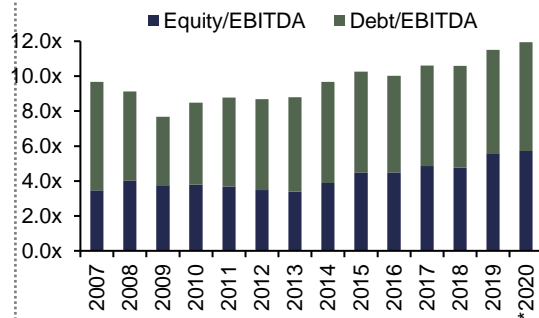
	REGIONAL CONTEXT	LOCAL OPPORTUNITIES
Macroeconomic Factors	<ul style="list-style-type: none"> • Post-COVID Recovery • Demographic Shifts • Shifting Focus on Quality Growth 	<ul style="list-style-type: none"> • Growing Middle-Class Wealth • B2B Enterprise Services • Healthcare
Technology & Innovation	<ul style="list-style-type: none"> • Technological Advancement • Maturing Venture Ecosystem • Accelerated Digital Adoption 	<ul style="list-style-type: none"> • New Consumption Trends and Lifestyle • Supply Chain Efficiency • Big Data / AI
Geopolitics	<ul style="list-style-type: none"> • US-China Trade War • China's "Dual Circulation" Policy 	<ul style="list-style-type: none"> • Domestic Demand and Consumption • Foreign Supply Replacement
Financial Markets	<ul style="list-style-type: none"> • Fiscal and Monetary Support Programs • Financial Market Reforms 	<ul style="list-style-type: none"> • Biotech and New Economy • Digital and Supply Chain • Real Assets
	<ul style="list-style-type: none"> • Environmental Initiatives • Education & Literacy • Healthcare Upgrade • Aging Population 	<ul style="list-style-type: none"> • Advanced Manufacturing • Renewable Energy • Education • Elderly Care and Healthcare

Asia-Pacific Private Markets	
Buyout	
Growth	
Venture	
Special Situations	
Credit	
Real Estate	
Natural Resources	
Infrastructure	
Alternative Yield	NA

-  Highly Favorable
-  Favorable
-  Neutral
-  Cautious
-  Unfavorable

Represents the current opinion of Wilshire as of the date of preparation and are subject to change without notice. Wilshire assumes no duty to update any such statements.

U.S. Buyout Outlook: Favorable

US PE DEAL FLOW¹PURCHASE PRICE MULTIPLES²US PE EXIT ENVIRONMENT BY EXIT TYPE³

REGIONAL INFLUENCES

- + Continued economic recovery and real GDP growth
- + Sustainable and renewable government spending
- ± Biden administration's global trade, healthcare, and immigration policies
- ± Wealth disparity
- ± High levels of dry powder due to robust fundraising in recent years
- Longer hold periods as a result of COVID-19
- Continued increase in purchase price multiples
- Potential increase in corporate tax rates

LOCAL CONSIDERATIONS

- Consumer prioritization of capital usage
- Shifting retail spending habits including shift to e-Commerce and non-discretionary spending initiatives
- Health awareness and healthcare access trends in post-pandemic "new normal"
- Increased adoption of technology and automation across numerous sectors
- Companies with predictable, recurring revenue and ability to withstand volatile market conditions
- Digital content, entertainment and online collaboration and content moderation

INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Industrial	●
Consumer	●
Healthcare	●
Financials	●
Technology	●
Diversified	●

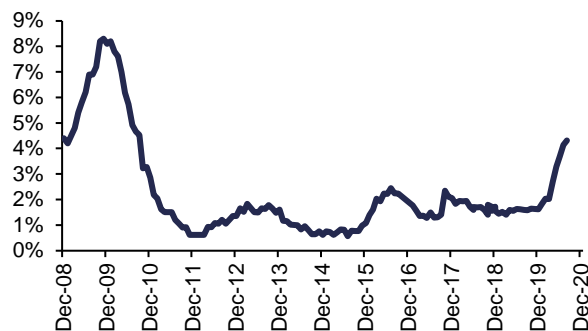
¹ Source: Pitchbook, US Deal Flow by Year *as of March 31, 2021.

² Source: S&P LCD Purchase Price Multiple as of December 31, 2020.

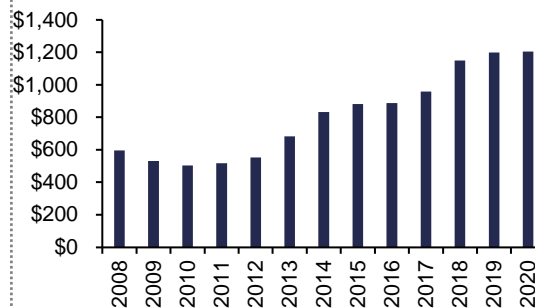
³ Source: Pitchbook, US PE-backed exits *as of March 31, 2021.

U.S. Special Situations Outlook: **Favorable**

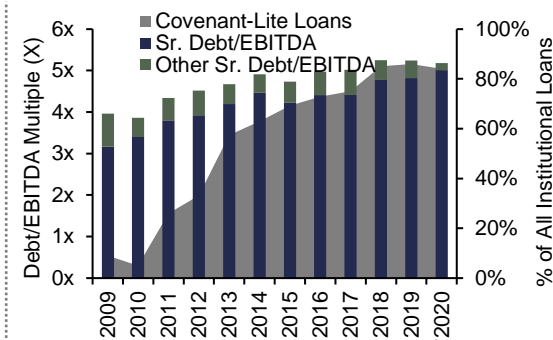
S&P/LSTA INDEX: LAGGING 12-MONTH DEFAULT RATE - # OF ISSUERS¹



S&P/LSTA INDEX: PAR AMOUNT OUTSTANDING OF LEVERAGED LOANS (B)¹



DEBT/EBITDA MULTIPLES & COVENANT LITE AS % OF ALL INSTITUTIONAL LOANS²



REGIONAL INFLUENCES

- + Significant secular shifts in numerous segments of the market
- + Long-term fallout from increased leverage and weakened balance sheets
- ± Biden administration's global trade, healthcare, and immigration policies
- ± Continued economic recovery and real GDP Growth
- ± Potential increase in interest rates causing varying impacts across sectors
- ± Potential increase in corporate tax rates
- High levels of dry powder and competition

LOCAL CONSIDERATIONS

- Lower middle market opportunities and sector specialization
- Accelerated secular trends surrounding brick and mortar retail as e-Commerce strengthens
- Technological disruption, including SaaS and cloud computing innovations
- Shifting trends in media and content consumption and content moderation
- Newly adopted healthcare concepts, including health preparedness and delivery
- Industrial and manufacturing sectors placing a significant emphasis on supply chain advancement and digitalization
- Enhanced government focus on sustainable and renewable investing

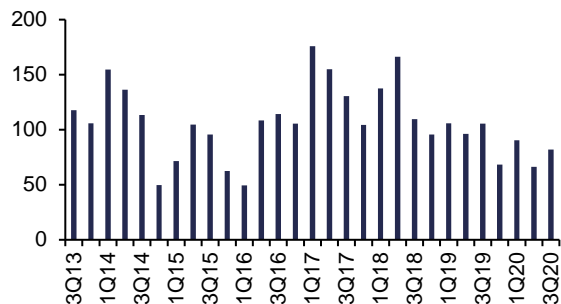
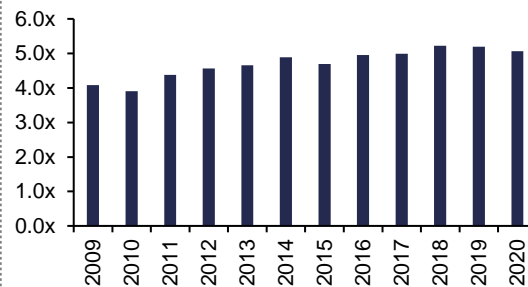
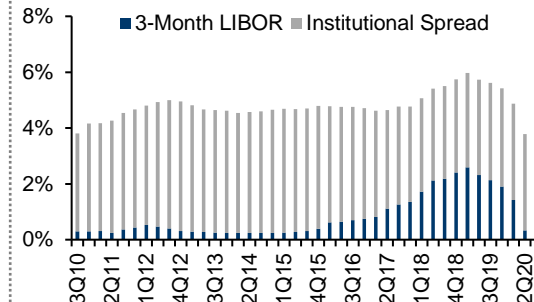
INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Industrial	📈
Consumer	📈
Healthcare	📈
Financials	📈
Technology	📈
Diversified	📈

¹ S&P LCD, *as of December 31, 2020.

² S&P LCD, *as of September 30, 2020.

U.S. Credit Outlook: **Neutral**

HIGHLY LEVERAGED LOAN VOLUME (B)¹HIGHLY LEVERAGED LOAN AVERAGE DEBT MULTIPLES²WEIGHTED AVERAGE ABSOLUTE INSTITUTIONAL RATE¹

REGIONAL INFLUENCES

- + Attractive historical risk-adjusted returns
- + Continued bank retrenchment following COVID-19
- + Private equity dry powder and robust M&A activity
- ± Uncertainties surrounding long-term effects of COVID-19
- ± Unprecedented initial economic stimulus, with potential for further fiscal spending
- ± COVID-related default spike initially; however, projected default rates remain modest
- Return to pre-COVID prevalence of covenant-lite issuance
- Increased competition and lack of differentiation weighs negatively on risk/return
- Sustained low interest rate environment

LOCAL CONSIDERATIONS

- Favorable complexity premium
- Fixed versus floating rate debt
- Short-term and long-term stressed/distressed debt opportunities
- All-weather opportunistic/special situations credit strategies
- Non-sponsored versus sponsored direct lending in post-COVID environment
- Defensive-oriented sectors less impacted by COVID-19 related shutdowns than more historically cyclical industries
- Transition away from LIBOR to new reference rate

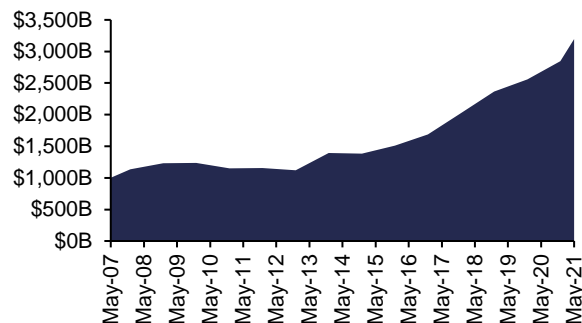
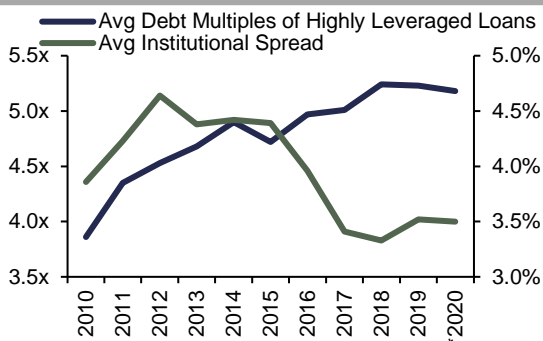
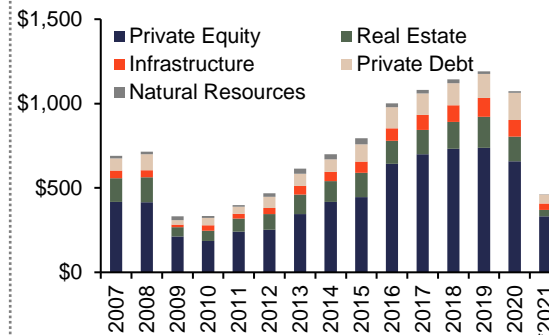
INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Opportunistic	●
Distressed Debt	●
Direct Lending	●
Mezzanine	●

¹ S&P LCD, *as of September 30, 2020

² S&P LCD, *as of December 31, 2020

U.S. Non-traditional Assets Outlook: **Favorable**

GLOBAL PRIVATE CAPITAL DRY POWDER¹LEVERAGED LOAN RETURN VS. RISK²PRIVATE CAPITAL FUNDRAISING³

REGIONAL INFLUENCES

- + Appetite for uncorrelated contractual cash flows above capital appreciation driven returns
- + Nominal and real interest rates near zero
- + More favorable capital supply-demand dynamics driven by pre-requisite for specialization and typically higher margins of safety relative to traditional assets
- + Increasing regulations as well as stimulus by government entities globally
- ± Overall minimal adverse COVID-19 effects on many non-traditional assets, with some tailwinds being created in certain strategies as well
- ± Capital inflows to digital assets (i.e., media, crypto) as well as lack of regulatory clarity present risk and opportunity

LOCAL CONSIDERATIONS

- Specialty finance opportunities focused on tech-enabled solutions in novel asset classes or via novel platforms
- Concentrated digital content exposure e.g., music royalties
- Enterprise software credit backed by contractually recurring revenue
- Floating rate post-FDA life science credit
- Senior secured metals and mining debt as well as streaming, royalties and other income solutions
- Litigation finance credit
- Mortality based risk transfer solutions such as life contingent structured settlements and/or life settlements
- Government-focused financing solutions to facilitate Biden administration fiscal and monetary stimulus goals

INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Niche (Sector) Credit	●
Specialized Asset-Based Lending	●
Risk Transfer Strategies	●
Intangible Assets	●

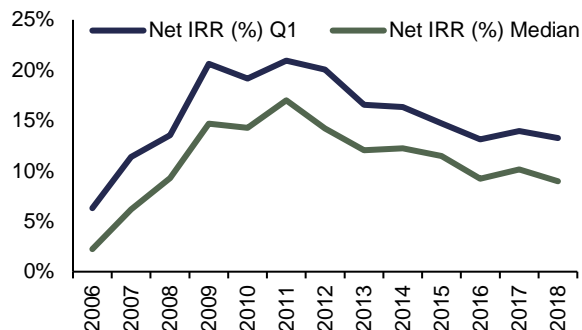
¹ Source: Preqin as of May 6, 2021.

² Source: S&P LCD *as of September 30, 2020

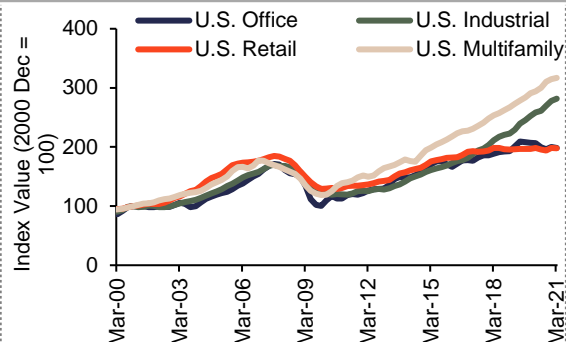
³ Source: Preqin *as of May 6, 2021.

U.S. Real Estate Outlook: **Favorable**

VINTAGE YEAR PERFORMANCE¹



U.S. PROPERTY TYPE PRICING INDICES²



INDUSTRY OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Office	📊
Retail	📊
Multifamily	📊
Industrial	📊
Hospitality	📊
Niche	📊

REGIONAL INFLUENCES

- + Demographic shifts due to growth of millennial population / aging baby boomers
- + Current low interest rate environment
- + Positive attributes during a possible higher inflationary period following the dislocation
- ± COVID-19 impact on sectors
- High levels of dry powder
- Potential for rising interest rates
- Slowed transaction activity and continued price discovery in select sectors following the dislocation
- Elevated unemployment rate

LOCAL CONSIDERATIONS

- Increased outpatient care and aging population creating demand for medical properties
- Secular shift towards e-commerce continues to create demand for well-located industrial properties focused on logistics
- Supply and demand imbalance for single family homes and other niche residential properties
- Valuation corrections and leasing / rent growth assumptions
- Emphasis on resilient sectors and high-quality assets in markets demonstrating faster recoveries and strong job growth
- Select deep distressed opportunities in office, retail, and hospitality

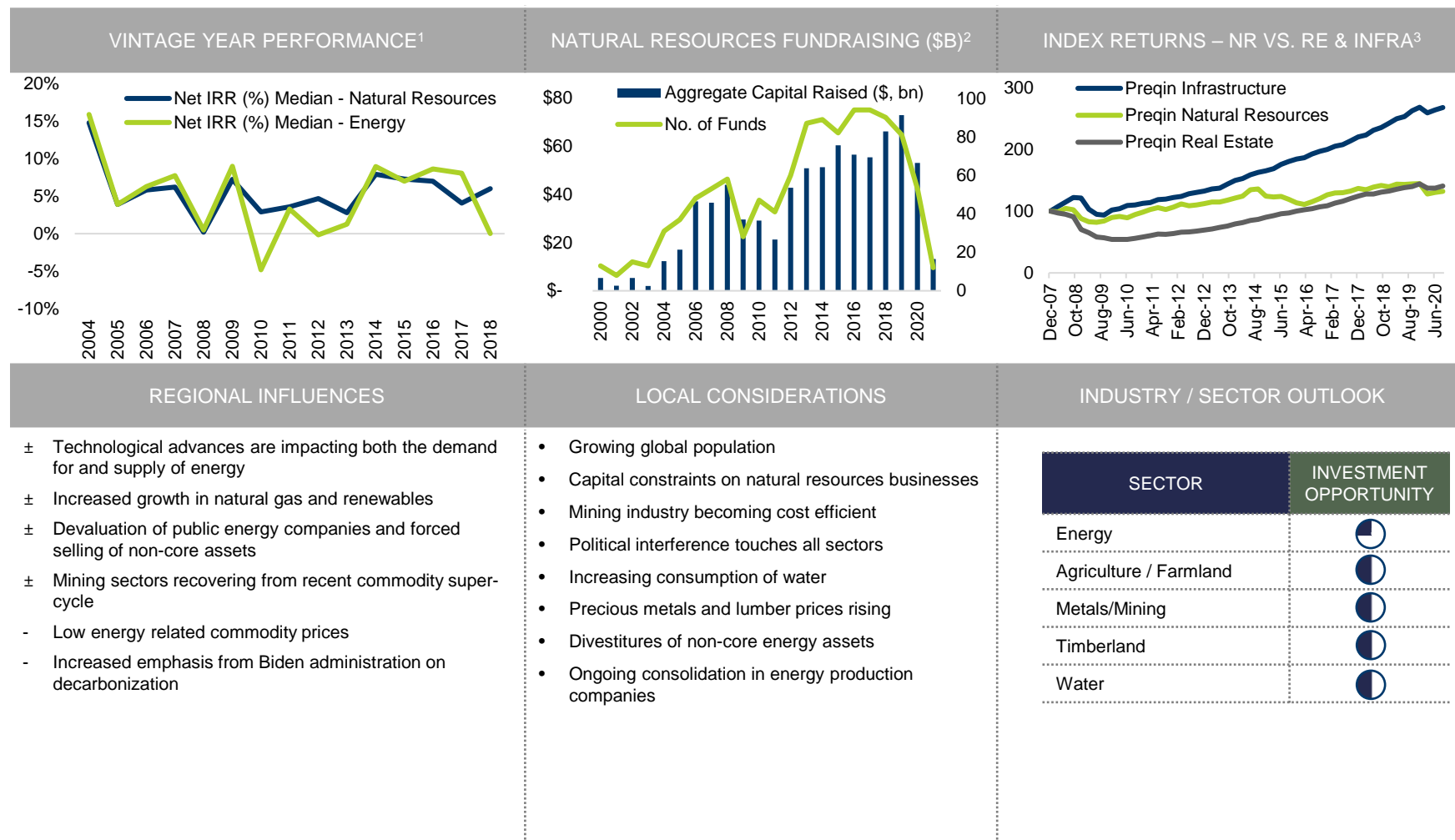
SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Core	📊
Core Plus	📊
Value-Added	📊
Opportunistic	📊
Debt	📊

¹ Preqin North America Real Estate benchmark, as of most up-to-date (May 6, 2021). Note: inadequate number of funds prevents quartile analysis in certain vintage years.

² CoStar Commercial Repeat-Sale Indices (CCRSI), CoStar Group. Value weighted data. Data through March 2021.

U.S. Natural Resources Outlook: Cautious

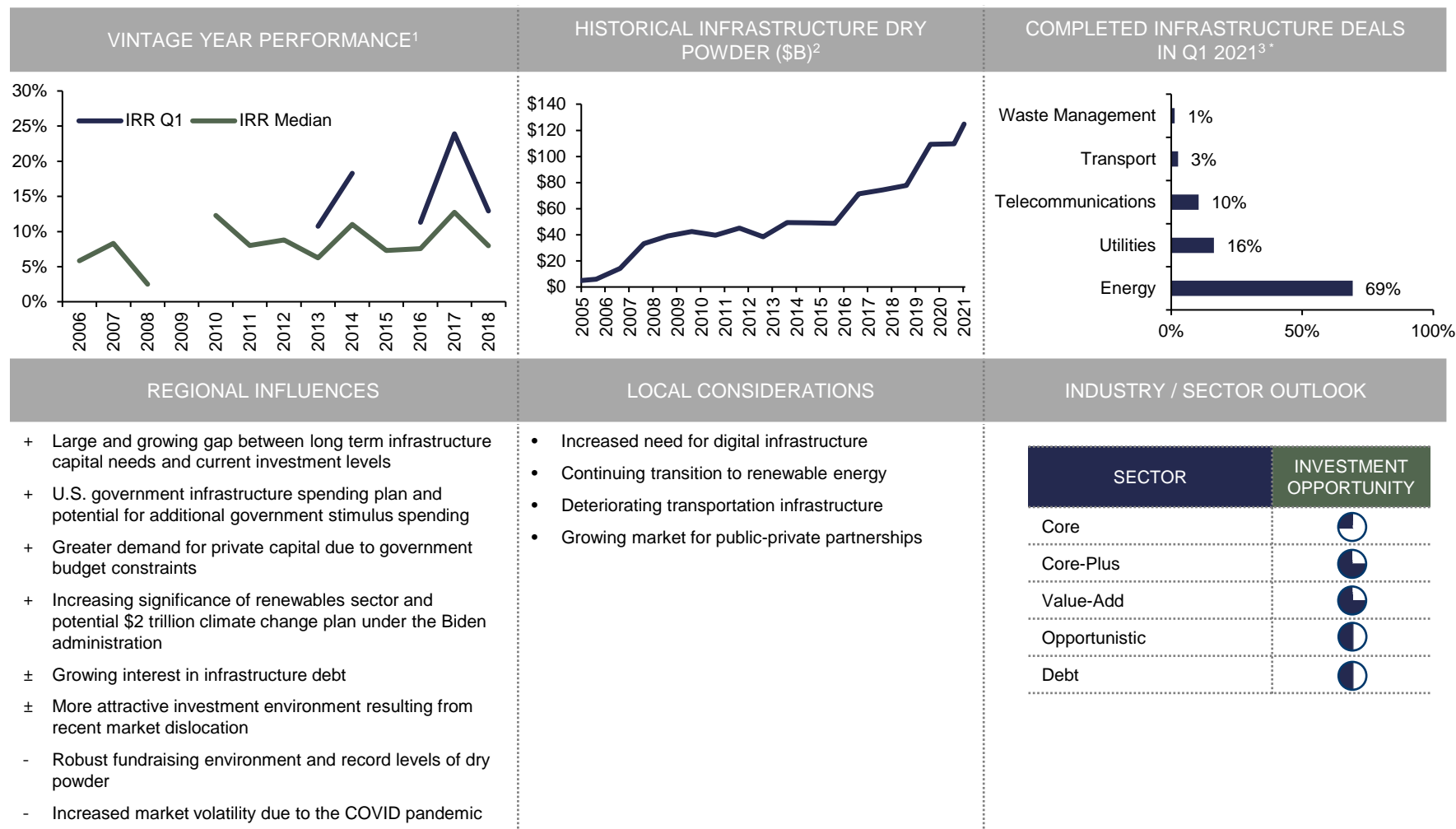


¹ Preqin North America Natural Resources benchmark, as of most up-to-date (May 6, 2021). Note: inadequate number of funds prevents quartile analysis in certain vintage years.

² Preqin Private Capital Fundraising Update as of May 6, 2020

³ Preqin Quarterly Index, most up to date as of September 30, 2020.

U.S. Infrastructure Outlook: **Favorable**



¹ Preqin North America Infrastructure benchmark, as of most up-to-date (May 6, 2021) Note: inadequate number of funds prevents quartile analysis in certain vintage years.

² Preqin North America Infrastructure Dry Powder, as of May 6, 2021.

³ Preqin North American completed Infrastructure deals, as of March 31, 2021.

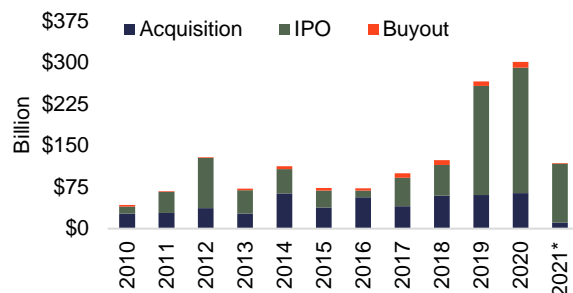
Appendix

Market Outlook

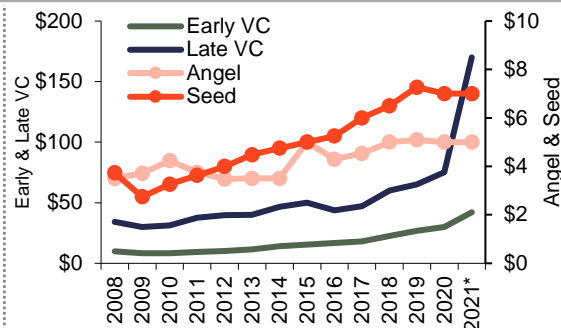
Wilshire

U.S. Venture Outlook: Neutral

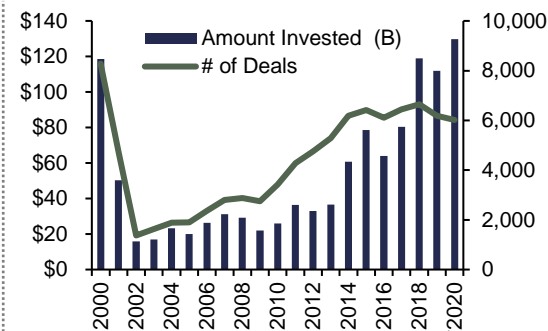
EXIT ACTIVITY¹



MEDIAN PRE-MONEY VALUATIONS (\$M)¹



INVESTMENT ACTIVITY²



REGIONAL INFLUENCES

- + Acceleration of tech-driven sector disruption
- + Strong exit environment
- + Resilience of venture as an asset class during COVID
- Elevated levels of dry powder from strong fundraising in recent years
- Strong fundraising continues with over \$30 billion raised in Q1 2021, a record-setting pace¹
- Continued increase in capital raised by billion-dollar funds, while first-time funds continue to struggle

LOCAL CONSIDERATIONS

- Supply chain tech including last-mile delivery services and e-commerce
- Emergence of technology "hubs"
- AI, blockchain, cybersecurity, BI and analytics
- Biotechnology and healthcare tech
- Gaming industry momentum
- Baby boomers, millennials and gen Z
- ESG-focused funds and new administration's favorable policy towards sustainable investing
- Tools for hybrid workplace
- Emerging food and beverage products

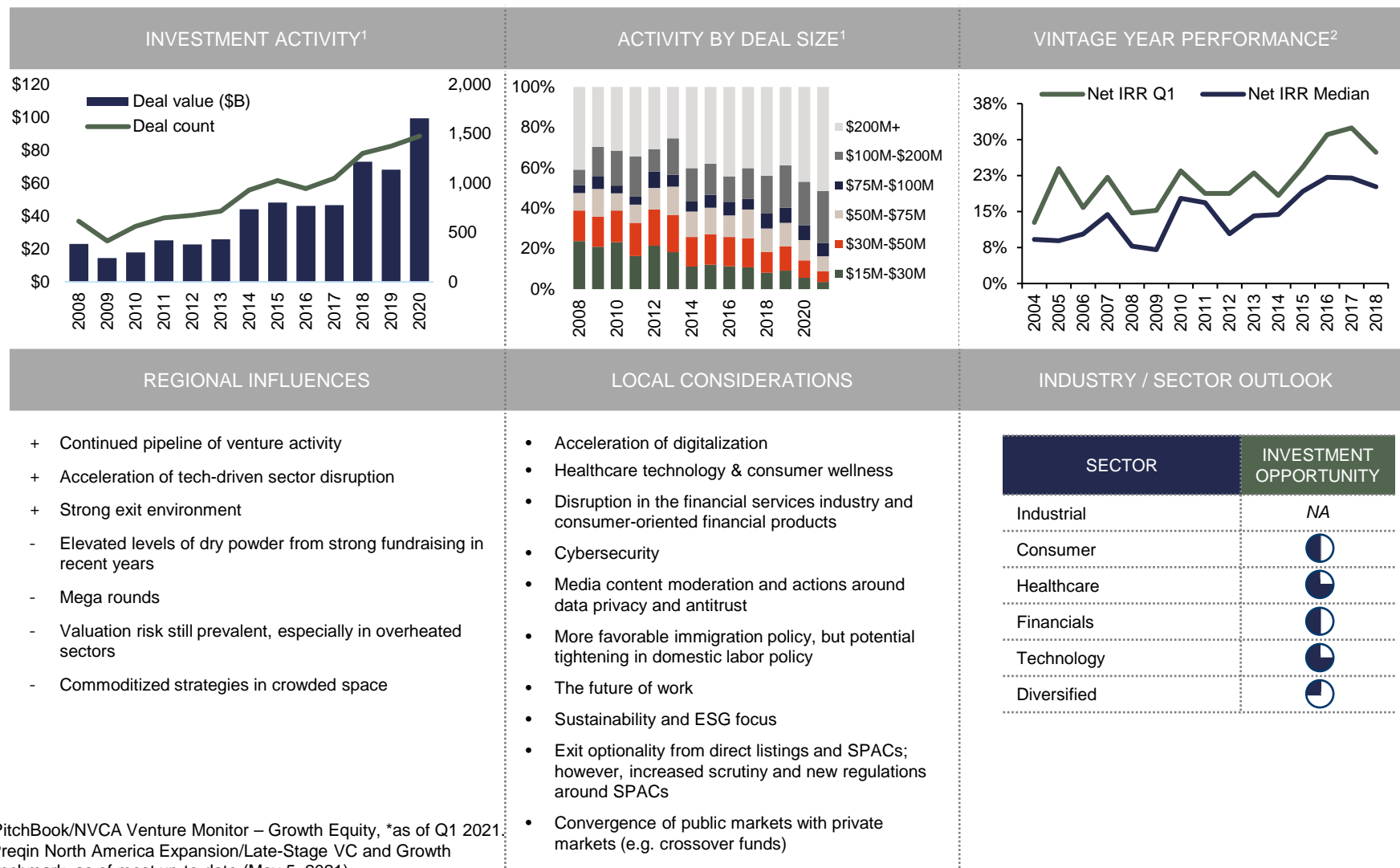
INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Industrial	●
Consumer	●
Healthcare	●
Financials	●
Technology	●
Diversified	●

¹ PitchBook/NVCA Venture Monitor *as of Q1 2021.

² PwC/CB Insights MoneyTree Report *as of Q4 2020.

U.S. Growth Outlook: **Neutral**

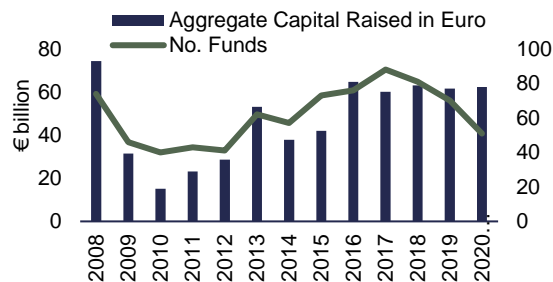


¹ PitchBook/NVCA Venture Monitor – Growth Equity, *as of Q1 2021.

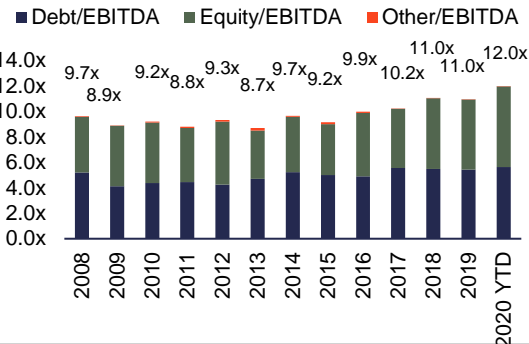
² Preqin North America Expansion/Late-Stage VC and Growth benchmark, as of most up-to-date (May 5, 2021).

Europe Buyout Outlook: **Favorable**

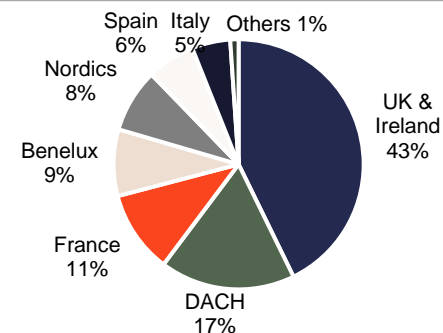
FUNDRAISING



LBO PURCHASE PRICE MULTIPLES



VOLUME OF BUYOUT DEALS BY REGION



REGIONAL INFLUENCES

- + Regional diversity of Europe
- + Large SME (and buy & build) opportunity
- + Increasing trend towards sector specialization
- + Sustainable and renewable government spending
- ± Average equity contributions of around 50%
- Bifurcated fundraisings, increased fund sizes and record headline pricing
- Geopolitical tensions, Brexit, trade wars, CEE
- COVID-19 has resulted in longer hold periods and a reduction in exits

LOCAL CONSIDERATIONS

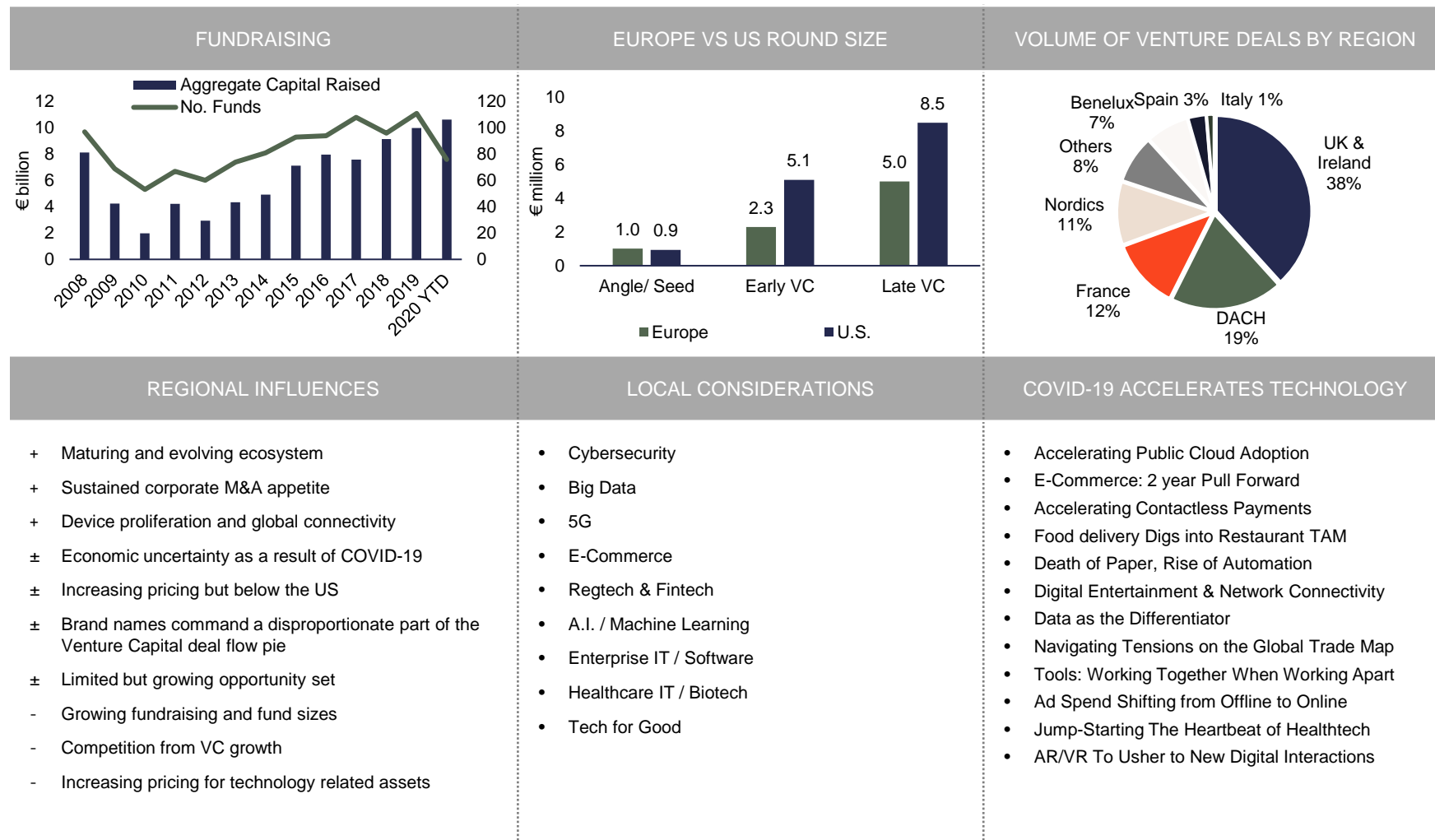
- e-Commerce
- Software
- Data & Digital
- Responsible Products & Impact Services
- Non-Discretionary Services
- Health(care) Services & Products
- Education & Training
- Financial Services & Products

INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
UK/Ireland	●
Nordics	●
Benelux	●
DACH	●
France	●
Spain/Portugal	●
Italy	●
CEE & Turkey	○

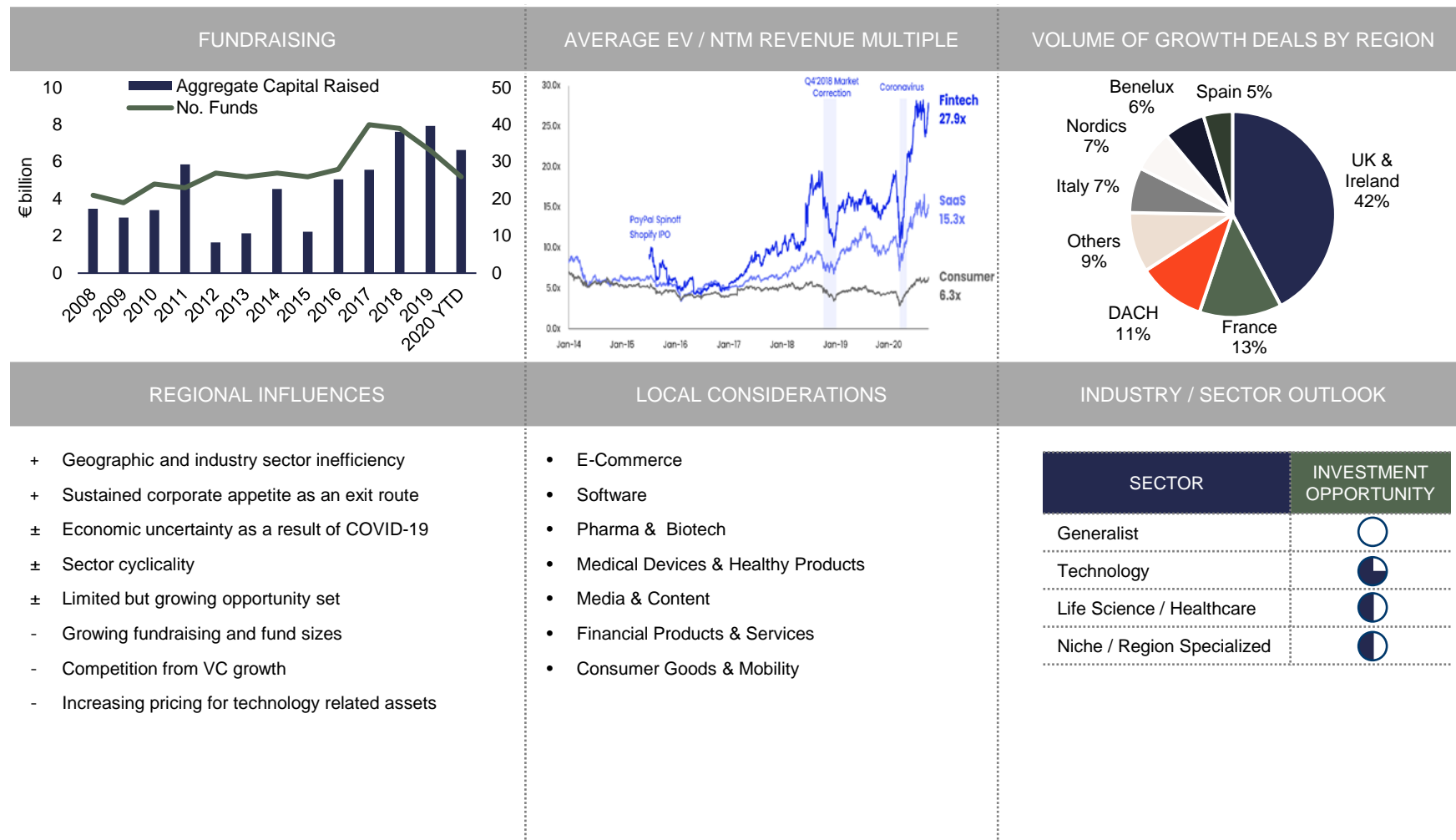
Sources: Preqin, accessed November 2020; S&P as of Q3 2020; Pitchbook, accessed November 2020.

Europe Venture Outlook: **Favorable**



Sources: Preqin, accessed November 2020; KPMG Venture Pulse Q3 2020; Pitchbook, accessed November 2020; Morgan Stanley, June 2020, Top Trends Post COVID-19.
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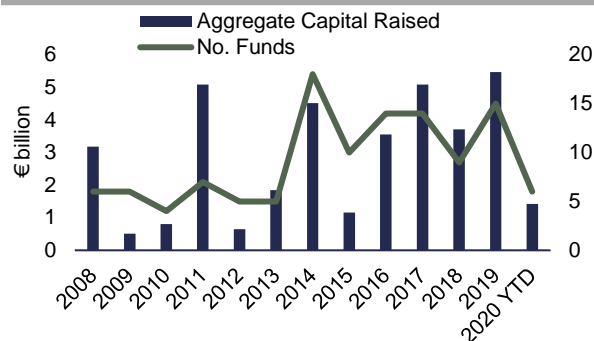
Europe Growth Outlook: Cautious



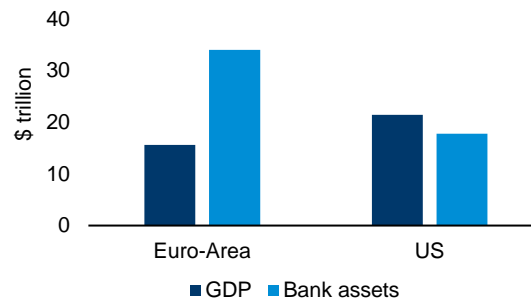
Sources: Preqin, accessed November 2020; Highland Europe, Qatalyst, Market prices based on CapitalIQ as of 1 Oct. 2020; Pitchbook, accessed November 2020.

Europe Special Situations Outlook: Highly Favorable

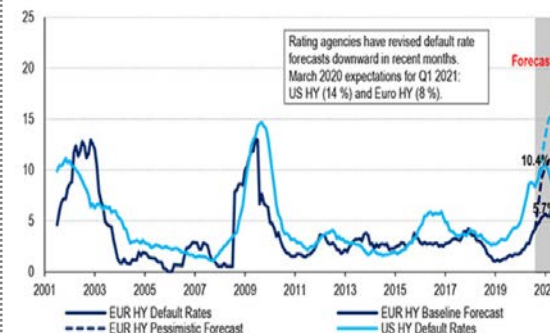
FUNDRAISING



OVERCAPACITY EUROPEAN BANKING



12M FORWARD DEFAULT RATE (%)



REGIONAL INFLUENCES

- + Diversity of Europe
- + Anticipated rising corporate default rate
- + Bank disposals due to rules and low profitability
- ± Economic uncertainty as a result of COVID-19
- Covenant-lite leveraged loans
- Relatively small opportunity set

LOCAL CONSIDERATIONS

- Turnarounds
- Restructurings
- Di(stressed)
- Debt-for-control
- Good companies with bad balance sheets
- Companies with a scratch
- Complex capital structures
- Asset intensive

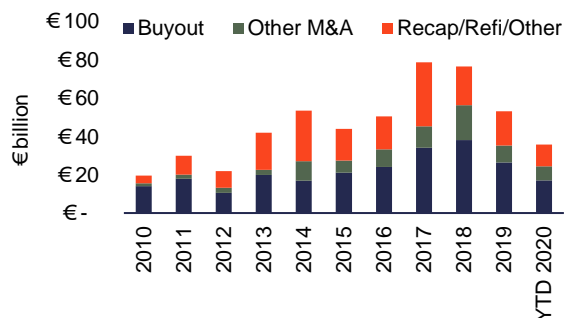
INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
UK/Ireland	●
Nordics	●
Benelux	●
DACH	●
France	◐
Spain/Portugal	◐
Italy	◐
CEE & Turkey	○

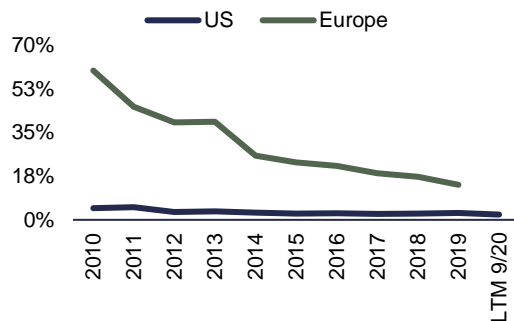
Sources: Preqin, accessed November 2020; Chorus: ECB, Worldbank, Federal Reserve Bank of St. Louis, Q4 2019; Moody's Amundi Research November 2020.

Europe Credit Outlook: Neutral

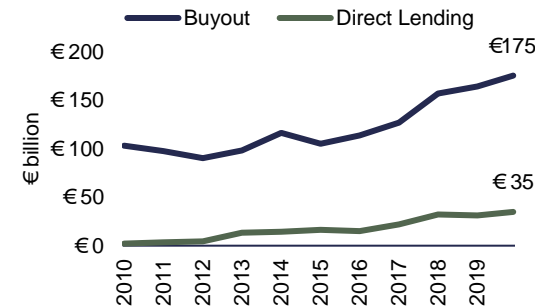
EUROPEAN SPONSORED LOAN VOLUME



EUROPEAN BANKS SHARE OF THE PRIMARY MARKET



EUROPEAN DRY POWDER



REGIONAL INFLUENCES

- + Attractive historical risk-adjusted returns
- + Continued bank retrenchment following COVID-19
- + Strengthening of new loan issuance terms post-COVID
- ± Macroeconomic and sector cyclicality
- ± Unprecedented Central Bank economic stimulus
- ± Increasing default rates
- Pre-COVID prevalence in covenant-lite issuance
- Increased competition and lack of differentiation
- Sustained low interest rate environment

LOCAL CONSIDERATIONS

- Strong demand and growth
- Large amount of dry powder in the buyout market, exceeding the credit market
- Favorable complexity and mid-market premium
- Concentration of large high-quality, often global players in the direct lending space
- Short-term and long-term stressed/distressed debt opportunities
- Defensive-oriented sectors less impacted by COVID-19 shutdown than more historically cyclical industries

INDUSTRY / SECTOR OUTLOOK

SECTOR	INVESTMENT OPPORTUNITY
Opportunistic	●
Distressed Debt	●
Direct Lending	●
Mezzanine	●

Sources: S&P LCD Q3 2020; Preqin as of November 24, 2020.

U.S. Real Estate Industry/Sector Outlook

SECTOR	INVESTMENT OPPORTUNITY	RATIONALE
Core		Valuation corrections for select funds may present a timely opportunity for investors seeking core real estate exposure. However, investors should be cautious regarding funds with considerable retail exposure that have likely experienced recent stress. Modest appreciation expectations going forward and a continued emphasis on income over the short and long term remain key reasons to invest.
Core Plus		Core-plus opportunities continue to face increasing competition from core investors seeking higher total returns and value-add investors seeking to lower their overall risk profile. Valuation corrections as a result of COVID-19 may provide investors with a more attractive opportunity to invest. Assets may provide stability in the short-term, but may also offer an inferior risk-return proposition if core-plus investors' appetite for risk increases as the market continues to recover.
Value-Add		Value-add initiatives at properties have largely resumed in most U.S. regions but may have extended holding periods for existing portfolios. While transaction activity has remained strong in more resilient sectors, activity in more affected sectors has been diminished and remains focused on high-quality, stabilized properties in the near-term. The re-pricing of rent growth assumptions, tenant rollover, and overall risk will likely lead to attractive buying opportunities as capital is increasingly put back to work, particularly in sectors and properties more acutely affected by the pandemic.
Opportunistic		Managers with flexible approaches to investing across the capital structure and various sectors of the real estate market will be poised to capitalize on the distress brought on by COVID-19, which should continue to manifest in certain sectors even as the market recovers. Select development and re-development deals should provide an opportunity for excess returns as the market stabilizes, but input costs remain a key consideration.
Debt		The opportunity to purchase distressed commercial real estate debt at attractive spreads may be available as distress continues to manifest itself in the market. While the recovery has helped stabilize the debt market in some sectors, depressed rent collections and tenant turnover could result in stress for loan repayments in other sectors. Importantly, a long-term need for capital will magnify an opportunity for private lenders to replace traditional lenders similar to the post-GFC cycle as the market continues its recovery. Interest rate changes and their impact on the market should be closely monitored.

U.S. Real Estate Industry/Sector Outlook

SECTOR	INVESTMENT OPPORTUNITY	RATIONALE
Office		Asset performance is closely tied to economic activity and general uncertainty surrounding the sector persists in the near-term. Potential stressed and distressed asset pricing in strong markets could generate attractive acquisition opportunities as transaction activity increases. Leasing activity has begun to resume in certain markets tied to faster recovery and job growth but remains dormant in others. Long-term implications of recent work-from-home orders and their impacts on leasing, tenant rollover, and rent growth assumptions should be monitored.
Retail		Continued dislocation was further exacerbated by the economic shutdown and should continue to accelerate the shift to e-commerce. Transaction activity has been limited, but demand remains for the highest quality assets with stable tenants that demonstrated resiliency throughout the pandemic. Grocery-anchored and distressed opportunities will exist, but sector expertise is paramount.
Multifamily		Multifamily has demonstrated resiliency in recent history due to secular trends where both need and preference for renting over owning has persisted, with the potential to be magnified in a longer recessionary period. Competition in the sector and rental growth expectations are keys to underwriting as the market recovers. The potential elimination of both the CDC eviction moratorium and further government stimulus should also be monitored given their likely impact on multifamily assets during the pandemic.
Industrial		Secular shift towards e-commerce was accelerated by COVID-19 and continues to drive interest in last mile properties. As a result, pricing and demand for industrial properties were largely unaffected, or even heightened, by the market dislocation. Competition and allocations from generalist funds have also increased, but fundamentals remain in place for strong returns in select geographical locations and through aggregation plays that may drive premium pricing for portfolios.
Hospitality		The hospitality sector has been severely impacted by the lack of travel as a result of COVID-19. Distressed opportunities and attractive pricing will likely manifest as the recovery continues and travel resumes; although the recovery of hospitality has typically lagged other sectors during prior cycles. In the near-term, the performance of resort and leisure properties versus those more closely tied to business travel will provide further insight into the sector's outlook. Other potential unknown secular changes resulting from the pandemic should be monitored.
Niche		Favorable demographic trends and resiliency through prior economic downturns support investments in self-storage, medical office buildings, and niche residential property types. Student housing has performed well during the pandemic despite online classes in select locations and senior housing occupancy is expected to increase as vaccine distribution continues and restrictions are lifted. The dislocation has the potential to create attractive distressed opportunities in these two property types over time. Demand for single family rental investments has also increased as a result of the supply and demand imbalance for homeowners. In addition to residential assets, demand for data center assets has surfaced in recent years amidst the continuing importance of IT connectivity and solutions.

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HEADQUARTERS

1299 Ocean Avenue, Suite 700
Santa Monica, CA 90401

Wilshire

Private Markets Program

Annual Review

IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Presented to the IPERS
Investment Board**

By Pat Reinhardt, SIO - Alternatives

June 17, 2021



Program Structure *(as of 3/31/21)*

Private Markets Program (PMP)

Target AUM = \$11,891.0 M

Actual AUM = \$10,012.1 M

Private Equity

Target AUM = \$5,240.1 M

Actual AUM = \$6,761.3 M

Target = 13.0%

Actual = 16.8%

Private Credit

Target AUM = \$3,224.7 M

Actual AUM = \$1,111.7 M

Target = 8.0%

Actual = 2.8%

Private Real Assets

Target AUM = \$3,426.2 M

Actual AUM = \$2,139.2 M

Target = 8.5%

Actual 5.3%

- ✓ The three portfolios serve complementary roles within the program and at the total fund level. The role of private equity is to provide excess returns over the public equity markets; private credit provides excess returns over the public credit markets, diversification and income; while private real assets provide diversification, income and an inflation hedge.
- ✓ Target allocations for the private markets portfolios were changed as of October 1, 2020: private equity 11% to 13%, private credit 3% to 8% and private real assets 7.5% to 8.5%.

2021 Investment Plan and Progress to Date

At May 29, 2021 • (\$ in millions)

	Planned
Commitments	\$2,260
Target Size by Portfolio	Private Equity \$960; Private Credit \$1,000; Private Real Assets \$300

Actual Commitments to Date and Potential Near-Term Commitments

Portfolio	2021 Investment Plan	Commitments to Date	Uncommitted Capital
Private Equity	\$960	\$770	\$190
Private Credit ¹	\$1,000	\$900	\$100
Private Real Assets	\$300	\$300	\$0
Total	\$2,260	\$1,970	\$290

¹ A \$100 million add-on commitment was made to KKR - increasing the Investment Plan commitments from \$900 to \$1,000 million for Private Credit.

- ✓ For private credit, the original plan of \$900 million anticipated \$850 million to strategies identified in the opportunistic credit search and a \$50 million add-on commitment to our existing BlackRock mandate. As of May, we have made and/or plan to make the following new and add-on commitments: Crestline \$250M, Marathon \$250M, Audax \$125M, Ares \$125M, KKR \$100M and BlackRock \$50M.
- ✓ The \$300 million commitment to private real assets is for our investment in the Brookfield Super-Core Infrastructure Fund. As of May, no capital has been invested.

Updates and Priorities

UPDATES

- ✓ Private equity legacy portfolio wind-down
- ✓ Private credit portfolio structure
- ✓ Private real assets allocation gap

PRIORITIES

- ✓ Complete contracting and ODD for approved managers from the opportunistic private credit search
- ✓ Initiate private real assets credit search
- ✓ Initiate a private real assets equity search

Private Equity

Portfolio Review

Private Equity Portfolio Structure

Private Equity
\$6,761.3 Million¹

Legacy Separate Account Portfolio
Non-Discretionary (1985 – 1992)
Pathway Discretionary (1993 – 2013)
\$1,674.1 Million¹

PPEF XXV
Fund of Funds (2014 – Present)
\$5,087.2 Million¹

- ✓ As of March 31, 2021, private equity's actual allocation was 16.8%, which is down from 17.0% one year prior.
- ✓ Driven by strong appreciation in the value of the portfolio's holdings, private equity exposure remains temporarily elevated. As these appreciated holdings are realized, private equity exposure is expected to decline.
 - ✓ Over the 1-year period ending March 31, 2021, the portfolio received distributions totaling \$1.1 billion – the largest distribution total over any 1-year period – exceeding contributions by \$454 million.

¹Based on the program's actual market values as of 12/31/20 and cash activity through 3/31/21.

Pathway Portfolio Performance *(Inception 1993)*

IRR Performance*

	3-Year	5-Year	10-Year	Inception (1Q93)
Pathway Capital Management	24.2%	20.8%	16.4%	16.8%
Program Objective**	20.3%	19.9%	16.6%	12.0%
Excess Returns	3.9%	0.9%	-0.2%	4.8%
Custom Benchmark***	11.9%	15.4%	15.4%	10.4%
Excess Returns	12.3%	5.4%	1.0%	6.3%

Financial Summary (At December 31, 2020)

Inception: 1993

1-Year Net IRR: 35.3%

Since-Inception Net-Net IRR:
16.8% (1993-2020)

Total Investments: 464

1-Year **Record** Net Gain: \$1.9 billion

DPI:¹ 1.2x

Total Managers: 102

1-Year **Record** Distributions: \$1.1 billion

TVPI:² 1.8x

Manager Evaluation: ↑ Organization ↑ Personnel ↑ Investment Process ↑

*All calculations are based on final partnership valuations through 12/31/2020 and cash activity through 3/31/21.

**Program Objective is Wilshire 5000 + 300 bps.

***For an explanation of the Custom Benchmark see the second bullet in Appendix A.

NOTE: Additional performance summary pages for the private equity program and Pathway are available in Appendix B and Appendix D

¹Distributions to paid-in capital.

²Total value to paid-in capital (DPI + RVPI).

Private Equity Co-Investment Program (As of 12/31/20)

GROWING PORTFOLIO

80/\$633mm

Co-investments

29

of Managers

ECONOMIC BENEFITS

\$144mm

Est. Fee and Carry Savings

25.7%

Co-investment Portfolio
Since-Inception Net IRR

PATHWAY SECURING OUTSIZED EXPOSURE

1.7%

Average Ownership
of Funds

8.1%

Average Allocation of
Available Co-investment

- ✓ IPERS' co-investment program remains in compliance with the parameters set forth in the investment policy, including for exposure in terms of current cost, which represents 11% and is below the cap of 15%.

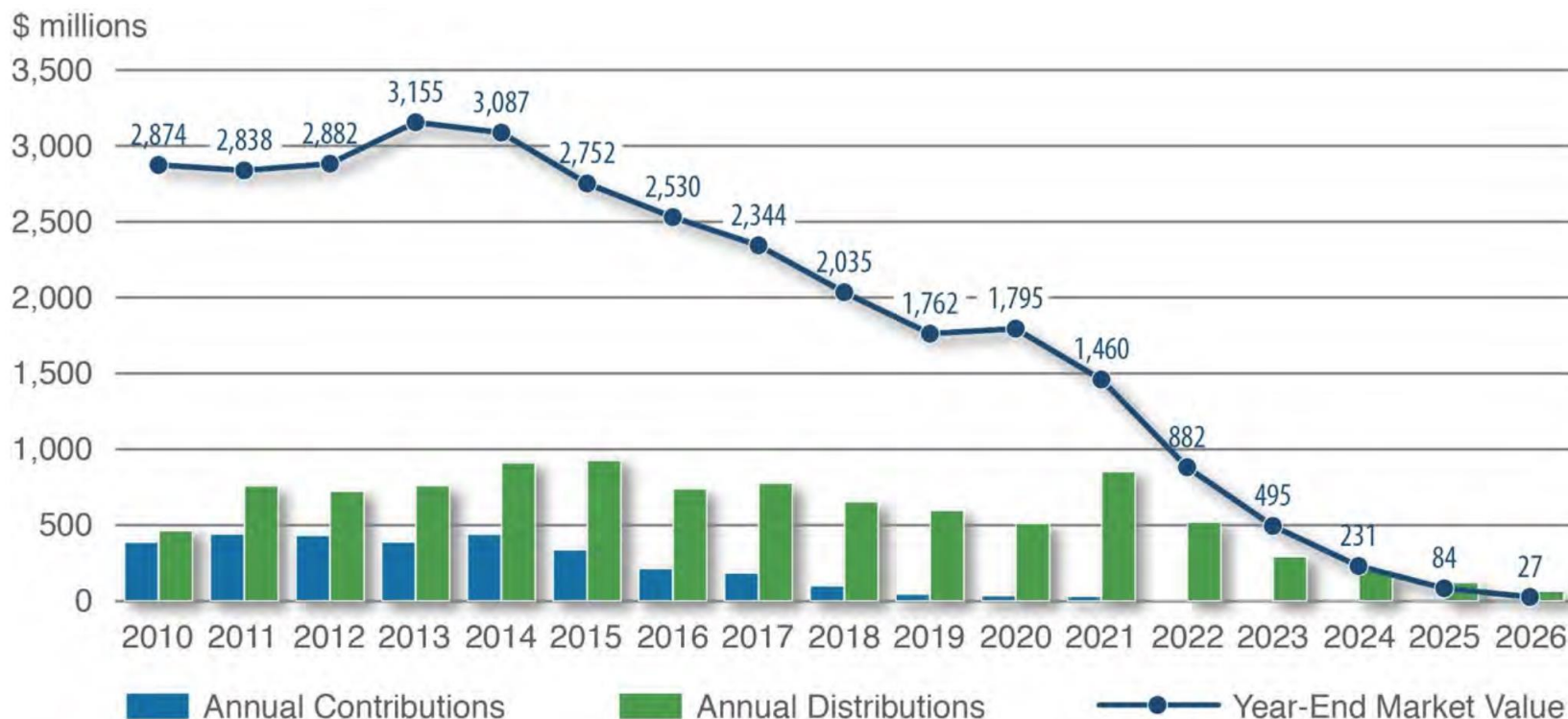
Private Equity Legacy Portfolio

- ✓ IPERS' legacy portfolio consists of 271 partnership commitments made between 1987 and 2014, of which 157 are active. As of March 31, 2021, the legacy portfolio had a market value of \$1.7 billion¹.
- ✓ Each of the active partnerships has completed its investment period and is in the process of winding down.
 - ✓ The portfolio's market value has declined steadily and is projected to fall below \$100 million within the next 5 years.
- ✓ Despite its mature age, the legacy portfolio has continued to generate attractive returns that outperform broader public market returns.
- ✓ Pathway is closely overseeing the wind-down of the legacy portfolio to ensure that investments are realized in an optimal and timely manner.
 - ✓ Monitoring current funds to identify potential issues or conflicts
 - ✓ Active engagement with managers regarding the portfolio
 - ✓ Evaluation of the future return prospects compared to the potential proceeds from a secondary sale.
- ✓ Over the next several years, the legacy portfolio is projected to continue to generate value and meaningful distributions from its underlying investments.

¹Based on the program's actual market values as of 12/31/20 and cash activity through 3/31/21.

Private Equity Legacy Portfolio (Continued)

IPERS' LEGACY PORTFOLIO MARKET VALUE PROGRESSION



NOTE: Figures for 2010 through 2020 represent actuals and are based on existing portfolio information as of December 31, 2020. Figures for 2021 onwards are estimates and are based on historical vintage year data captured by Pathway and information provided by various PE data providers. As such, actual cash flows and market values for 2021 onwards may differ.

Private Equity Outlook

ATTRACTIVE PERFORMANCE AMID A PANDEMIC

- ✓ The private equity industry has proven resilient through the pandemic, with strong outperformance during the year and into the first quarter of 2021.
- ✓ The asset class has demonstrated its success at responding to market shocks, capitalizing on opportunities and generating attractive returns for investors.

PORTFOLIO IS WELL-POSITIONED FOR CONTINUED SUCCESS

- ✓ Challenged sectors (i.e., travel, traditional retail, and energy) represent a small portion of the portfolio (less than 5% of market value).
- ✓ Many of the hardest-hit segments of the portfolio (i.e., travel, traditional retail, and energy) have recovered and resumed growth.
- ✓ Capital markets remain accommodative with favorable financing conditions and receptive M&A and IPO environment.
- ✓ Private equity managers remain cautiously optimistic as they continue to focus on high-quality and resilient opportunities.

STRONG PERFORMANCE AND DISTRIBUTIONS

- ✓ Preliminary indications suggest continued strong private equity performance in the first quarter.
- ✓ Based on the current pace, the portfolio has the potential to meet or exceed the record distributions received in 2020. Year-to-date through April 2021, the portfolio has already generated over \$510 million in distributions.

Private Credit

Portfolio Review

Private Credit Portfolio Structure

Private Credit
\$1,111.7 Million¹

Direct Lending
\$889.2 Million¹

Commercial Real Estate
Debt
\$162.9 Million¹

























Opportunistic Credit
\$59.6 Million^{1,2}

- ✓ The current allocation of 2.8% is well below the targeted allocation of 8%.
- ✓ A combination of RFPs and add-on commitments are being utilized to address the current target allocation shortfall.
- ✓ It is anticipated that it will take 2-3 years to achieve the target allocation in Private Credit.

¹Market values are as of 3/31/21.

²KKR Global Debt includes both direct lending and opportunistic credit exposure. As of 3/31/21, KKR accounted for 100% of the private credit portfolio's exposure to opportunistic credit.

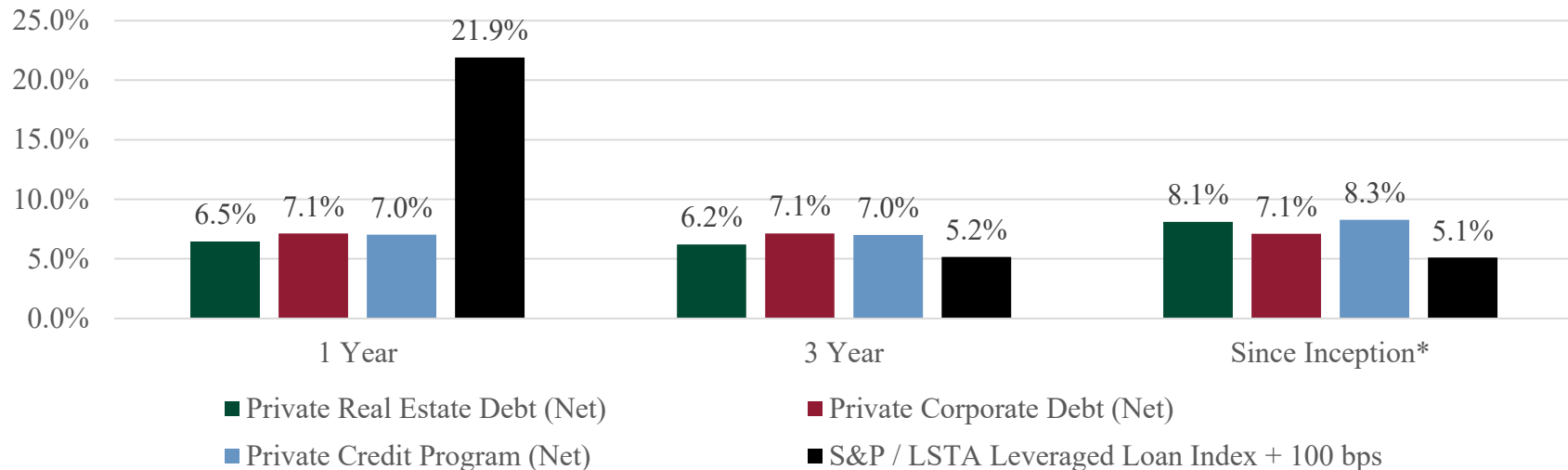
Private Credit Manager Evaluation

Manager/ Investment	Strategy	Fund Stage	Org	People	Process	Performance
Monroe / MCPCF I	Corporate Debt	Investing				
BlackRock / TCP VIII-A	Corporate Debt	Investing				
KKR ¹	Corporate Debt	Investing				
Principal / PREDF I	Commercial Real Estate Debt	Harvest				
Principal / PREDF II	Commercial Real Estate Debt	Harvest				
PGIM ¹	Commercial Real Estate Debt	Investing				

¹KKR and PGIM are strategic partnerships within the Private Credit portfolio.

- ✓ Monroe, BlackRock, KKR and PGIM are all actively investing. PREDF I and PREDF II are both in the harvest phase of their fund life cycles.
- ✓ On February 26, 2021, Monroe sold a passive, non-voting minority position, 16.67%, of the firm to Bonaccord Capital Partners. The proceeds will be used to grow the business and expand their global distribution channels.

Private Credit Performance *(as of 3/31/21)*



- ✓ The private credit program was established by Policy in 3Q16. Historical results shown above are combined performance results of the legacy middle market direct lending and commercial real estate debt fund investments which date back to 2Q13.
- ✓ The private credit program greatly underperformed its benchmark for the 1-year period, as the portfolio lagged the strong rebound in the Index post-COVID. The 1-year underperformance is not a concern.
- ✓ Performance for the private credit program and its sub-strategies have exceeded the objective over 3 years and since inception.

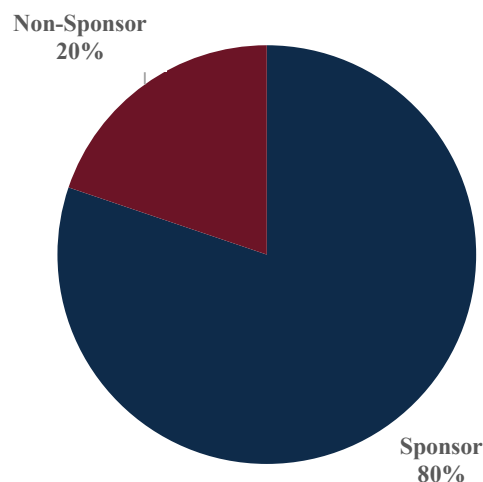
* Since inception for private real estate debt (net), private credit program (net) and S&P/LSTA Leveraged Loan Index + 100 bps is as of 2Q13. Since inception for private corporate debt (net) is as of 4Q16.

Private Credit Portfolio Diversification

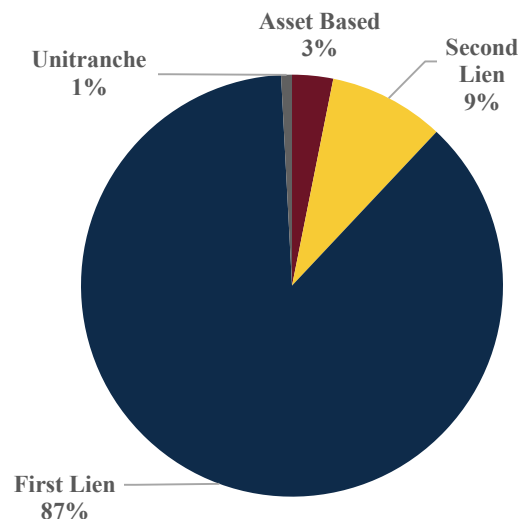
As a % of the Corporate Debt Portfolio Market Value - 298 Loans

At March 31, 2021

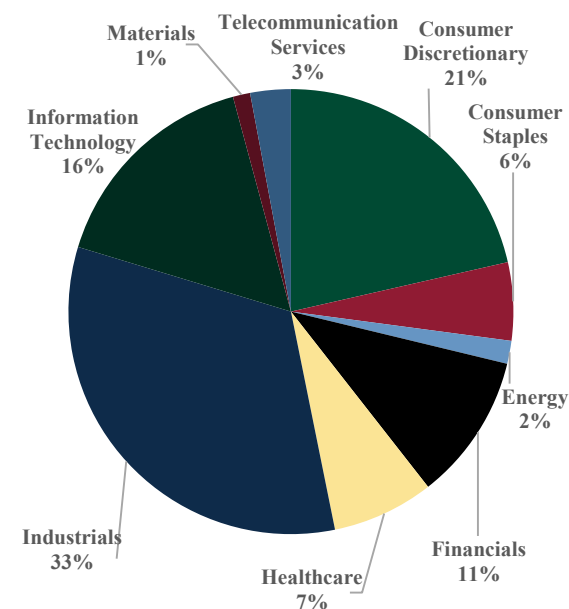
SPONSOR/NON-SPONSOR



ASSET TYPE



SECTOR



- ✓ Majority of loans are sponsor based.
- ✓ First lien asset type positions make up 87% of the private credit portfolio.

Private Credit Risk Assessment

Corporate Debt Summary

At March 31, 2021

Portfolio	# Positions	Watch-list % ¹	% 1 st Lien	% Sponsored	Avg. EBITDA (mm)	Leverage at Close
BlackRock	155	7.6%	85%	57%	\$83	4.6x
KKR ²	66	1.4%	58%	72%	\$199	5.4x
Monroe	77	5.2%	98%	89%	\$23	4.8x

¹Weighted percentage of loans on the respective manager's watch-list by 1Q21 MV

²KKR Global Debt is made up of direct investments and opportunistic credit. The % Sponsored, Avg. EBITDA and Leverage at Close metrics above exclude opportunistic investments where the metrics are less applicable. i.e. asset based financings

- ✓ The portfolio provides exposure across the direct lending space as measured by average EBITDA: Monroe (lower middle-market), BlackRock (traditional middle-market) and KKR (large middle-market).
- ✓ Mandate watch-lists are manageable and represent a smaller percentage of the overall corporate debt exposure.
- ✓ Leverage levels across the portfolio mandates are conservative.

Private Credit Risk Assessment (Continued)

Real Estate Debt Summary

At March 31, 2021

Portfolio	# Loans	Watch-list % ¹	Debt Yield	LTV	DSCR
PREFD II	21	14%	7.4%	74%	1.98
PGIM					
PREDS	42	1.4%	5.6%	73%	1.40
Sub Debt	4	35%	5.9%	63% - 79%	1.24

¹Weighted percentage of loans on the respective manager's watch-list by 1Q21 MV

- ✓ PREFD I is not shown in the table above. The fund had two remaining loans and both were paid current.
- ✓ All of the loans on watch-list in PREFD II and PREDS were paid current.
- ✓ The PGIM – Sub Debt watch-list consisted of one loan. This note was sold on 4/19/21. The remaining three loans in the sub debt portfolio are all paid current.

Private Credit Proposed Structure

- ✓ The current Private Markets Investment Policy allows for investments across commercial real estate credit, middle market direct lending and opportunistic credit.
- ✓ Staff is recommending a number of changes to the Private Markets Investment Policy that will impact the private credit portfolio structure if approved:
 - ✓ Rename the commercial real estate credit sub-strategy to real assets credit and expand it to include all real asset financing strategies, while maintaining the existing risk-return profile.
 - ✓ Allow for direct credit co-investments in all three sub-strategies.
- ✓ Multiple mandates have been identified in the opportunistic credit search. The Board has already approved hiring recommendations for multi-strategy and mezzanine; staff is seeking approval for hiring managers to implement special situations, specialty finance and real asset financing mandates.
- ✓ The opportunistic credit search allowed for submissions of real assets financing strategies; staff recommends that any approved mandates from the search in this category be implemented in the newly defined real assets credit sub-strategy (if the Policy change is approved by the Board).

Private Credit Proposed Structure (Continued)

	Target Position (\$M)	Private Credit %	Total Fund %	Status
Multi-Strategy				
<i>KKR Goldfinch</i> ¹	\$175.00	5.3%	0.4%	Investing
<i>Crestline SMA</i>	\$250.00	7.5%	0.6%	Contracting
<i>Marathon</i>	\$250.00	7.5%	0.6%	Contracting
Total Multi-Strategy	\$675.00	20.3%	1.6%	
Mezzanine				
<i>Audax Mezzanine Fund V</i>	\$100.00	3.0%	0.2%	Investing
<i>Audax V Co-Investment Fund</i>	\$25.00	0.8%	0.1%	Contracting
<i>Ares Private Credit Solutions II</i>	\$100.00	3.0%	0.2%	Contracting
<i>Ares PCS II Co-Investment Fund</i>	\$25.00	0.8%	0.1%	Contracting
Total Mezzanine	\$250.00	7.5%	0.6%	
Special Situations				
<i>Kartesia</i>	\$100.00	3.0%	0.2%	Recommended
Total Special Situations	\$100.00	3.0%	0.2%	
Specialty Finance				
<i>Arrowmark</i>	\$100.00	3.0%	0.2%	Recommended
<i>Capital Spring</i>	\$50.00	1.5%	0.1%	Recommended
Total Specialty Finance	\$150.00	4.5%	0.4%	
Total Opportunistic Private Credit	\$1,175.00	35.3%	2.8%	
Direct Lending				
<i>Monroe Capital Management</i>	\$527.00	15.8%	1.3%	Investing
<i>BlackRock / TCP VIII</i>	\$400.00	12.0%	1.0%	Investing
<i>KKR Goldfinch</i> ¹	\$175.00	5.3%	0.4%	Investing
Total Direct Lending	\$1,102.00	33.1%	2.7%	
Real Assets				
<i>PGIM Global Real Estate Debt</i>	\$250.00	7.5%	0.6%	Investing
<i>ITE Management</i>	\$100.00	3.0%	0.2%	Recommended
<i>HPS Investment Partners</i>	\$100.00	3.0%	0.2%	Recommended
<i>Open (multiple mandates anticipated)</i> ²	\$600.00	18.0%	1.4%	Search Pending
Total Real Assets	\$1,050.00	31.6%	2.5%	
Total Portfolio	\$3,327.00	100%	8.0%	

1. KKR Goldfinch's mandate invest in both opportunistic and direct lending strategies. Assumes 50/50 split.

2. A Real Assets Credit search will be issued in 3Q21. Commitments of up to \$600 million are contemplated across real estate debt and other real asset debt strategies.

Private Credit Outlook

RESILIENT PERFORMANCE AMID A PANDEMIC

- ✓ Direct Lending portfolios have recovered and stabilized over the last couple of quarters after being negatively impacted by COVID concerns in the 1H20.
- ✓ For real estate debt, the impact continues to vary by property type. Hotel, office and retail exposure have seen improvements but remain the most challenging

CURRENT PORTFOLIOS ARE WELL-POSITIONED

- ✓ While COVID-19 certainly slowed investment activity in Q2-Q3 2020, the activity accelerated in Q4 2020 and has remained active throughout 2021. Given our add-on commitments to existing mandates, IPERS has plenty of capacity to participate should managers identify attractive risk adjusted opportunities.
- ✓ Liquidity in the private real estate debt market continues to improve. PGIM's pipeline activity has improved in the 1H21, however, competition by lenders continues to be robust. As opportunities are identified, PGIM is well positioned to take advantage.

PORTFOLIO RESTRUCTURING

- ✓ Commitments to opportunistic credit strategies should benefit from the market recovery, as well as any potential stress in the market as fiscal and monetary support is pulled back in the 2H21.
- ✓ Mandates identified as real assets credit should compliment the PGIM strategic partnership.

Private Real Assets

Portfolio Review

Private Real Assets Portfolio Structure

Private Real Assets
\$2,139.2 M¹

Private Real Estate
\$1,898.3 M¹

Other Real Assets²
\$240.9 M¹

- ✓ The private real estate sub-portfolio made up 88% of the private real assets portfolio which was above the 70% minimum exposure required by Policy, while the other real assets sub-portfolio remained within the maximum exposure of 30%.
- ✓ When accounting for the Brookfield unfunded commitment, the private real estate sub-portfolio makes up 78% of the private real assets portfolio and other real assets makes up 22%.

¹Based on the program's net asset values as of 3/31/20.

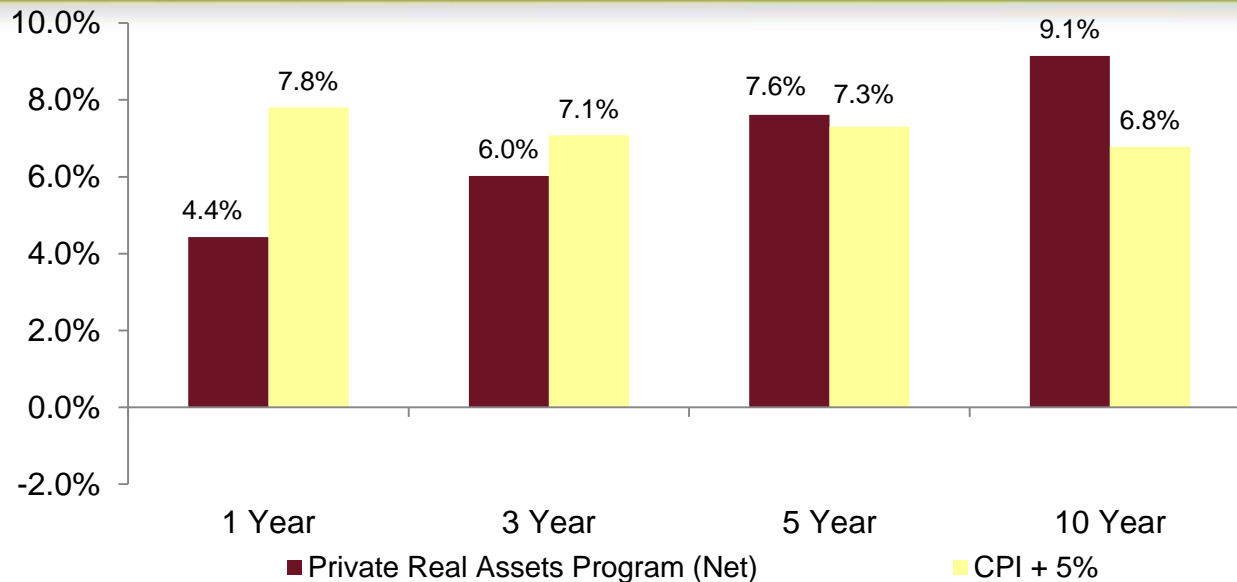
²Other real assets currently includes timberland and farmland investments.

Private Real Assets Manager Evaluation

Manager / Investment Structure	Strategy	Org	Asset Management	Portfolio Management	Performance
Clarion Partners / Separate Account	Core Real Estate	↑	↑	↑	↔
Invesco / Separate Account	Core Real Estate	↑	↑	↑	↑
Deutsche / Separate Account	Core Real Estate	↑	↑	↑	↑
UBS Realty / Separate Account	Apartment Only	↑	↑	↑	↑
FIA / Separate Account	Timberland	↑	↑	↑	↔
UBS Farmland / Separate Account	Farmland	↑	↑	↑	↔

- ✓ Clarion Partners 10-year rolling return net of fees was 8.5% versus the ODCE benchmark return of 8.7%. The portfolio saw some improvement over the last year but is still dealing with the recovery prospects for hotels and certain CBD office holdings.
- ✓ FIA and UBS Farmland continue to struggle versus the portfolio objective of CPI + 5%. However, this has been true for the broader timber and farmland markets as measured by the NCREIF indices.

Private Real Assets Performance *(as of 3/31/21)*

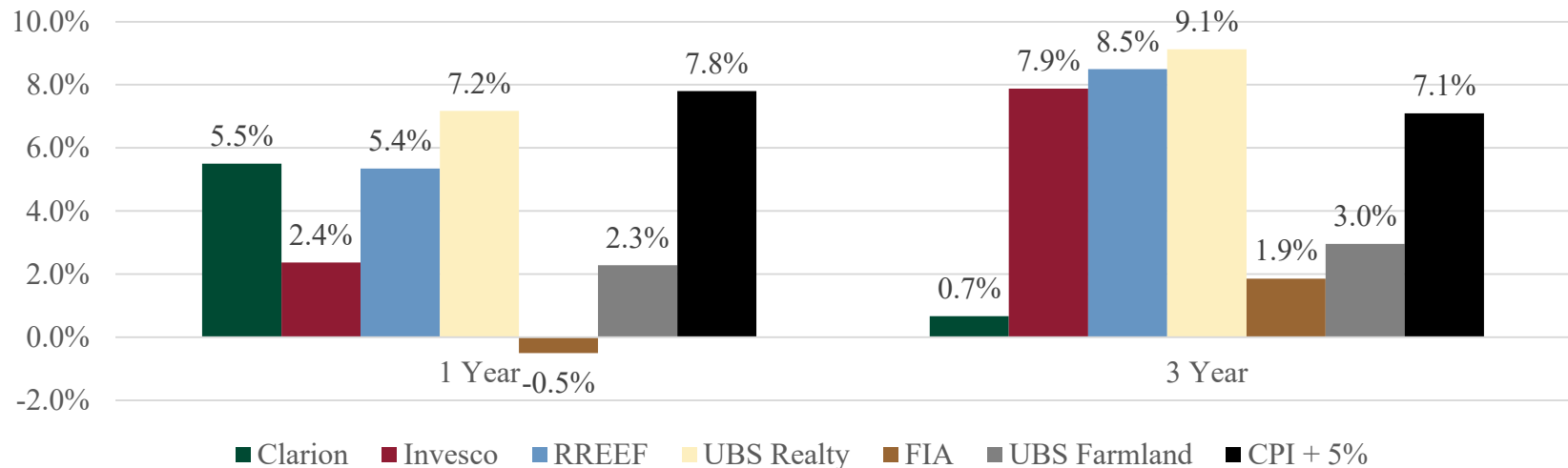


- ✓ The private real assets composite was established in 4Q16. The results presented above incorporate the legacy real estate and other real asset programs that were in place prior to the composite being established.
- ✓ The private real assets portfolio has exceeded the CPI + 5% objective for the 5-year and 10-year time periods as of 1Q 2021.
- ✓ The underperformance over the last year was attributable to both the real estate and other real assets sub-portfolios. The real estate sub-portfolio generated a 5% net return, while the other real assets portfolio was flat over the last year, 0.2%.

NOTE: Performance summary pages for the real estate and other real asset portfolios are available in Appendix D

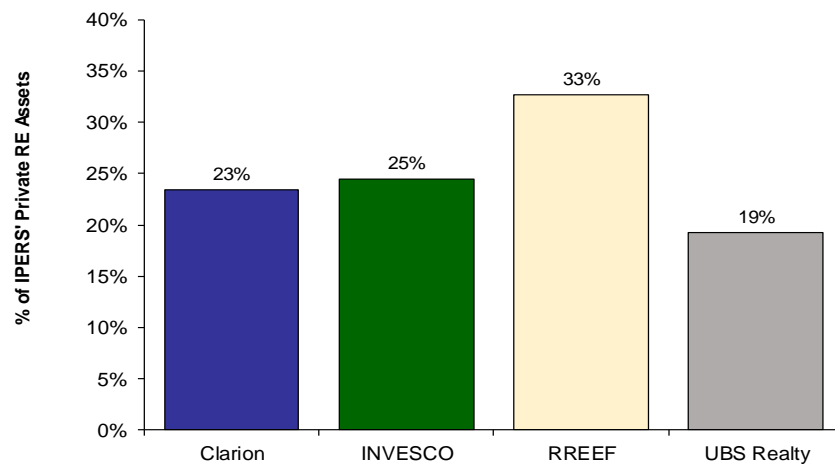
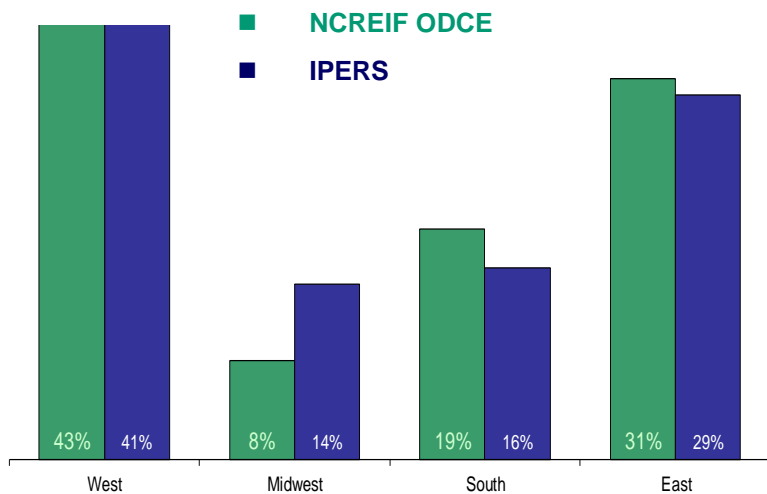
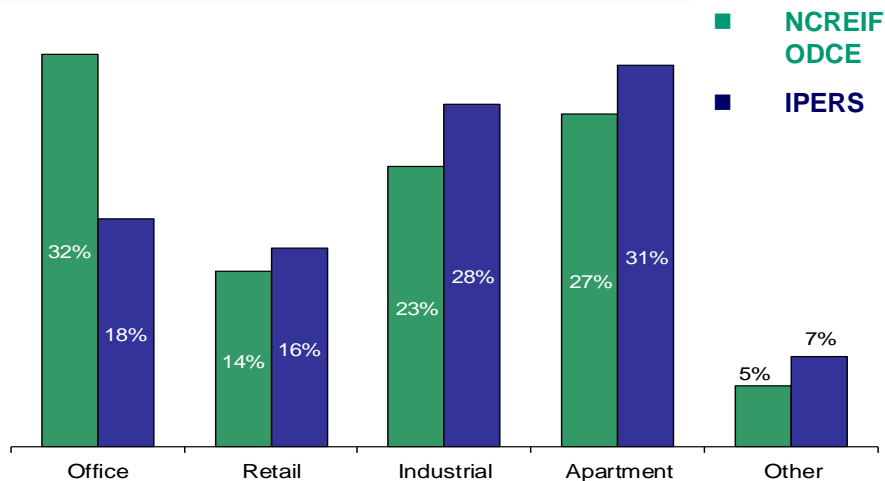
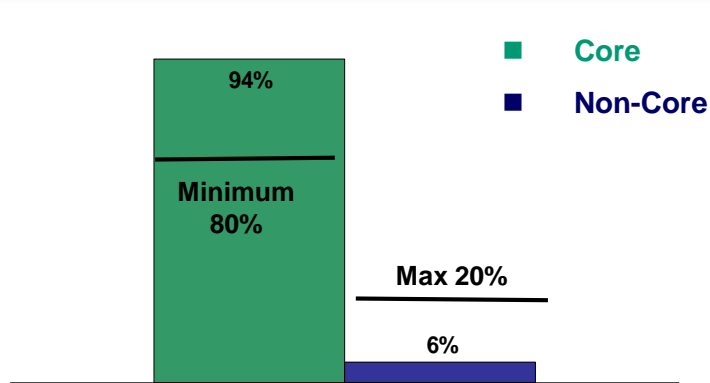
Private Real Assets Performance (Continued)

Real Asset Portfolio Mandates



- ✓ None of the underlying mandates within the real assets portfolio kept pace with the CPI + 5% real return objective over the last year. Lower income returns and valuations proved to be too much to overcome.
- ✓ Three year results were somewhat better as three of the four real estate mandates outperformed the broader real assets objective.
- ✓ Clarion results improved over the last year as we saw a recovery in one of the two hotel assets and certain CBD office holdings in the portfolio.
- ✓ Timber and farmland were negatively impacted by the pandemic in 2020 as markets were essentially shut down. Impacting both investment activity and the ability to generate income.

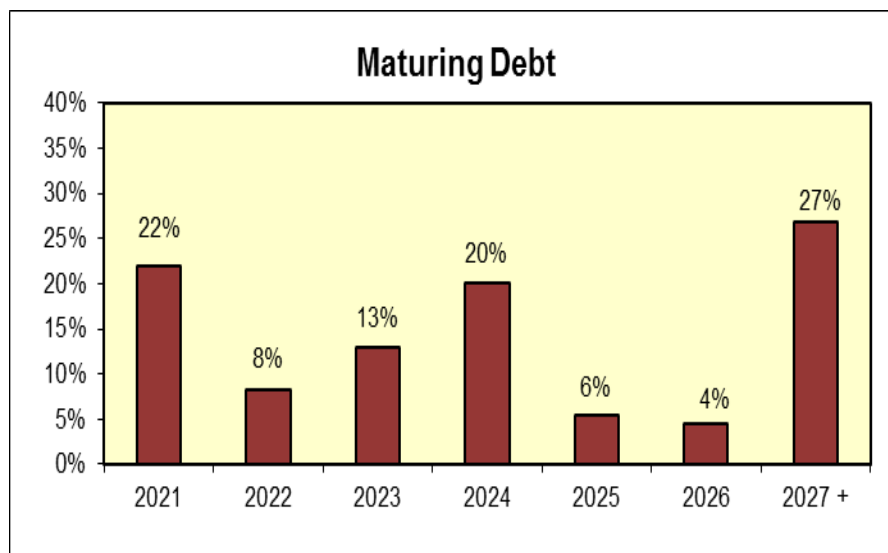
Private Real Estate Diversification



NOTE: Percentages are based on the net investment value as of 1Q21

Private Real Estate Leverage *(in \$M; as of 3/31/21)*

Manager Summary (Property Level)					
Manager	Gross Property Value	Debt Balance (MTM)	Net Property Value	Loan to Value	Portfolio Avg Cost of Debt
Clarion Partners	\$704,464	\$249,121	\$455,343	35%	3.98%
INVESCO	\$660,891	\$196,842	\$464,050	30%	3.64%
RREEF	\$865,002	\$243,826	\$621,176	28%	3.47%
UBS Realty	\$522,321	\$156,433	\$365,888	30%	2.87%
IPERS Total	\$2,752,679	\$846,222	\$1,906,457	31%	3.55%

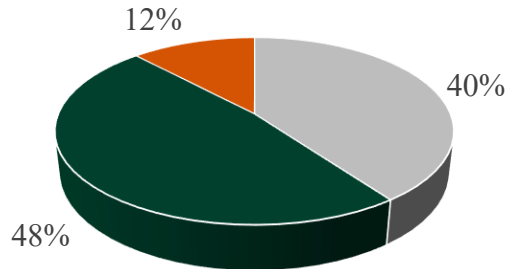


% of Debt Maturing by Calendar Year as of 3/31/21

- ✓ All of the managers were within the 40% maximum leverage limit set by Policy.
- ✓ The average cost of debt as of 3/31/21 was 3.55% which is slightly lower than the 3.72% average cost of debt last year.
- ✓ Six loans are maturing in 2021. Five of the six loans are being refinanced given the attractive debt market and one loan is being extended to align with a potential sale.
- ✓ The maturity schedule of debt in the program is at manageable levels over the next several years.

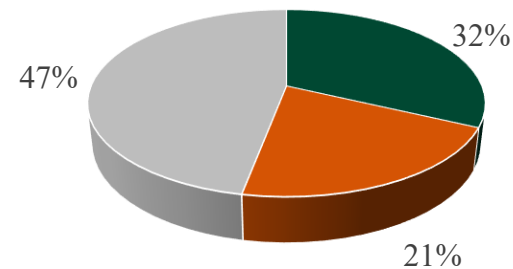
Other Real Assets Diversification

Timberland: Value By Region



■ Pacific Northwest ■ Southeast ■ Northeast

Timberland: Value By Land Class



■ Land ■ Pre-Merchantable ■ Merchantable

Farmland: Portfolio Diversification Matrix (percent by market value)

Crops	Mountain	Delta	Pacific Northwest	Total
Annual ¹	25.28%	15.14%		40.42%
Vegetables	10.40%			10.40%
Permanent			10.45%	10.45%
Other ²	38.73%			38.73%
Total	74.41%	15.14%	10.45%	100%

¹Annual includes corn, cotton, soybeans, sugar crops and wheat

²Other includes feed grains and hay

Private Real Assets Allocation Gap

- ✓ Current exposure of private real assets is 5.3% of the total fund versus the target allocation of 8.5%. This leaves an allocation gap of \$1.3 billion.

MULTIPLE REASONS FOR THE ON-GOING ALLOCATION GAP

- ✓ As of 1Q21, the growth of IPERS' total fund significantly outpaced the growth of the real assets portfolio.
- ✓ Investment activity over the last year across private real assets was constrained by COVID shutdowns and elevated pricing.
- ✓ Outstanding commitments in the UBS Farmland SMA and Brookfield Super-Core Infrastructure fund have not been invested. In part, because of the slower investment activity.
- ✓ Elevated pricing. Core real assets are currently priced for perfection, especially across farmland and favored real estate property types like Industrial and apartments.
- ✓ Distressed sellers have not materialized in real assets in part because of the government stimulus packages and more conservative use of leverage across the asset class.
- ✓ Policy limitations – the current Policy limits investment activity to +/-5% of the NCREIF ODCE property types and geographic regions.

Private Real Assets Allocation Gap (Continued)

POTENTIAL SOLUTIONS TO ADDRESS THE ALLOCATION GAP

- ✓ Expand the opportunity set within real estate by identifying opportunities further out on the risk spectrum. We currently have capacity under the current Policy to invest in more value-add real estate and market driven opportunities.
 - ✓ Value-add opportunities might include being a liquidity provider for distressed office and retail investors, taking lease up risk in select markets with strong growth outlooks
 - ✓ Market driven opportunities in real estate could include investments such as single family residential, manufactured housing, data centers, life science, medical office buildings and self storage to name a few.
- ✓ Expand infrastructure exposure to satellite strategies to compliment our existing investment in the Brookfield Super-Core Infrastructure Fund.
- ✓ Improving investment capacity through Policy changes. Our existing mandates have capacity.

SUGGESTED STEPS TO ADDRESS THE ALLOCATION GAP

- ✓ Policy change - Expand the investment limitations around property type and geographic regions within the core real estate portfolio.
- ✓ Issue a real assets equity RFP to identify value-add and market driven opportunities within private real estate and complimentary Infrastructure strategies.

Private Real Assets Outlook

MUTED PERFORMANCE AMID A PANDEMIC

- ✓ The recovery in real assets has varied by location and property type. Timber, farmland, and certain real estate property types (hotel, office and certain retail) continue to be the most challenging, while apartment and industrial have continued to provide strong results.
- ✓ Investment activity was constrained over the last year but is starting to improve.

CURRENT PORTFOLIO IS WELL-POSITIONED FOR CONTINUED SUCCESS

- ✓ The portfolio's overweight to apartments, industrial and grocery anchored retail have continued to provide downside protection to the portfolio.
- ✓ In addition, these overweights to property types with shorter term leases should prove beneficial if inflation continues to take hold moving forward.

ADDRESSING THE ALLOCATION GAP

- ✓ Real assets investment activity is improving. Most notably – we anticipate that our infrastructure commitment to Brookfield should begin calling capital in 2H21.
- ✓ Recommended Policy changes should expand the opportunity set for our existing core real estate mandates.
- ✓ Staff will be Initiating a real assets equity search in 2H21.

Private Markets

Summary

IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM



Summary

Private Equity

- ✓ Pathway continues to provide a well diversified private equity program which has generated strong positive results over all time periods measured.
- ✓ The legacy portfolio is in the process of an orderly liquidation and it is anticipated that the majority of the portfolio will be liquidated over the next 5 years.
- ✓ There are no recommended changes to the current portfolio.

Private Credit

- ✓ The actual allocation for the private credit portfolio is well below the 8% target allocation. The current opportunistic credit search and planned real assets credit search should address this shortfall over time.
- ✓ All of the private credit mandates have provided solid results and are in-line with expectations over longer time periods.
- ✓ Policy changes and hiring recommendations for the private credit portfolio will be provided later in the meeting.

Private Real Assets

- ✓ The actual allocation for the private real assets portfolio continues to be below the target allocation.
- ✓ The real assets portfolio has lagged CPI + 5% over the last 3 years driven by Clarion Partners and the other real assets portfolios. Clarion Partner's portfolio saw some recovery over the last year. However, timber and farmland continue to struggle.
- ✓ Policy changes for the private real asset portfolio will be provided later in the meeting.
- ✓ Staff plans to issue an RFP for private real assets equity later in the year.

Appendix A – Pathway Capital Management

Mandate – To create and maintain for IPERS a diversified portfolio of high quality private equity partnerships. Responsibilities include the screening and selection of partnerships, negotiation of partnership agreements, the monitoring of partnership investments, decisions regarding partnership amendments and liquidation of stock distributions.

Portfolio Objective – Achieve an internal rate of return, net of all fees, that exceeds the internal rate of return of a custom benchmark over a rolling 10-year period. (The custom benchmark is calculated using IPERS' contribution cash flows and assumes that contributions invested within the most recent 3 years earned 91-day T-bill returns, while contributions invested for longer periods earned Wilshire 5000 Index plus 300 basis points returns.)

Appendix B

IPERS PRIVATE EQUITY PORTFOLIO

Vintage Year Analysis as of Dec. 31, 2020

VINTAGE YEAR	CAPITAL COMMITTED*	PAID-IN CAPITAL	VALUE DISTRIBUTED	UNREALIZED VALUE	GAIN/ (LOSS)	IPERS' SINCE INCEPTION IRR	Burgiss LOWER QUARTILE IRR	Burgiss MEDIAN IRR	Burgiss TOP QUARTILE IRR	IPERS' TVPI *	Burgiss MEDIAN TVPI *	Burgiss TOP QUARTILE TVPI *	IPERS' DPI **	Burgiss MEDIAN DPI **	Burgiss TOP QUARTILE DPI **
1985	11,500,000	11,500,000	31,002,575	0	19,502,575	14.53%	2.78%	8.86%	16.17%	2.70	1.84	2.54	2.70	1.84	2.54
1986	33,513,482	37,756,465	314,074,192	0	276,317,727	26.08%	5.77%	7.99%	13.44%	8.32	1.68	2.11	8.32	1.68	2.11
1987	398,479,847	419,695,102	888,859,820	(969,559)	468,195,159	9.59%	3.93%	13.32%	19.50%	2.12	2.10	2.76	2.12	2.10	2.76
1988	18,000,000	17,600,000	70,815,733	0	53,215,733	36.25%	7.21%	12.09%	20.28%	4.02	1.88	2.64	4.02	1.88	2.64
1989	20,000,000	20,000,000	34,905,056	0	14,905,056	8.44%	5.48%	14.71%	27.46%	1.75	2.11	3.30	1.75	2.11	3.30
1990	32,275,000	19,311,250	81,175,891	0	61,864,641	45.06%	10.78%	16.91%	23.03%	4.20	2.16	2.73	4.20	2.16	2.73
1991	NA	NA	NA	NA	NA	NA	13.11%	22.91%	34.30%	NA	2.63	3.42	NA	2.63	3.42
1992	20,000,000	20,000,000	42,495,842	0	22,495,842	13.36%	10.59%	18.48%	35.31%	2.12	1.92	3.10	2.12	1.88	3.10
1993	136,000,000	134,884,892	325,626,272	0	190,741,380	29.35%	10.51%	19.04%	39.57%	2.41	1.94	3.36	2.41	1.94	3.36
1994	59,000,000	62,627,202	151,537,629	0	88,910,427	23.47%	6.73%	20.22%	38.19%	2.42	1.97	3.35	2.42	1.97	3.35
1995	100,861,403	95,837,807	255,694,360	0	159,856,553	28.84%	2.57%	13.71%	34.08%	2.67	1.81	2.68	2.67	1.81	2.68
1996	49,000,000	48,907,148	89,401,638	0	40,494,490	13.67%	1.92%	9.79%	30.67%	1.83	1.61	2.29	1.83	1.61	2.29
1997	178,000,000	184,377,042	418,864,970	0	234,487,928	33.91%	0.81%	8.30%	25.30%	2.27	1.43	2.17	2.27	1.43	2.17
1998	246,000,000	239,557,428	331,812,057	20,107	92,274,736	6.58%	-1.50%	7.16%	14.95%	1.39	1.41	1.80	1.39	1.39	1.80
1999	255,000,000	248,391,568	303,526,954	335,949	55,471,335	4.19%	-9.06%	-0.44%	9.71%	1.22	0.98	1.56	1.22	0.98	1.53
2000	438,262,562	440,472,949	821,446,938	5,629,955	386,603,944	15.95%	-4.51%	4.43%	13.70%	1.88	1.24	1.78	1.86	1.23	1.78
2001	371,106,959	385,614,224	766,057,632	4,000,425	384,443,833	25.00%	0.01%	8.09%	21.35%	2.00	1.49	2.03	1.99	1.46	2.02
2002	40,000,000	40,700,701	99,180,009	0	58,479,308	16.98%	4.44%	13.97%	27.33%	2.44	1.58	2.10	2.44	1.58	2.05
2003	345,781,150	361,374,380	775,852,032	3,152,711	417,630,363	23.27%	3.13%	10.15%	20.68%	2.16	1.53	1.99	2.15	1.51	1.98
2004	354,447,023	352,299,966	656,328,786	7,628,712	311,657,532	16.33%	-1.44%	8.35%	15.41%	1.88	1.49	1.89	1.86	1.41	1.85
2005	507,847,879	532,960,728	815,906,029	12,187,443	295,132,744	8.02%	-0.10%	6.40%	12.40%	1.55	1.35	1.82	1.53	1.31	1.76
2006	901,431,547	935,621,049	1,459,301,207	51,367,438	575,047,596	8.73%	-0.29%	5.50%	11.84%	1.61	1.38	1.79	1.56	1.29	1.62
2007	668,835,504	744,699,193	1,098,821,682	115,781,237	469,903,726	11.32%	1.59%	8.61%	13.79%	1.63	1.47	2.03	1.48	1.32	1.74
2008	610,659,680	607,913,088	934,368,233	123,900,948	450,356,093	12.42%	1.94%	8.31%	15.53%	1.74	1.45	1.84	1.54	1.26	1.62
2009	105,292,500	104,330,829	186,170,127	38,297,366	120,136,664	16.15%	6.73%	14.08%	22.66%	2.15	1.71	2.31	1.78	1.43	1.89
2010	195,176,827	194,902,476	288,047,129	95,071,310	188,215,963	14.67%	5.59%	10.61%	18.45%	1.97	1.53	2.02	1.48	1.23	1.60
2011	400,357,049	431,919,150	628,616,438	232,381,470	429,078,758	16.17%	6.09%	12.97%	21.20%	1.99	1.69	2.30	1.46	1.08	1.50
2012	406,724,669	388,450,085	538,322,786	243,498,136	393,370,837	19.07%	7.16%	12.39%	19.84%	2.01	1.61	2.20	1.39	0.96	1.27
2013	501,159,023	521,005,814	505,127,235	501,310,493	485,431,914	17.72%	6.09%	11.58%	19.39%	1.93	1.51	1.97	0.97	0.70	1.06
2014	788,228,464	774,579,071	725,097,031	991,053,242	941,571,202	23.05%	8.03%	13.74%	22.50%	2.22	1.53	2.09	0.94	0.51	0.91
2015	732,319,619	741,411,779	320,083,959	946,287,530	524,959,710	18.92%	7.97%	13.51%	21.87%	1.71	1.42	1.82	0.43	0.28	0.57
2016	806,887,916	755,446,578	364,992,941	1,122,746,596	732,292,959	29.47%	8.47%	14.66%	23.96%	1.97	1.38	1.70	0.48	0.16	0.43
2017	557,710,193	448,724,127	80,534,361	624,137,840	255,948,074	22.60%	7.07%	14.18%	26.60%	1.57	1.29	1.53	0.18	0.08	0.27
2018	777,158,204	579,445,769	74,130,887	849,557,662	344,242,780	33.11%	3.98%	13.67%	27.84%	1.59	1.18	1.40	0.13	0.00	0.10
2019	851,009,666	499,340,328	92,623,700	651,081,074	244,364,446	47.53%	-6.14%	10.42%	30.55%	1.49	1.08	1.27	0.19	0.00	0.02
2020	797,043,017	269,953,712	5,628,166	311,582,905	47,257,359	38.69%	-17.98%	-1.55%	17.55%	1.18	0.98	1.10	0.02	0.00	0.00
Totals:	12,715,069,183	11,671,611,900	14,576,430,297	6,930,040,990	9,834,859,387										

KEY:	Meets or exceeds Top Quartile:	
	Between Median and Top Quartile:	
	Below Median:	

NOTES: Amounts may not foot due to rounding. NA = Not applicable.

*Commitments to non-USD-denominated partnerships are accounted for by multiplying unfunded commitments by the quarter-ending exchange rate, then adding the result to cumulative capital contributions, causing commitments to non-USD-denominated partnerships to fluctuate

Benchmarks for vintage years 1985–1994 based on Burgiss Private iQ US all private equity returns, as of December 31, 2020, as produced using Burgiss data.

Benchmarks for vintage years 1995–2020 based on Burgiss Private iQ global all private equity returns, as of December 31, 2020, as produced using Burgiss data.

* TVPI is (Value Distributed + Unrealized Value) divided by Paid-In Capital.

** DPI is Value Distributed divided by Paid-In Capital.

*NOTES: Performance is based on underlying partnership market values updated through December 31, 2020, which are preliminary and therefore subject to change.

Data for vintage years 2017–2020 should be interpreted with caution. It is too early to make meaningful conclusions for such recent investments.

Table does not include any 2021 vintage year funds to which commitments had been made but not funded as of 12/31/20.

Appendix C – Private Real Estate Glossary of Terms

- ✓ NCREIF – The National Council of Real Estate Investment Fiduciaries is an association of institutional real estate professionals that collect performance data, address industry issues and promote research.
- ✓ NPI – The NCREIF Property Index is a U.S. unlevered, capitalization weighted, time weighted return index that reports quarterly and annual returns consisting of income and appreciation components for properties acquired on behalf of tax-exempt institutions and held in a fiduciary environment.
- ✓ NFI-ODCE – The NCREIF Fund Index – Open End Diversified Core Equity is a fund level capitalization weighted, time-weighted return index and includes property investments at ownership share, cash balances and leverage. The ODCE index is net of fees charged by fund managers.
- ✓ Core Investments – Commercial and residential properties which derive their value primarily from current income production, and therefore represent lower-risk profiles than non-core properties. Core investments are stabilized, substantially leased properties in the four major property types: office, retail, industrial and apartments.
- ✓ Non-Core Investments – These investments represent a higher-risk profile than core properties, and consist of properties acquired primarily for high appreciation potential, properties with identifiable and correctable deficiencies such as lease-up, renovation, or property conversion or development adjacent to an existing owned property.

Appendix D

Performance Summary Pages

IPERS' Program Performance (Inception 1985)

	IRR 10 Year	IRR Since Inception (1985)
IPERS Private Equity*	16.4%	14.6%
Wilshire 5000 + 300 bps	16.6%	15.0%

- ✓ The program was slightly below the objective of Wilshire 5000 + 300 bps over 10 years and since inception.

*All calculations are based on final partnership valuations through 12/31/2020 and are net of all fees.

Pathway Discretionary Performance (1993 – 2020)

	Pathway	Burgiss Group		
		Upper	Pooled Average	Median
Pathway Discretionary IRR	16.8%	20.3%	13.0%	10.3%
DPI¹	1.25	1.37	0.98	0.65
TVPI²	1.82	1.79	1.58	1.35

- ✓ The discretionary program has exceeded the Burgiss Group pooled average metrics for IRR's, DPI and TVPI since inception.

¹DPI is distributions to paid-in-capital and is calculated as distributions / contributions

²TVPI is total value to paid-in-capital and is calculated as (distributions + market value) / contributions

NOTE: A vintage year analysis of the private equity program's performance relative to the Burgiss Group's private equity industry metrics is provided in Appendix B.

PGIM Global Real Estate Debt *(as of 3/31/21)*

	1 Year	Since Inception (2Q18)
PGIM Real Estate Global Debt (Net)	5.8%	6.2%
S&P / LSTA Leveraged Loan Index + 100 bps	21.9%	5.2%

- ✓ The fund's investment objective is to seek to achieve attractive risk-adjusted returns by investing primarily in private real estate debt
- ✓ IPERS committed \$250 million to PGIM Global Real Estate Debt in the 2Q18. Through the 1Q21, \$131.5 million has been contributed including \$75 million to PGIM's Real Estate U.S. Debt Fund (PREDS) which invest in senior mortgages across the U.S. In addition, the mandate has made four tactical investments. Three in the U.S. and one in Australia.
- ✓ The mandate is a strategic partnership and has an evergreen investment structure.

Principal Real Estate Debt Fund (as of 3/31/21)

	1 Year	3 Year	Since Inception (2Q14)
PRED (Net)	6.8%	6.6%	8.0%
S&P / LSTA Leverage Loan Index + 100 bps	21.9%	5.2%	5.2%

- ✓ The fund's purpose is to provide investments in private commercial real estate debt investments, primarily mezzanine debt, subordinated debt, preferred equity and first mortgages including bridge loans on improved commercial real estate properties.
- ✓ IPERS committed \$50 million to Principal Real Estate Debt Fund I in 2Q14. Through the 1Q21, \$49.2 million of capital contributions have been made to the fund.
- ✓ As of 1Q21, the portfolio held two active loans. Subsequent to quarter end, one loan has been paid off and it is anticipated that the final loan will be paid off in 3Q21.
- ✓ The investment period for the fund ended on October 30, 2016.

Principal Real Estate Debt Fund II *(as of 3/31/21)*

	1 Year	3 Year	Since Inception (3Q17)
PRED II (Net)	9.1%	8.0%	8.6%
S&P / LSTA Leverage Loan Index + 100 bps	21.9%	5.2%	5.3%

- ✓ The fund's purpose is to provide investments in private commercial real estate debt investments, primarily mezzanine debt, subordinated debt, preferred equity and first mortgages including bridge loans on improved commercial real estate properties.
- ✓ IPERS committed \$50 million to Principal Real Estate Debt Fund II in 3Q17. Through the 1Q21, \$47.0 million of capital contributions have been made to the fund.
- ✓ As of 1Q21, the portfolio held twenty-one active loans. The loans are well diversified by investment type, property type and geographically with the last loan maturing in April, 2024.
- ✓ The investment period ended December 14, 2019.

KKR Corporate Global Debt *(as of 3/31/21)*

	1 Year	Since Inception (1Q19)
KKR (Net)	7.5%	7.8%
S&P / LSTA Leverage Loan Index + 100 bps	21.9%	5.8%

- ✓ The KKR Corporate Global Debt mandate's purpose is to provide investors with current income and long-term appreciation primarily through middle market direct lending and opportunistic credit investments.
- ✓ IPERS committed \$250 million to the KKR Corporate Global Debt mandate in 1Q19. An add-on commitment of \$100 million was made in 2Q21. Through the 1Q21, \$187.3 million had been funded.
- ✓ As of 1Q21, the portfolio held 66 active loans. Forty-six are direct loans and twenty opportunistic loans. There were no loans in default.
- ✓ The mandate is a strategic partnership and has an evergreen investment structure.

Monroe Capital *(as of 3/31/21)*

	1 Year	3 Year	Since Inception (1Q17)
MCPCF I (Net)	7.1%	6.5%	7.1%
S&P / LSTA Leverage Loan Index + 100 bps	21.9%	5.2%	5.3%

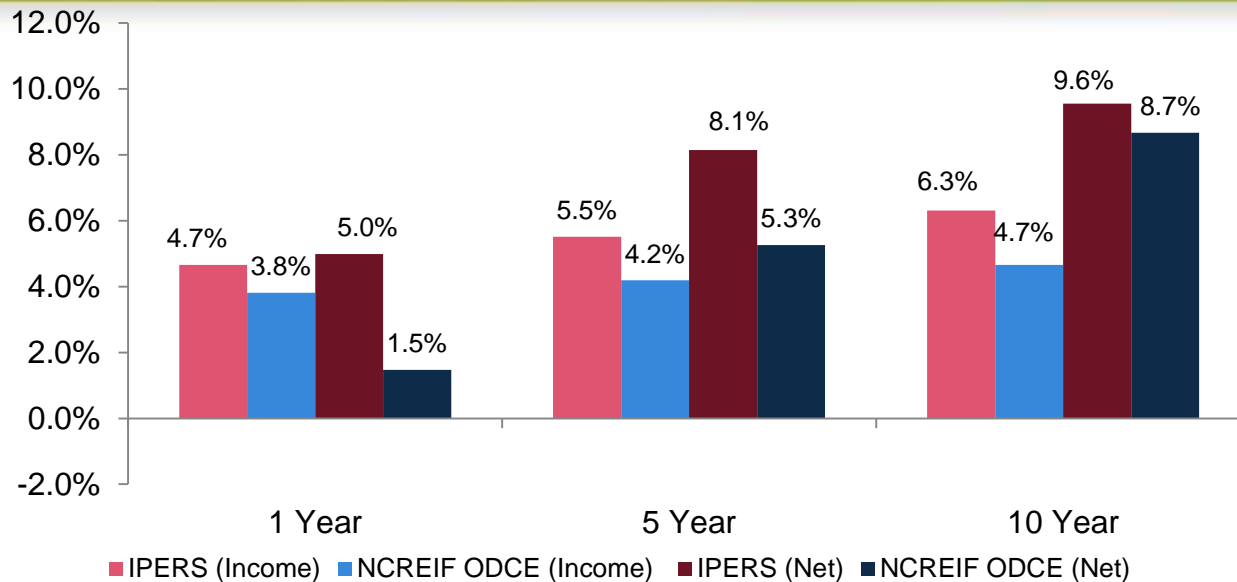
- ✓ The fund's purpose is to provide investors with current income and long-term appreciation primarily through senior secured and second-lien investments in middle market companies located in North America.
- ✓ IPERS has committed \$572 million to the Monroe Capital Private Credit Fund I. The initial commitment was made in 1Q17. Through the 1Q21, \$527.7 million had been funded.
- ✓ As of 1Q21, the portfolio held 77 active loans with a leverage multiple of 4.8x and a weighted average coupon of 8.0%. There were no loans in default.
- ✓ The mandate is evergreen investment structure.

BlackRock (TCP) *(as of 3/31/21)*

	1 Year	3 Year	Since Inception (4Q16)
TCP Direct Lending Fund VIII - A (Net)	6.9%	7.8%	7.5%
S&P / LSTA Leverage Loan Index + 100 bps	21.9%	5.2%	5.6%

- ✓ The fund's purpose is to provide investments in privately-originated, performing senior secured debt primarily in North America-based, middle market companies.
- ✓ IPERS committed \$250 million to the Tennenbaum Capital Partners Direct Lending Fund VIII – A in 4Q16. Additional commitments of \$100 million and \$50 million were made in 4Q18 and 4Q20, respectively.
- ✓ As of 1Q21, the portfolio held 155 active loans with a leverage multiple of 4.6x and a weighted average coupon of 7.9%.
- ✓ The mandate is an evergreen investment structure.

Private Real Estate Performance *(as of 3/31/21)*



- ✓ Income generated from the real estate portfolio has exceeded the ODCE benchmark income by over 90 bps in all three time periods measured.
- ✓ Relative net performance exceeded the NCREIF ODCE benchmark over all time periods measured.
- ✓ A consistent overweight to the industrial and apartment property types has driven the positive results over all time periods.

Clarion Partners *(as of 3/31/21)*

Performance Summary

	Leveraged			NFI - ODCE Total Net
	Income	Appreciation	Total Net	
1 Year	2.2%	3.8%	5.5%	1.5%
10 Year	6.1%	3.0%	8.5%	8.7%
Since Inception	5.9%	1.4%	6.5%	5.9%

Property Information

	Real Estate Investments	Percent of Gross Value	Avg Occupancy
Office	4	41%	83%
Industrial	3	18%	100%
Retail	3	21%	98%
Hotel	2	20%	25%
Total ¹	12	100%	96%

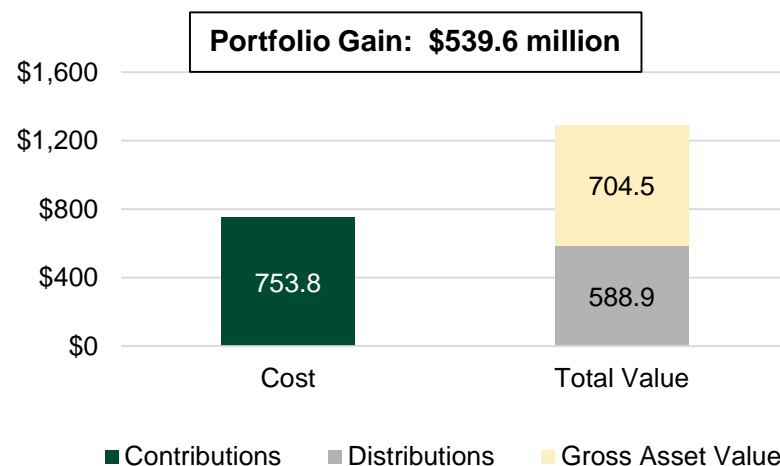
¹Total Occupancy excludes the hotels.

Portfolio Summary

Account Information

Net Asset Value (millions)	\$455.4
Debt – MTM (millions)	\$249.1
Inception Date	July 1, 2005

Historical Portfolio



INVESCO (as of 3/31/21)

Performance Summary

	Leveraged			
	Income	App.	Total Net	NFI - ODCE Total Net
1 Year	5.8%	-2.8%	2.4%	1.5%
10 Year	6.8%	5.3%	11.7%	8.7%
Since Inception	7.9%	2.8%	9.8%	7.7%

Property Information

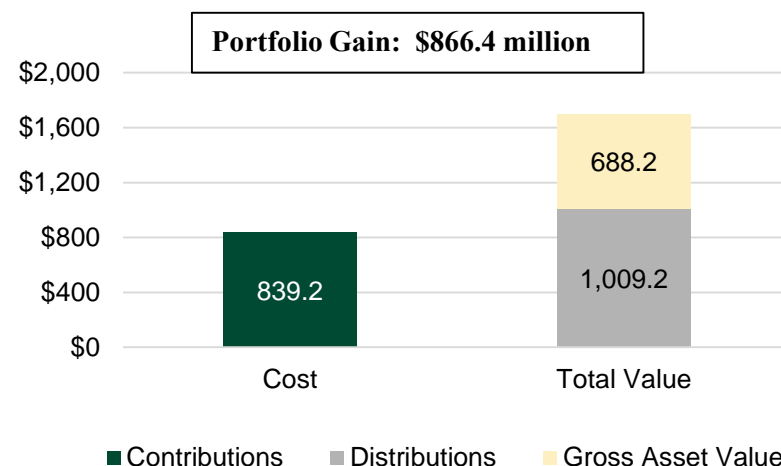
	Real Estate Investments	Percent of Gross Value	Average Occupancy
Office	3	23%	93%
Industrial	6	43%	99%
Retail	3	18%	85%
Apartment	2	17%	97%
Total	14	100%	96%

Portfolio Summary

Account Information

Net Asset Value (millions)	\$464.1
Debt – MTM (millions)	\$224.1
Inception Date	February 9, 1996

Historical Portfolio



RREEF America *(as of 3/31/21)*

Performance Summary

	Leveraged			NFI - ODCE Total Net
	Income	App.	Total Net	
1 Year	5.4%	0.5%	5.4%	1.5%
10 Year	5.9%	5.4%	10.8%	8.7%
Since Inception	6.9%	3.5%	9.6%	7.6%

Property Information

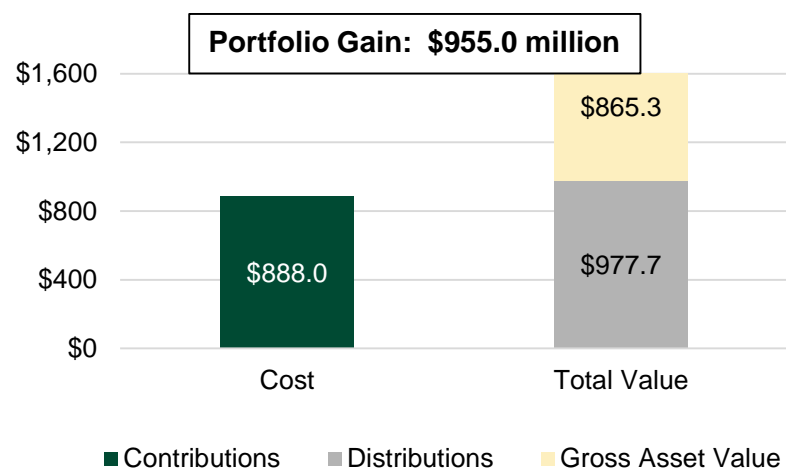
	Real Estate Investments	Percent of Gross Value	Average Occupancy
Office	2	21%	97%
Industrial	7	34%	93%
Retail	5	21%	93%
Apartment	4	24%	88%
Total	18	100%	93%

Portfolio Summary

Account Information

Net Asset Value (millions)	\$621.2
Debt – MTM (millions)	\$244.1
Inception Date	May 19, 1997

Historical Portfolio



UBS Realty *(as of 3/31/21)*

Performance Summary

	Leveraged			NPI – Apartments
	Income	App.	Total Net	
1 Year	5.2%	2.4%	7.2%	2.6%
10 Year	5.8%	5.6%	11.1%	8.4%
Since Inception	6.5%	3.6%	9.6%	8.4%

Property Information

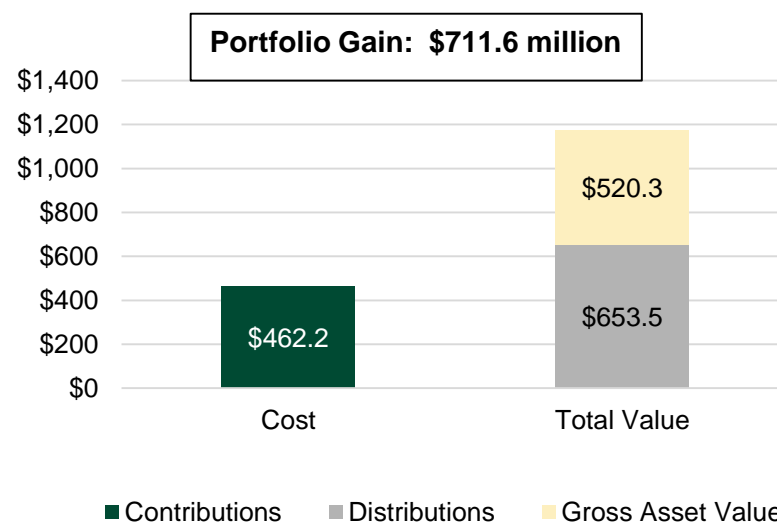
	Real Estate Investments	Percent of Gross Value	Average Occupancy
Apartments – Garden	4	56%	97%
Apartments – Low Rise	1	10%	95%
Apartments – High Rise	2	34%	97%
Total	7	100.0%	97%

Portfolio Summary

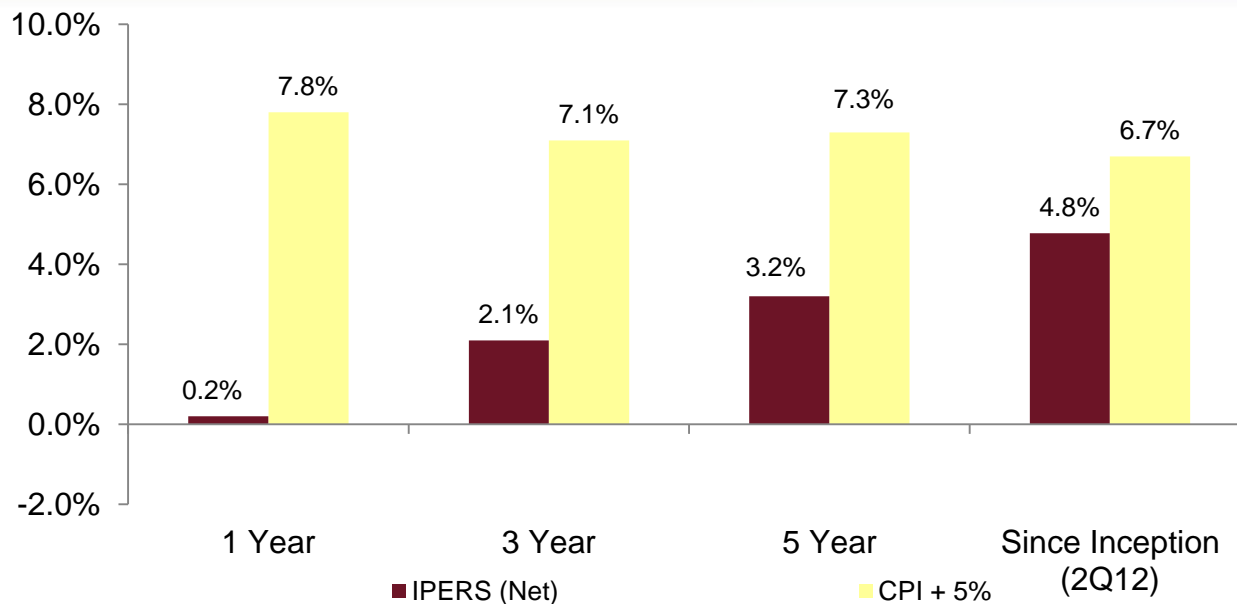
Account Information

Net Asset Value (millions)	\$366.3
Debt – MTM (millions)	\$162.4
Inception Date	December 1, 1998

Historical Portfolio



Other Real Assets Performance *(as of 3/31/21)*



- ✓ The other real assets composite was established in the 3Q16 as part of the private real assets composite. The initial allocation within the sub-composite were existing timberland and farmland investments.
- ✓ Neither timberland nor farmland as broad investments measured by the NCREIF indices have kept pace with a 5% real return hurdle over the time periods measured.

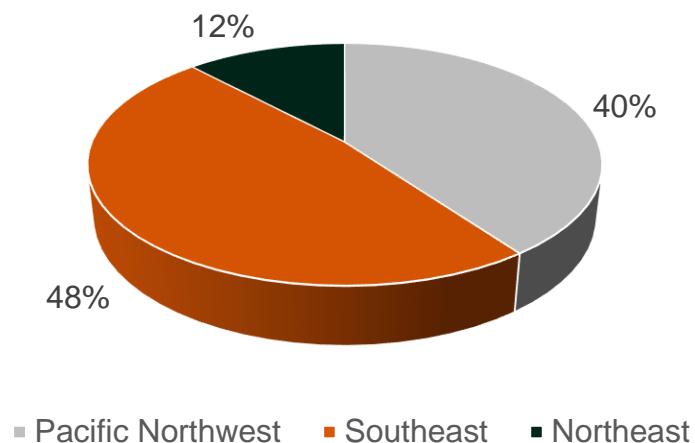
FIA Timberland *(as of 3/31/21)*

Performance Summary

	Income	App.	Total Net	CPI + 5%	NTI ¹
1 Year	0.3%	-0.2%	-0.5%	7.8%	1.5%
5 Year	0.5%	3.0%	2.7%	7.3%	2.5%
Since Inception	0.0%	5.2%	4.6%	6.7%	4.9%

1. NTI is the NCREIT Timberland Index

Value By Region

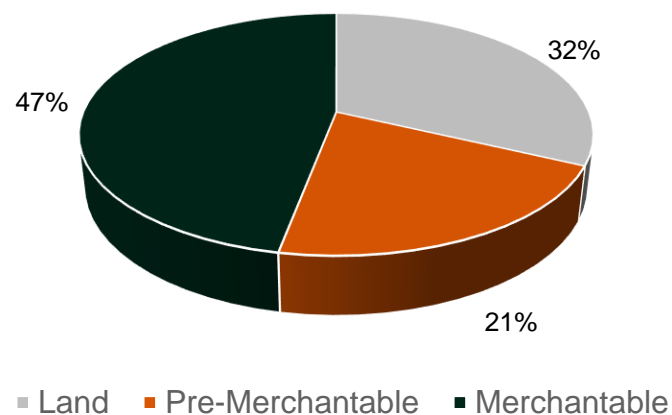


Portfolio Summary

Account Information

Market Value (millions)	\$181.0
Inception Date	August 1, 2012

Value By Land Class



UBS Farmland Investors *(as of 3/31/21)*

Performance Summary

	Income	App.	Total Net	CPI + 5%	CFI ¹
1 Year	3.4%	-0.2%	2.3%	7.8%	5.4%
3 Year	3.5%	0.3%	3.0%	7.1%	5.2%
Since Inception	3.8%	4.5%	7.5%	7.1%	5.3%

¹CFI is the NCREIF Farmland Leased Index (80% annual/20% permanent)

Portfolio Summary

Account Information

Market Value (millions)	\$59.9
Inception Date	June 1, 2016

Portfolio Diversification Matrix (percent by market value)

Crops	Mountain	Delta	Pacific Northwest	Total
Annual ¹	25.3	15.1		40.4
Vegetables	10.4			10.4
Permanent			10.5	10.5
Other ²	38.7			38.7
Total	74.4	15.1	10.5	100.0

¹Annual includes corn, cotton, soybeans, sugar crops and wheat

²Other includes feed grains and hay

Pathway Update and Portfolio Review

Iowa Public Employees' Retirement System

JUNE 17, 2021





- Pathway Update
- Investment Plan and Results
- Pathway's Discretionary Portfolio Review
- Summary
- Appendix
 - Direct Credit Opportunity
 - Private Market Environment
 - Biographies



Pathway Update



Pathway at a Glance



PRIVATE MARKET SPECTRUM

1991
Founded

100%
owned by its
21 partners

GLOBAL REACH

194
Staff

>\$75 billion
in global AUM^b

FULL-SERVICE MODEL

22 years'
average investment
experience^c

^aStrategic alliance with Tokio Marine Asset Management. ^bRepresents roll-forward market value plus undrawn capital as March 31, 2021. ^cRepresents Pathway's 19 investment partners.

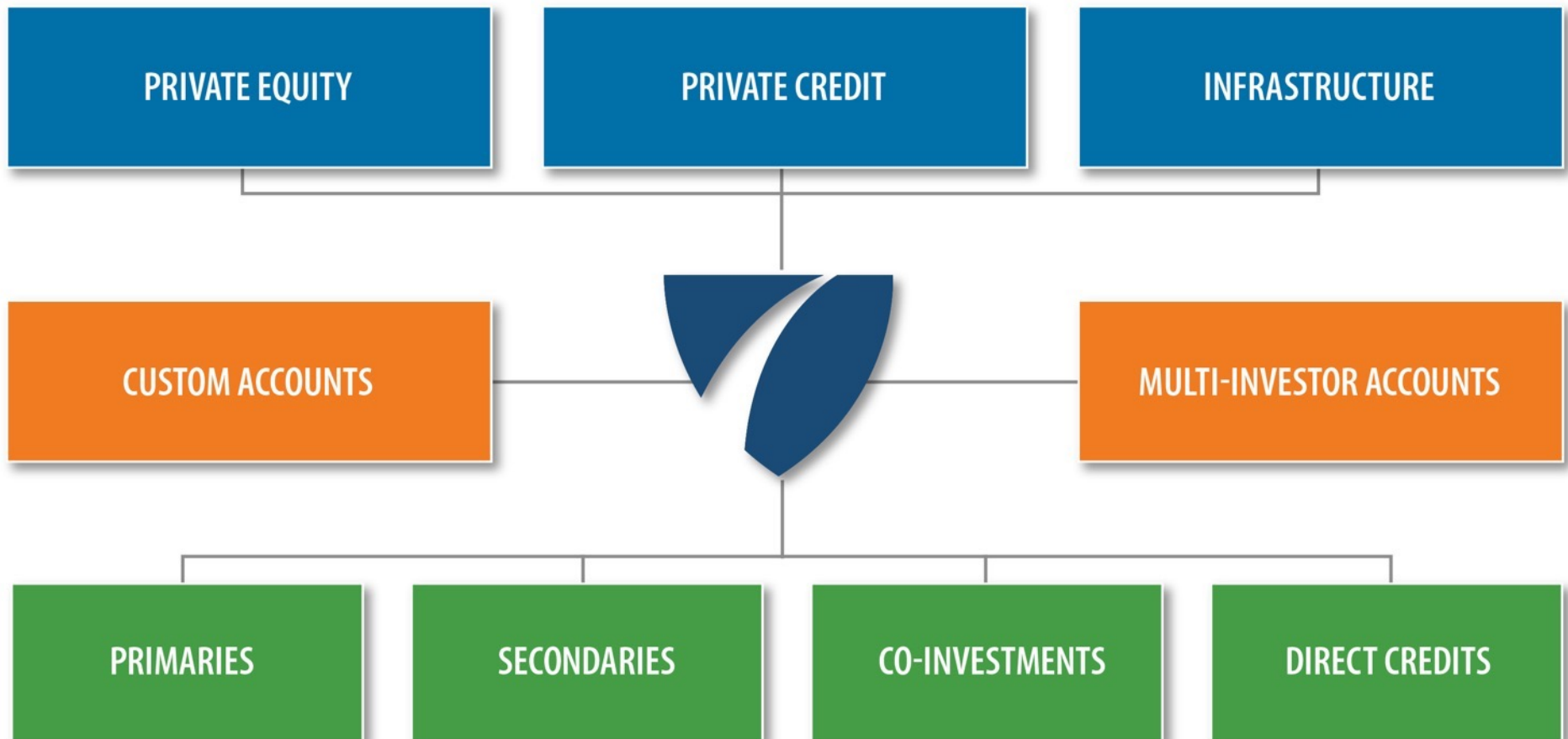


IPERS/Pathway Relationship

- Pathway has been dedicated to the success of IPERS' PE portfolio since the program's inception in 1985 and since 1993 as its fully discretionary manager.
 - Pathway has generated a since-inception net-net annual return of 16.8% and nearly \$8.8 billion in gains since 1993.
- The portfolio has demonstrated resilience during various market cycles and economic conditions, including during the ongoing COVID-19 pandemic.
 - The portfolio had a record-breaking 1-year period, posting an annual return of 35.3% and a net gain of \$1.9 billion, as of December 31, 2020.
- IPERS' PE program has generated strong, consistent returns that significantly exceed industry and public market returns
 - The since-inception net return outperforms IPERS' Custom Benchmark (Wilshire 5000 + 300bps) by 450 basis points.
 - \$6.6 billion more than what would have been achieved had IPERS invested in the benchmark.
- IPERS' compelling returns have been supported by meaningful realizations.
 - In each of the past 10 years, the portfolio generated annual distributions in excess of \$700 million. Over the 10-year period, distributions totaled \$9.0 billion, outpacing contributions by \$2.5 billion.
 - Distributions in 2020 totaled \$1.1 billion, the largest annual distribution amount in the program's history.



Global Provider of Private Market Solutions





Experienced and Stable Investment Team

 Douglas K. Le Bon Sr. Managing Director 42 Years' PE Experience	 James H. Reinhardt Sr. Managing Director 38 Years' PE Experience	 Karen J. Jakobi Sr. Managing Director & Co-CIO 30 Years' PE Experience	 James R. Chambliss Managing Director 27 Years' PE Experience	 Richard S. Mazer Managing Director 26 Years' PE Experience
 Alex M. Casbolt Managing Director 19 Years' PE Experience	 Vincent P. Dee, CFA Managing Director 19 Years' PE Experience	 Terrence G. Melican Managing Director & Co-CIO 25 Years' PE Experience	 Valerie A. Ruddick Managing Director 25 Years' PE Experience	 Wayne D. Smith, CFA Managing Director 25 Years' PE Experience
 Jason C. Jenkins, CFA Managing Director 17 Years' PE Experience	 Simon Y.S. Lau Managing Director 15 Years' PE Experience	 Canyon J. Lew Managing Director 21 Years' PE Experience	 Matthew M. Lugar Managing Director 19 Years' PE Experience	 Derrek I. Ransford, CFA Managing Director 19 Years' PE Experience
	 John T. Ruggieri, CFA Director 11 Years' PE Experience	 Mikael Sand, CFA Director 13 Years' PE Experience	 Nicholas J. Siemsen, CFA Director 11 Years' PE Experience	 Pete Veravanich Managing Director 21 Years' PE Experience

Private Market Experience of Pathway's Professionals

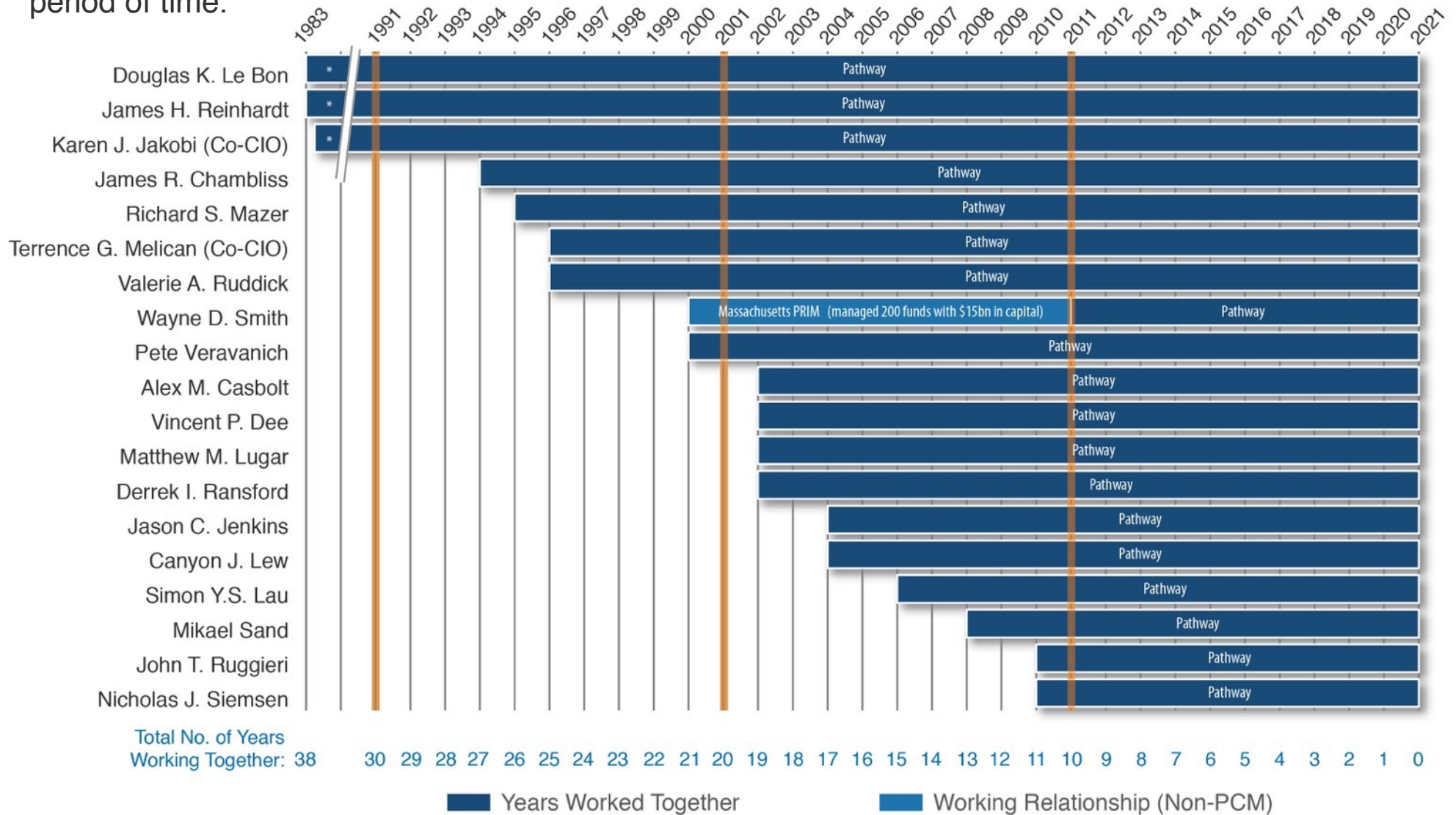
\$97 BILLION	SINCE 1983	28 YEARS	16,000 INVESTMENTS REVIEWED	325 ADVISORY BOARDS
Over \$97 billion invested in the private markets. ¹	Certain Pathway professionals have been active investors in the private markets since 1983.	10 IC members average 28 years of private market experience.	Over 16,000 investment opportunities reviewed. ¹	Pathway serves on over 325 advisory boards.

NOTE: Blue line indicates member of Pathway's Investment Committee ("IC").

1. Represents Pathway's discretionary and non-discretionary activity from its inception in 1991 through March 31, 2021.



Pathway's most-senior investment professionals have worked together as a team for a significant period of time.



*Worked together at Wilshire Associates from 1983 to 1990.



Organizational Chart

Investment Team

Douglas K. Le Bon Senior Managing Director		James H. Reinhardt Senior Managing Director		Karen J. Jakobi Senior Managing Director & Co-CIO		Alex M. Casbolt† Managing Director		James R. Chambliss Managing Director		Vincent P. Dee, CFA Managing Director					
Jason C. Jenkins, CFA Managing Director		Simon Y.S. Lau† Managing Director		Canyon J. Lew Managing Director		Matthew M. Lugar* Managing Director		Richard S. Mazer Managing Director		Terrence G. Melican Managing Director & Co-CIO		Derrek I. Ransford, CFA Managing Director			
Valerie A. Ruddick Managing Director		Wayne D. Smith, CFA* Managing Director		Pete Veravanich Managing Director		John T. Ruggieri, CFA* Director		Mikael Sand, CFA† Director		Nicholas J. Siemsen, CFA Director					
Kevin W. Bland Principal		Stefan Goettl† Principal		Bryan P. Nelson, CFA Principal		Paul J. de Groot, CFA Sr. Vice President		Jeffrey L. Buress* Sr. Vice President		Mitchell T. Clemente Sr. Vice President		Wyatt H. Geiger, CFA Sr. Vice President		Justin C. Maney, CFA Sr. Vice President	
Brett W. Richardson, CFA Sr. Vice President		Jason K. Yu† Sr. Vice President		Adam A. Belkairous Vice President		Brenton W. Croteau Vice President		Blessie Hwang, CFA Vice President		Matthew T. Kahn Vice President		Trisha Mandalia Mayr† Vice President		Veronica Milani† Vice President	
Gina Park Vice President		Benjamin Pittsley* Vice President		Hiral G. Savani, CPA Vice President		Matthew R. Spader* Vice President		John T. Carpenter Associate		Jean-François L. Casanova† Associate		Nicholas R. Faulkner Associate		Jun Tae Park† Associate	
Taylor V. Pijl Associate		Jack Pong† Associate		Hunain Riaz Associate		Christopher M. Thompson Associate		Richard L. Wang Associate		Melanie Z. McKinley Sr. Investment Closing Manager		Timothy D. Berry, CAIA Sr. Investment Analyst		Jingyi Chang† Sr. Investment Analyst	
Zakir S. Ghyaz Sr. Investment Analyst		Adrian J. Gonzalez Sr. Investment Analyst		Taylor C. Grenawalt Sr. Investment Analyst		Ross D. Hooper Sr. Investment Analyst		Dillon E. Jalbert* Sr. Investment Analyst		Ryan J. Lassen Sr. Investment Analyst		Ada N. Posp† Sr. Investment Analyst		Cameron T. Rinn* Sr. Investment Analyst	
William A. Belmont* Investment Analyst		Morgan A.L. Brokaw* Investment Analyst		Joseph R. Hegan† Investment Analyst		Vincent N. Kardos Investment Analyst		Matthew Pandit, CFA† Investment Analyst		Yuhui M. Shi Investment Analyst		Andrew J. Vanderschans Investment Analyst		Spencer M. Knight Monitoring Analyst	

Client Services

Gerard R. Branka* Sr. Vice President	Ben Dreyer† Sr. Vice President
Ed Hoffman, CFA, FRM Sr. Vice President	Martin J. Wing, CAIA Sr. Vice President
7 Staff	

Legal

Ashok K. Tripathi, Esq. Sr. Vice President & General Counsel 8 Staff

Corporate Accounting,
Fund Accounting & Tax

Curtis P. Gerlach, CPA (inactive) Director & CFO 63 Staff
--

Compliance

Milt M. Best, CFA Director & CCO 6 Staff

Risk Management

John Reynolds Sr. Vice President 1 Staff

Systems Administration

Brian M. Leyran Vice President—Systems Administration 5 Staff
--

Software Development

Michael C. Long Sr. Vice President—Software Development 5 Staff
--

Editorial & Production

Christopher M. Lopez Editor & Production Manager 5 Staff

HR & Admin.

David J. Tosches Sr. Vice President of HR 27 Staff

NOTES: Bold type denotes Pathway partners. Blue shading denotes members of client team. *Rhode Island staff. †London staff. ‡Hong Kong staff.



Pathway Performance vs. Peer Fund-of-Funds Benchmarks

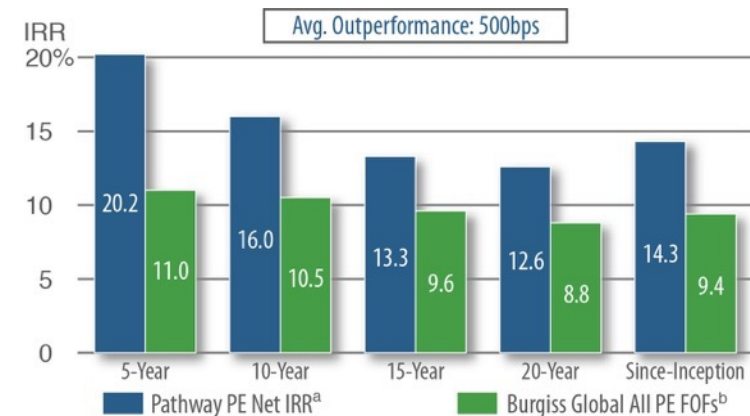
At December 31, 2020

(\$ in millions)

PERFORMANCE HIGHLIGHTS

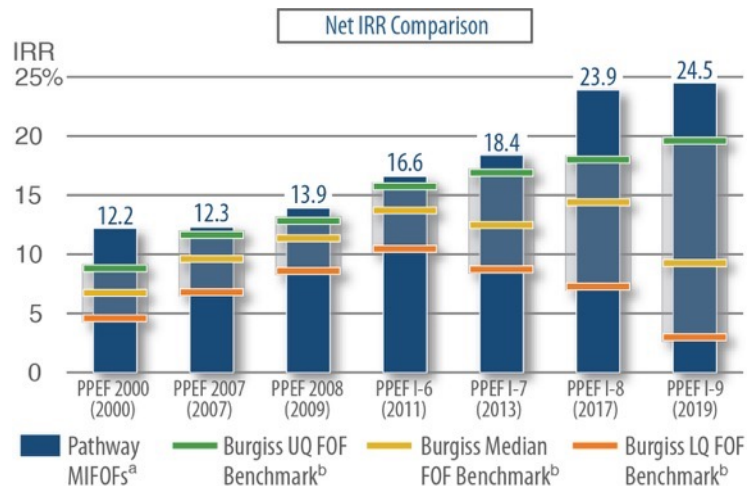
- Pathway's private equity composite outperforms the fund-of-funds benchmark horizon returns for each period shown.
- All of Pathway's multi-investor funds of funds (MIFOs) rank in the upper quartile for both net IRR and TVPI.

HORIZON PERFORMANCE COMPARISON

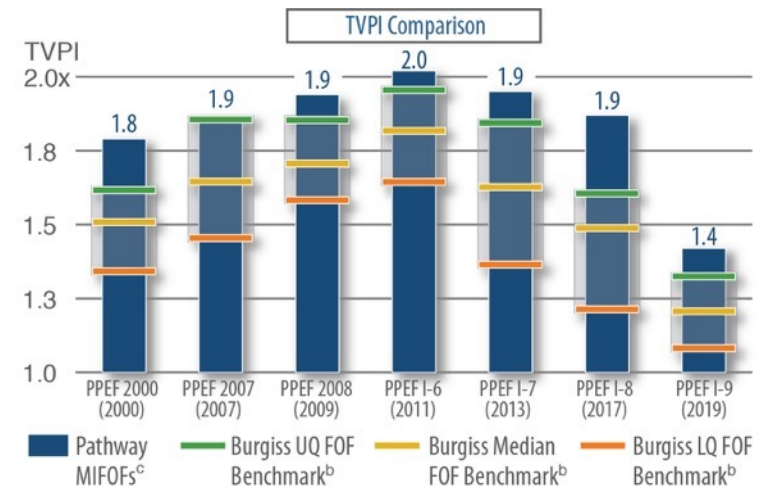


NOTE: Please see notes on page 42.

MULTI-INVESTOR FUND-OF-FUNDS PERFORMANCE COMPARISON



NOTE: Please see notes on pages 42 and 43.



NOTE: Please see notes on pages 42 and 43.

An abstract graphic on the left side of the slide, featuring several overlapping curved shapes in various shades of blue and white, creating a sense of depth and movement.

Investment Plan and Results



2020 Investment Plan and Results

(\$ in millions)

Type	2020 Plan	2020 Actual	
	Targeted Commitment	No. of Partnerships ^a	Commitment Amount ^b
Acquisitions	\$350–\$550	11	\$443.7
Venture Capital	\$100–\$200	7	176.3
Special Situations	\$100–\$200	3	120.0
Debt-Related	Up to \$50	–	0.0
Total	\$700	21	\$740.0^d
Non-U.S.	\$100–\$200	11	\$229.5
Co-investments	Up to \$105 ^c	22	\$104.8
Secondaries	Up to \$105 ^c	1	\$10.0

^aComprises primary partnership investments only; does not include follow-on commitments, commitments made to associated flex funds, direct co-investments, or secondary partnership investments.

^bRepresents all commitments.

^cRepresents 15% commitment to co-investments and 15% commitment to secondaries based on \$700 million in total private equity allocation.

^dGTCR XIII was initially scheduled to close in 2021, but the general partner held a first and final close in the fourth quarter of 2020. Pathway obtained permission from IPERS to commit \$40.0 million to GTCR XIII on November 2, 2020. As a result, IPERS' 2021 private equity allocation was reduced by the amount corresponding to the GTCR XIII commitment.

95%

Oversubscribed
Investments

100%

GPs with >10
Years of Experience

90%

Advisory Board
Seat

<3%

Selection Rate of
Primary Opportunities



2021 Investment Plan and Progress to Date

At May 17, 2021

(\$ in millions)

	Planned
Commitments	\$960 ^a
Target Size of Commitments	\$30–\$50; Up to \$15 per Direct Co-investment
Investment Strategy	Acquisitions, Venture Capital, Special Situations, Debt-Related, Secondaries, and Co-investments

	2021 Plan	2021 YTD Closed and Approved ^b	
Type	Targeted Commitment	No. of Partnerships ^c	Commitment Amount ^d
Acquisitions	\$400–\$600	6	\$307.4
Venture Capital	\$150–\$250	10	172.9
Special Situations	\$200–\$300	8	290.0
Debt-Related	Up to \$100	–	0.0
Total	\$960^a	24	\$770.3
Non-U.S.	\$100–\$250	7	\$88.1
Co-investments	Up to \$150 ^e	14	\$80.0
Secondaries	Up to \$150 ^e	4	\$40.0

^aIncludes investments in non-U.S.-focused partnerships as well as secondary partnership interests and co-investments. Adjusted downward to reflect a primary commitment of \$40.0 million to GTCR XI made in the fourth quarter of 2020 to accommodate an early closing.

^bComprises closed commitments, as well as those that have been approved by Pathway's Investment Committee but are pending close.

^cComprises primary partnership investments only; does not include follow-on commitments, commitments made to associated flex funds, direct co-investments, or secondary partnership investments.

^dRepresents all commitments.

^eRepresents 15% commitment to co-investments and 15% commitment to secondaries based on \$1.0 billion in total private equity allocation.



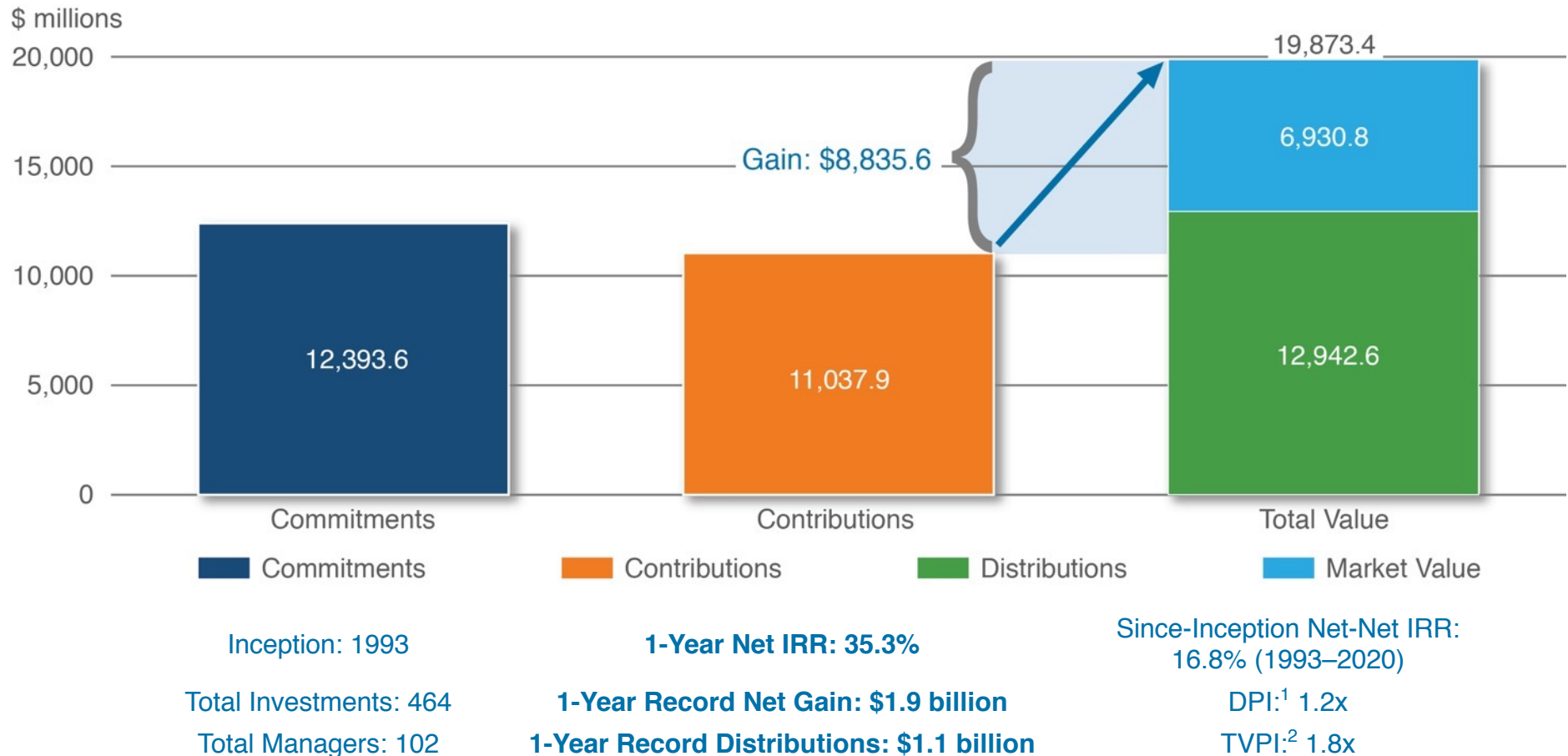
Pathway's Discretionary Portfolio Review



Financial Summary

Since 1993

At December 31, 2020



NOTE: Amounts may not foot due to rounding.

1. Distributions to paid-in capital.

2. Total value to paid-in capital (DPI + RVPI).



Portfolio Diversification

At December 31, 2020

MANAGER EXPOSURE

Total No. of Managers	84 ^a
Top 5 Managers	26.0%
Largest Manager	6.0%

PARTNERSHIP EXPOSURE

Total No. of Partnerships	365 ^a
Top 5 Partnerships	9.7%
Largest Partnership	2.2%

COMPANY EXPOSURE

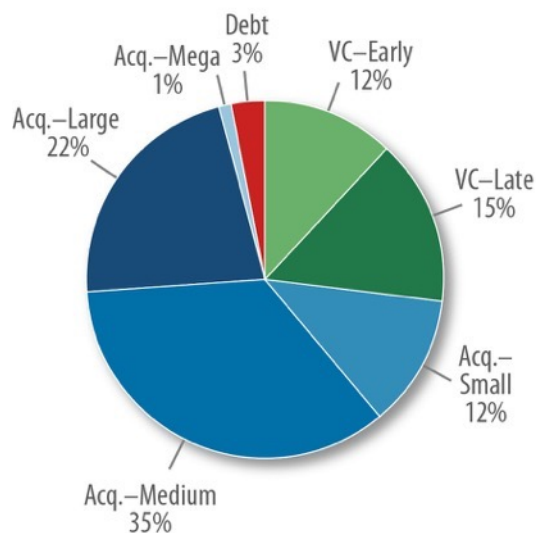
Total No. of Companies	3,089 ^a
Top 5 Companies	5.0%
Largest Company	1.3%

^aRepresents active and unique.

- IPERS' portfolio is well-diversified by manager, partnership, and portfolio company.

STRATEGY

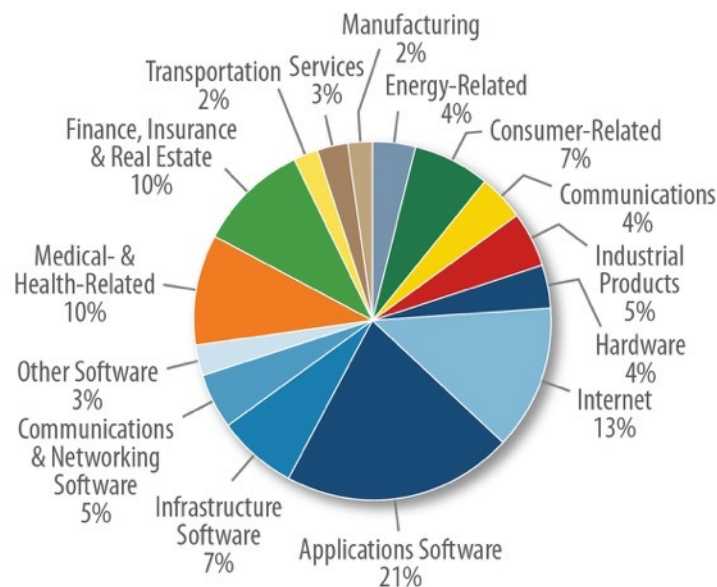
As a % of Portfolio Company MV



NOTE: Acquisition substrategies are based on the following ranges of total enterprise values: Mega >\$10 billion, Large \$1-\$10 billion, Medium \$200 million-\$1 billion, and Small <\$200 million.

INDUSTRY

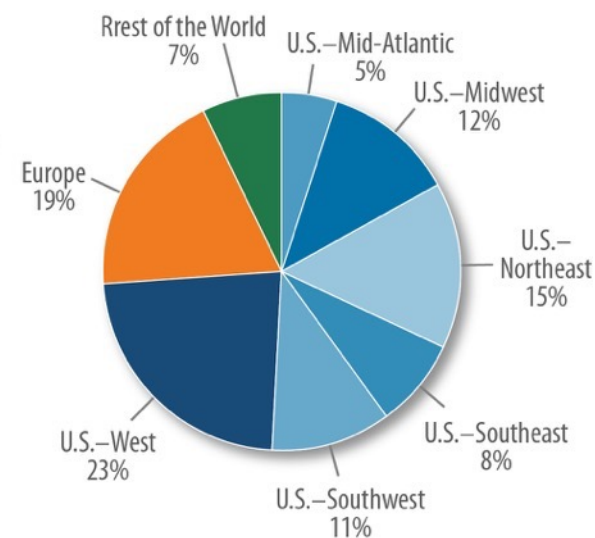
As a % of Portfolio Company MV



NOTE: Excludes seed investments, toehold investments, and other investments for which industry classifications were not disclosed by the partnerships.

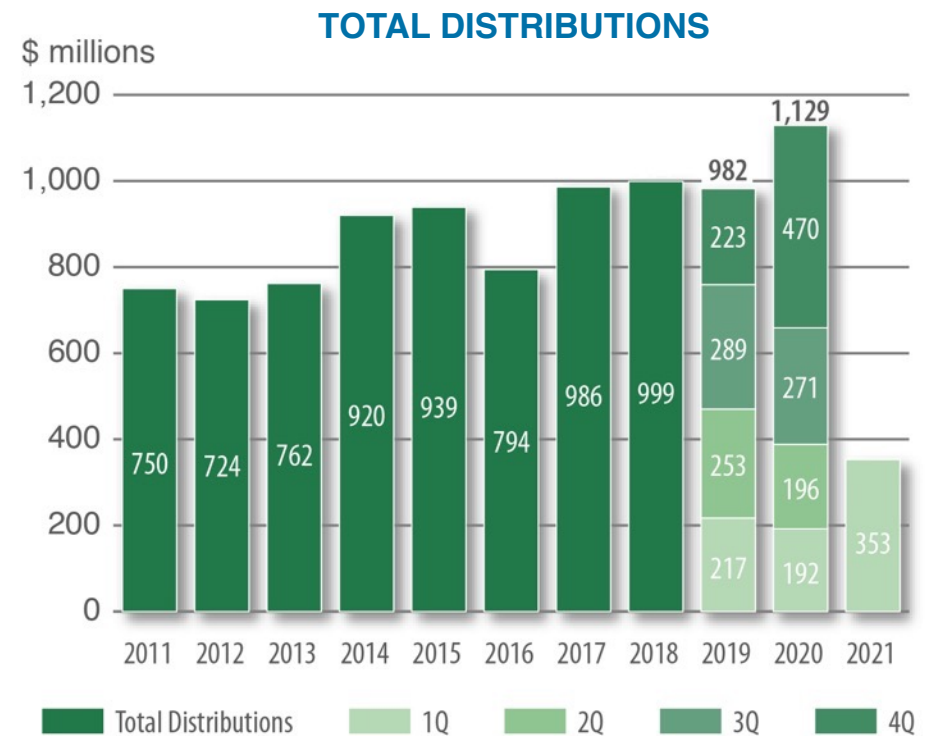
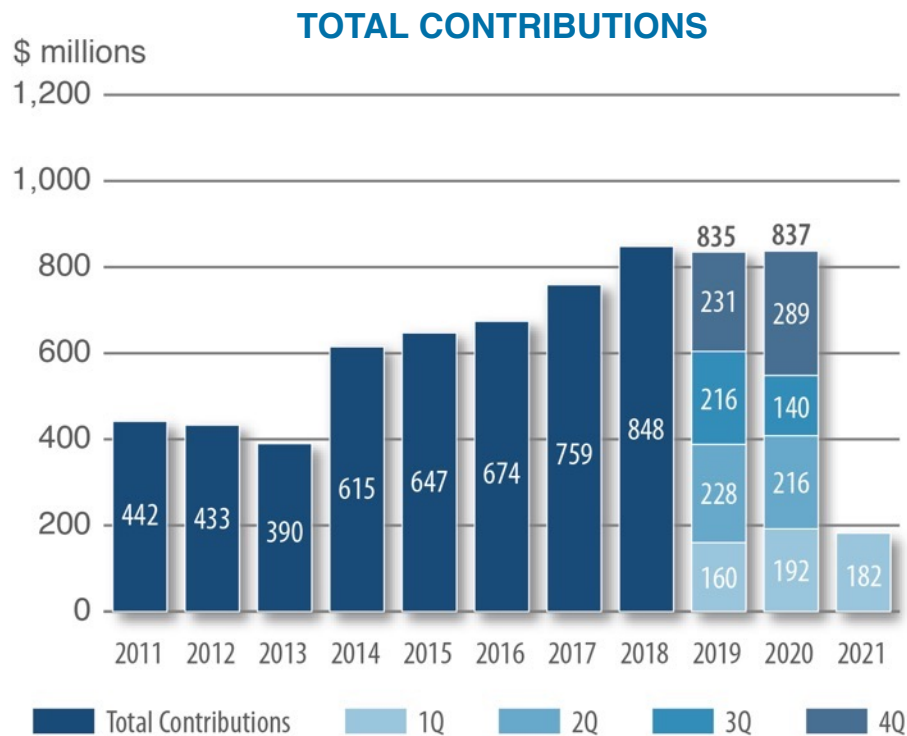
GEOGRAPHIC REGION

As a % of Portfolio Company MV





Investment Activity



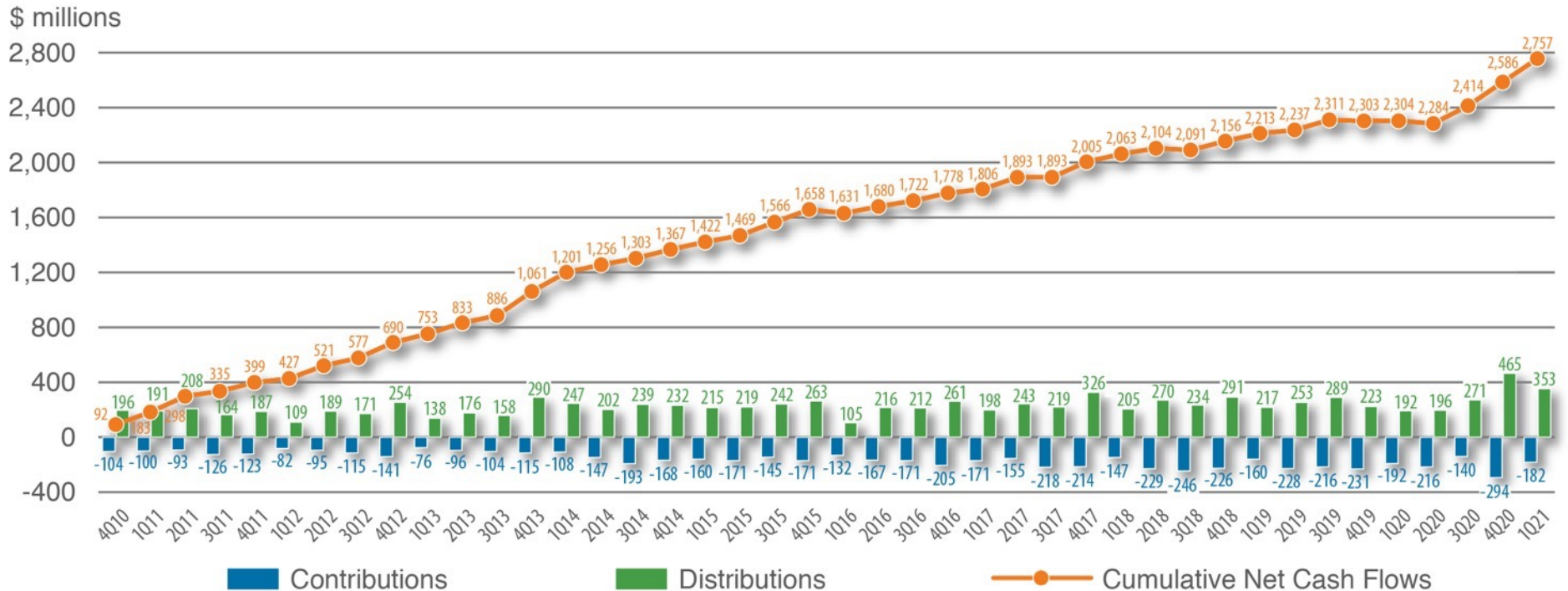
NOTES: Amounts represent contributions to and distributions from the underlying partnerships. Amounts may not foot due to rounding.

- Fourth-quarter distributions set a record, marking the first time distributions exceeded \$400 million. This brought 2020 distributions to \$1.1 billion—the largest annual distribution total in the portfolio's history.
- The record-breaking level of distributions was driven by several portfolio company investments that experienced meaningful liquidity events, including public stock sales and successful M&A exits.



Investment Activity (continued)

QUARTERLY CASH FLOWS



NOTES: Amounts represent contributions to and distributions from the underlying partnerships. Amounts may not foot due to rounding.

- Distributions have exceeded contributions in 38 of the past 42 quarters (since 4Q10). Over this period, distributions totaled \$9.5 billion, outpacing contributions by \$2.8 billion.



Year-over-Year Performance Update

At December 31, 2020

(\$ in millions)

	No. of Inv.	Commitments	Cumulative Contributions	Cumulative Distributions	Market Value	Total Value	Gain/ Loss	S-I IRR ^a	TVPI ^b	DPI ^c
Dec 31, 2020	464	\$12,393.6	\$11,037.9	\$12,942.6	\$6,930.8	\$19,873.4	\$8,835.6	16.8%	1.8x	1.2x
Dec 31, 2019	424	11,623.6	10,196.1	11,818.0	5,332.6	17,150.6	6,954.5	16.3%	1.7x	1.2x
YOY Change	40	\$770.0	\$841.7	\$1,124.6	\$1,598.2	\$2,722.8	\$1,881.1			

NOTE: The inception of Pathway's discretionary track record is 1993.

^aRepresents IPERS' discretionary since-inception net-net IRR, which includes the impact of Pathway's management fees.

^bTotal value to paid-in capital.

^cDistributions to paid-in capital.

- IPERS' private equity portfolio has remained resilient throughout the ongoing COVID-19 pandemic.
- During 2020, the portfolio generated a 1-year return of 35.3% and a record-setting gain of \$1.9 billion—the largest annual gain in the portfolio's 28-year history and nearly double the prior record set in 2019.
- The portfolio markedly outperforms various public market indices for the 1-year period, including the S&P 500 (18.4%), the Wilshire 5000 (22.2%), and the MSCI World Index (16.5%).



Performance by Investment Strategy and Region

At December 31, 2020

(\$ in millions)

	Contrib.	Distrib.	MV	TV	G/L	S-I Net IRR	TVPI ^a	DPI ^b	1-Year G/L	1-Year IRR
Acquisitions	\$6,098.9	\$7,319.6	\$3,732.6	\$11,052.2	\$4,953.3	15.9%	1.8x	1.2x	\$1,027.7	35.7%
Venture Capital	2,181.7	2,640.0	1,658.1	4,298.1	2,116.4	35.1%	2.0x	1.2x	488.4	38.7%
Special Situations	2,109.9	2,317.3	1,318.9	3,636.2	1,526.3	17.8%	1.7x	1.1x	351.3	35.7%
Debt	647.4	665.7	221.3	886.9	239.5	9.7%	1.4x	1.0x	13.6	6.7%
Total	\$11,037.9	\$12,942.6	\$6,930.8	\$19,873.4	\$8,835.6	16.8%^c	1.8x	1.2x	\$1,881.1	35.3%
U.S.	\$9,162.0	\$10,893.3	\$5,711.9	\$16,605.2	\$7,443.2	17.1%	1.8x	1.2x	\$1,578.2	35.8%
Non-U.S.	1,875.8	2,049.3	1,218.9	3,268.2	1,392.4	16.4%	1.7x	1.1x	302.9	33.1%
Total	\$11,037.9	\$12,942.6	\$6,930.8	\$19,873.4	\$8,835.6	16.8%^c	1.8x	1.2x	\$1,881.1	35.3%

NOTE: Amounts may not foot due to rounding.

^aTotal value to paid-in capital.

^bDistributions to paid-in capital.

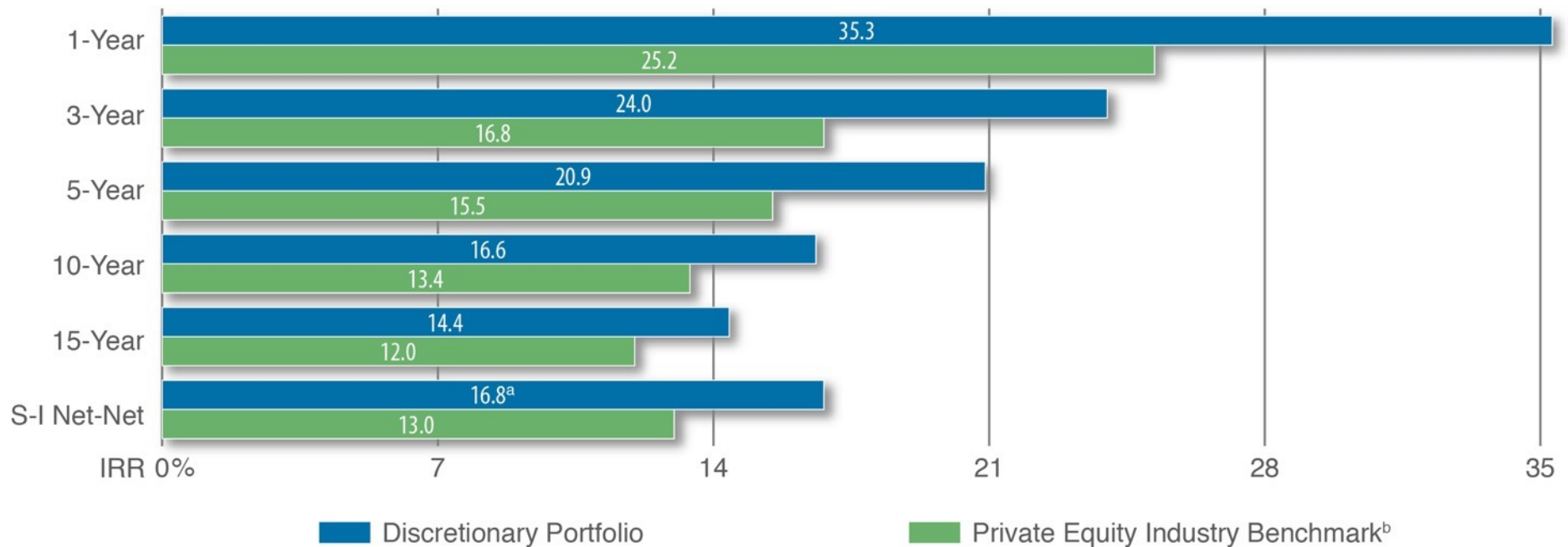
^cRepresents IPERS' discretionary since-inception net-net IRR, which includes the impact of Pathway's management fees.

- The portfolio's acquisition, special situation, venture capital, U.S.-focused, and non-U.S. partnerships each posted 1-year returns of 33% or greater.



Performance vs. Private Equity Benchmarks

At December 31, 2020



^aIncludes the impact of Pathway's management fees.

^bBurgiss Private iQ pooled global all private equity return for 1993- through 2020-vintage funds, as of December 31, 2020, as produced using Burgiss data.

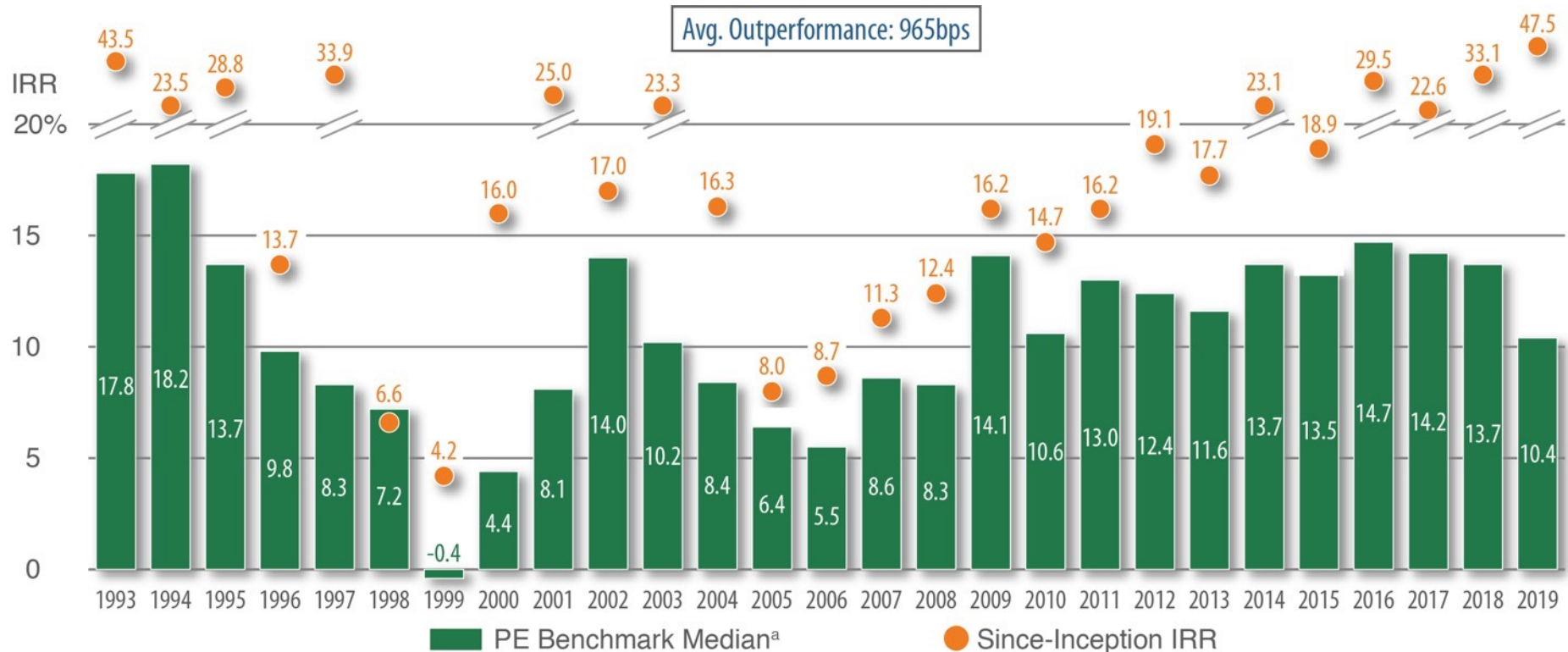
- Pathway consistently outperforms private equity benchmarks over multiple time periods: the average outperformance for the time periods shown is **536 basis points**.



Performance vs. Private Equity Benchmarks (continued)

At December 31, 2020

VINTAGE YEAR COMPARISON-IRR



NOTE: The 2020 vintage is excluded because it is considered immature and therefore not appropriate for benchmarking.

^aBurgiss global all private equity vintage year return benchmark, as of December 31, 2020, as produced using Burgiss data.

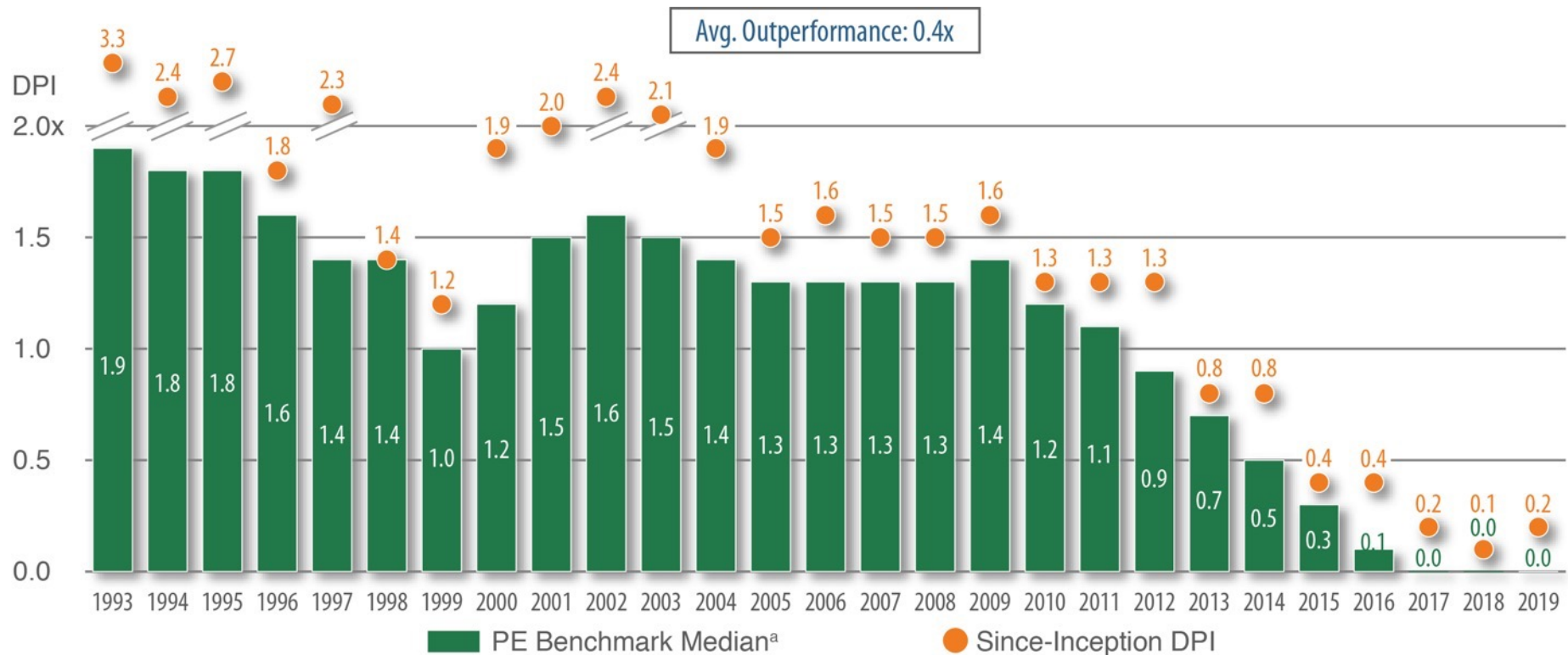
- All but 1 of the discretionary portfolio's 27 vintages (1998) outperformed the industry median IRR.



Performance vs. Private Equity Benchmarks (continued)

At December 31, 2020

VINTAGE YEAR COMPARISON—DPI



NOTE: The 2020 vintage is excluded because it is considered immature and therefore not appropriate for benchmarking.

^aBurgiss global all private equity vintage year DPI benchmark, as of December 31, 2020, as produced using Burgiss data.

- All but 1 of the discretionary portfolio's 27 vintages (1998) outperformed the industry median DPI.



Performance vs. IPERS' Custom Benchmark and Wilshire 5000

At December 31, 2020



^aIncludes the impact of Pathway's management fees.

^bEquals the dollar-weighted Wilshire 5000. Contributions less than three years old are benchmarked against the dollar-weighted T-Bill Index. Due to significant outperformance, which results in a shorting of the index, a modified dollar-weighted return (PME⁺) was utilized.

^cEquals the dollar-weighted Wilshire 5000 plus 300 basis points. Contributions less than three years old are benchmarked against the dollar-weighted T-Bill Index. Due to significant outperformance, which results in a shorting of the index, a modified dollar-weighted return (PME⁺) was utilized.

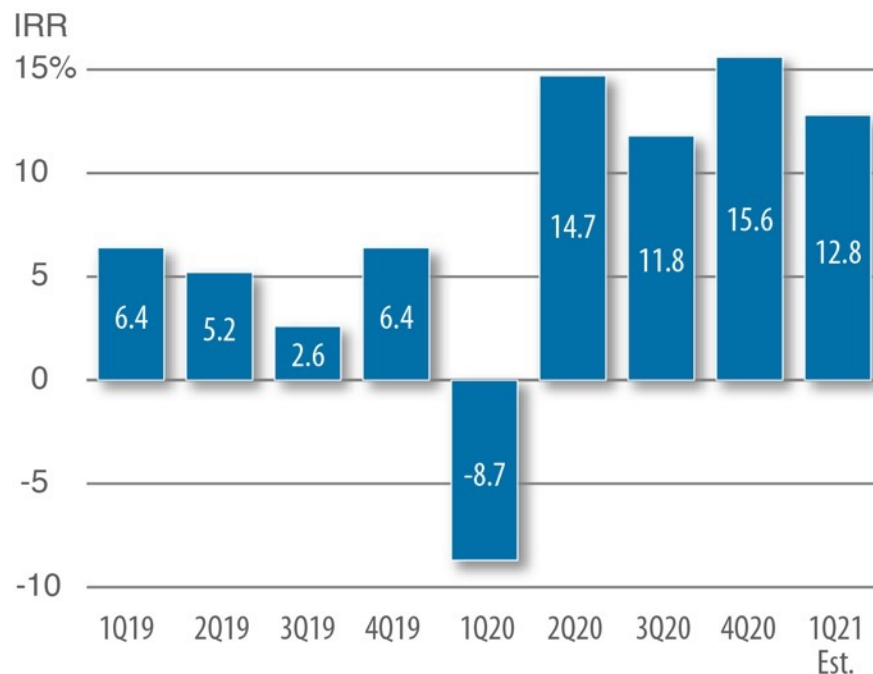


Looking Forward—Preliminary First-Quarter Performance

At March 31, 2021

(\$ in millions)

QUARTERLY RETURN SUMMARY

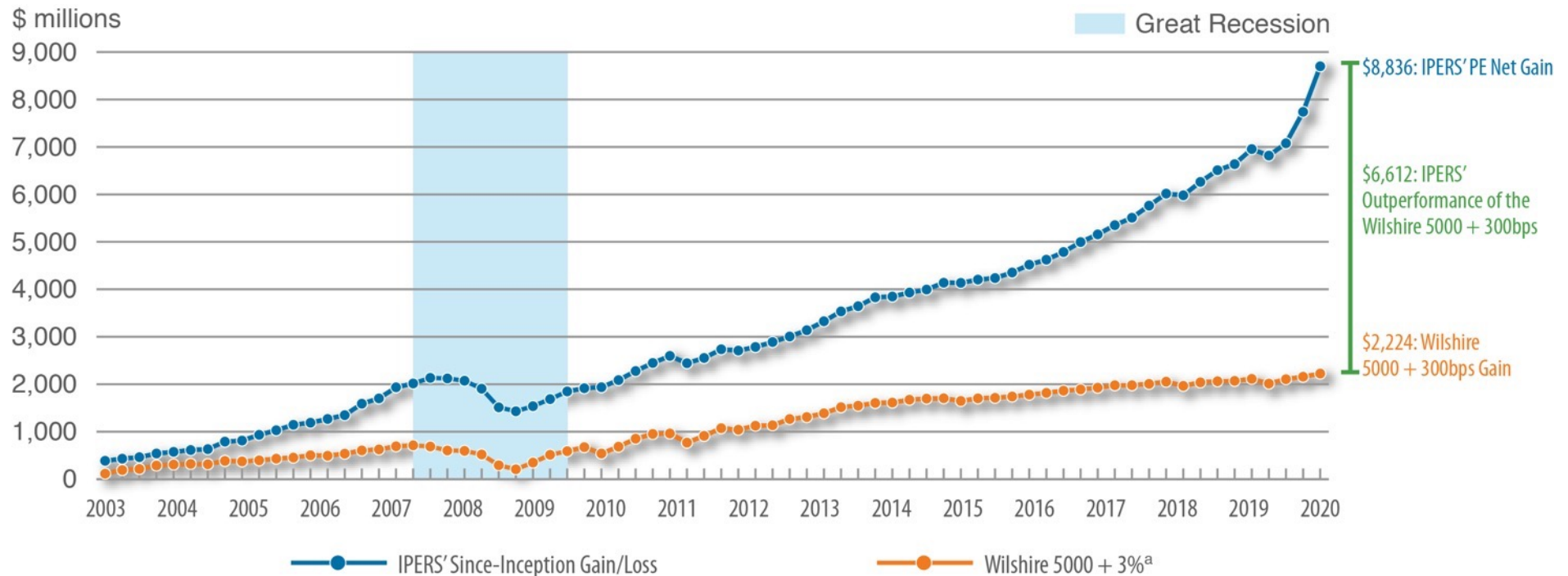


- 211 partnerships in the portfolio, representing 71% of the portfolio's market value, have provided preliminary first-quarter performance.
- These partnerships posted a first-quarter return of approximately 12.8%
- Following the largest quarterly distribution since inception (\$470 million in the fourth quarter of 2020), the portfolio distributed \$353 million in the first quarter of 2021—the second-largest quarterly distribution in the program's history.



Pathway's Since-Inception Net Gain for IPERS' Private Equity Portfolio

At December 31, 2020



NOTE: Comprises Pathway's discretionary portfolio, which began in January 1, 1993.

^aEquals the dollar-weighted Wilshire 5000 + 300 basis points, calculated according to IPERS' net cash flows.

- The portfolio constructed by Pathway has generated net gains nearing \$8.8 billion—\$6.6 billion more than what would have been achieved had IPERS invested in the Wilshire 5000 + 300 basis points over the same period.

An abstract graphic on the left side of the slide, consisting of several overlapping curved shapes in various shades of blue and white, creating a sense of depth and movement.

Summary



Summary

- IPERS' private equity portfolio comprises a well-diversified set of high-quality, experienced general partners who have successfully navigated various market conditions, including the COVID-19 pandemic.
- The portfolio has generated strong, record-breaking performance.
 - During 2020, IPERS' portfolio delivered a 1-year return of 35.3% and a gain of \$1.9 billion—the largest annual gain in the portfolio's history.
- Overall returns continue to exceed industry and public market benchmarks.
 - The since-inception net return has outpaced the industry pooled horizon return by more than 380 basis points.
 - With net gains nearing \$8.8 billion—\$6.6 billion more than what would have been achieved had IPERS invested in the Wilshire 5000 + 300bps—the private equity program contributes substantial value to IPERS' overall portfolio.
- Strong performance has been substantiated by meaningful realizations driven by underlying managers that have capitalized on attractive M&A opportunities and IPOs.
 - Distributions in 2020 totaled \$1.1 billion, the largest annual distribution total in the program's history.



Appendix



Pathway Direct Credit Solution–Primer

A customized direct credit program focused on IPERS' existing PE managers

- Pathway would construct a diversified portfolio of direct credit investments in high-quality market-leading companies sourced exclusively from IPERS' existing GP relationships.
 - IPERS' private equity portfolio comprises experienced managers that are coveted borrowers for direct lending firms given their long histories of making successful investments.
 - For 21 consecutive vintage years (1999–2019), IPERS' PE portfolio has generated positive returns that exceed median industry benchmarks.
 - Direct credits to be considered only from managers that are in good standing, that have exhibited strong success rates with a consistent record of capital preservation, and that employ appropriate strategies.
 - Enhanced diversification and disciplined portfolio construction enabled by consistent, high-quality deal flow.
 - Attractive risk/return profile with no fund-level leverage utilized.
 - Significant fee savings that accrue to the benefit of IPERS: *No underlying fee or carried interest, and pass-through of upfront fees.*

ESTIMATED INCREMENTAL PORTFOLIO GAINS FROM DIRECT CREDIT INVESTMENTS COMPARED WITH PARTNERSHIPS

Based on \$100 million in Annual Commitments over a 10-Year Period

Portfolio Yield (Gross)	8.0%
Estimated Total Gain (\$MM)	\$202
Estimated Management Fee Savings (\$MM)	\$32
Estimated Carried Interest Savings (\$MM)	\$26
Incremental Portfolio Gains from Direct investments (\$MM)	\$57

NOTE: Please see notes on page 44.



Overview of Pathway's Direct Credit Program

Leverage existing long-term relationships with leading private equity firms to generate consistent high-quality credit opportunities.

Overview

- Source exclusively from Pathway's existing private equity and private credit GP relationships.
- Senior/secured investments in high-quality, market-leading companies with attractive business and credit fundamentals.
- Led by Pathway's dedicated credit team supported by Pathway's broader team including 19 investment partners.
- Pathway's direct credit investment portfolio has generated strong *unlevered* returns.

Key Advantages

- Exceptional access to high-quality credit deal flow through existing relationships with leading private equity firms.
- Attractive economics (e.g., no fee/carry, pass-through of upfront fees) by sourcing directly from GP relationships.
- Enhanced diversification and disciplined portfolio construction enabled by consistent and high-quality deal flow.
- Rigorous underwriting process enabled by comprehensive coverage of credit markets, proprietary data, and access to sponsors.

CHARACTERISTICS OF HIGH-QUALITY GPs

- Consistent, long-term track records
- Low historical loss rates
- Significant resources to deploy
- Experienced and stable teams
- Proven access to high-quality deal flow
- Stable capital base

FOCUS ON HIGH-QUALITY OPPORTUNITIES

- Fit with sponsor's area of expertise
- Attractive business and industry fundamentals
- Experienced, high-quality management teams
- Strong alignment of interest
- Resilience throughout a market cycle
- Sustainable capital structure and debt

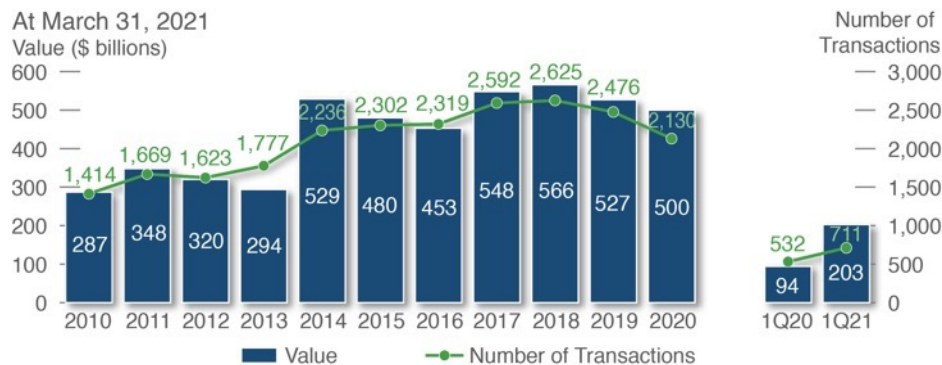


M&A and IPO Exit Markets

Global exit markets remained accommodative during the first quarter, allowing general partners to realize record-setting proceeds through a variety of exit paths.

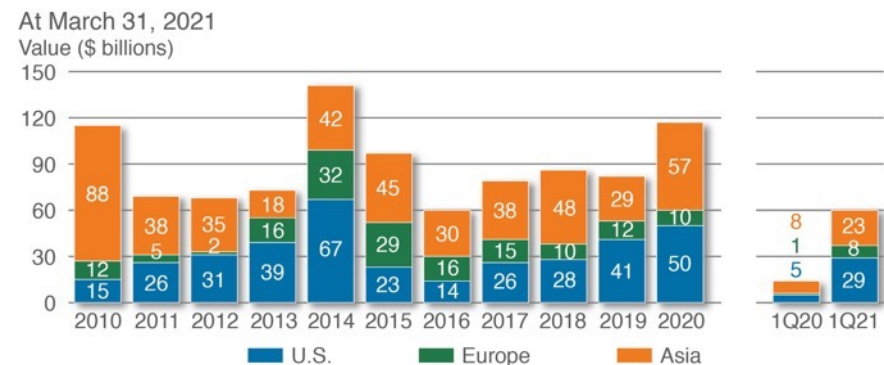
- Following a strong 2H20, M&A exit activity for PE-backed companies totaled \$203bn in 1Q21, a 116% increase from 1Q20 and the largest quarterly total on record.
 - Current market dynamics are favorable for sellers, and many general partners are reporting highly competitive sale processes involving both strategic and financial buyers.
- Highly receptive public investors and rich public market valuations encouraged many private equity firms to publicly list their portfolio companies.
 - Total proceeds raised by new offerings globally in 1Q21 totaled \$101bn, a more than 270% increase from 1Q20 and the largest quarterly amount on record.
- Special purpose acquisition companies (SPACs) continued to serve an active role as an exit option during 1Q21: 69 PE-backed companies announced mergers with SPACs during the quarter at a combined value of \$195bn, surpassing the full-year 2020 total by late February.

GLOBAL PE-BACKED M&A EXIT ACTIVITY



SOURCE: Mergermarket and Pathway Research.

GLOBAL PE-BACKED IPO ISSUANCE



SOURCE: Bloomberg, Renaissance Capital, and Pathway Research.



Buyout Markets

U.S. buyout market activity continued to accelerate during 1Q21, building on the strong momentum garnered during the second half of 2020.

- U.S. buyout investment activity totaled \$125bn in 1Q21, an increase of 10% from the prior quarter and the largest quarterly amount since the \$225bn invested during 2Q07.
 - Activity was driven largely by 571 small- and middle-market investments announced during the quarter—the largest number on record.
 - Although European buyout activity was flat in 1Q21 compared with 1Q20, the €41.8bn aggregate transaction value is 39% above the quarterly average for the past 5 years.
- Average purchase-price multiples in the U.S. increased to 11.9x EBITDA in 1Q21, surpassing the prior peak of 11.5x EBITDA in 2019.
 - Entry multiples have remained relatively high due to the high proportion of technology-related buyouts in the marketplace.
- Buyout managers remain cautious overall due to the high level of competition, ongoing market volatility, and uncertain economic outlook.
 - GPs have continued to focus on resilient/defensive sectors such as technology and healthcare, opportunistic investments, and accretive tuck-in acquisitions.

U.S. BUYOUT INVESTMENT ACTIVITY



SOURCE: Refinitiv, Pathway Research, and S&P LCD.

^aAverage PPM (as a multiple of trailing EBITDA) of all LBOs.

EUROPEAN BUYOUT INVESTMENT ACTIVITY



SOURCE: Refinitiv, Pathway Research, and S&P LCD.

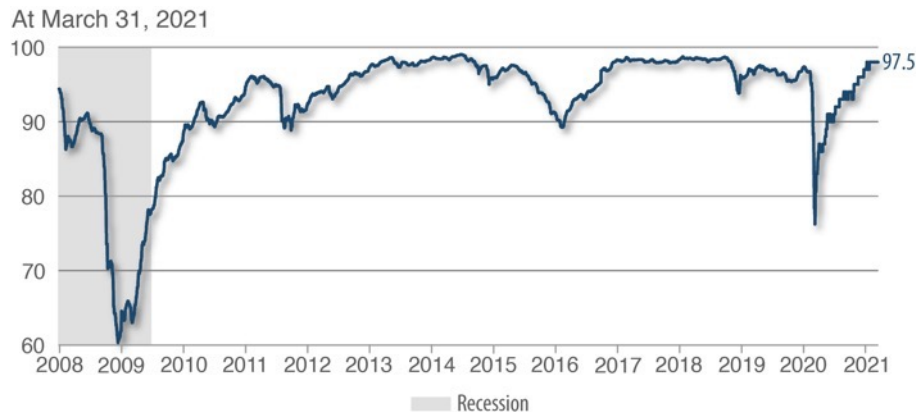
^aAverage PPM (as a multiple of trailing EBITDA) of LBOs with EV of €500 million or more.



Private Credit Markets

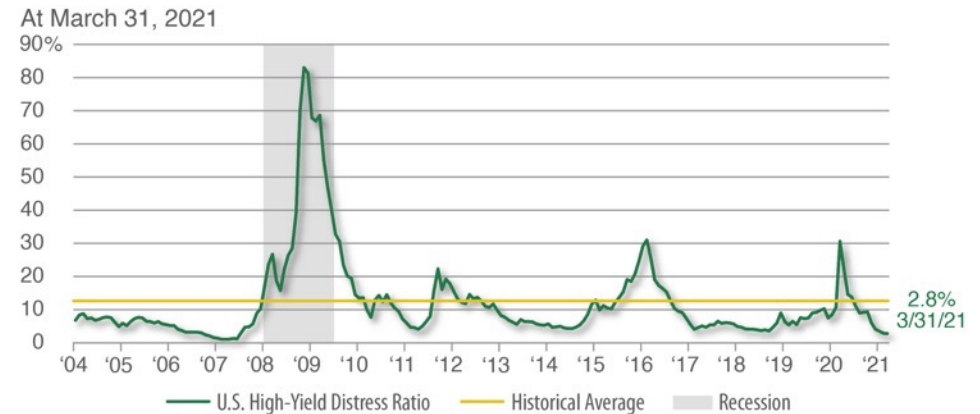
- Indicators of distress have declined markedly since the pandemic-driven market sell-off in March 2020.
 - The distress ratio (percentage of high-yield bonds with spreads of 1,000bps or higher over U.S. Treasuries) declined from 30.6% at the end of March 2020—the highest level since February 2016—to 2.8% at March 31, 2021.
 - The U.S. high-yield default rate, a lagging indicator, declined to 4.9% at March 31, 2021. High-yield default volume continued to slow in 1Q21, totaling \$3.9bn in par value, down 57% compared with 4Q20.
- Secondary credit markets have stabilized following the pandemic-induced sell-off in March 2020.
 - The S&P Leveraged Loan Index generated a modest return of 1.0% in 1Q21.
 - The average bid for the S&P Leveraged Loan Index increased to 97.5% at the end of 1Q21, up from 96.2% at the end of 4Q20 and from a recent low of 76.2% in March 2020.
- The distressed debt opportunity has been limited to date, but many companies/sectors remain vulnerable.
 - An unprecedented level of fiscal and monetary stimulus has helped to stem losses in the credit markets; however, there remains significant uncertainty in the economic outlook.

WEIGHTED AVERAGE BID OF S&P LEVERAGED LOAN INDEX



SOURCE: S&P LCD.

U.S. HIGH-YIELD DISTRESS RATIO



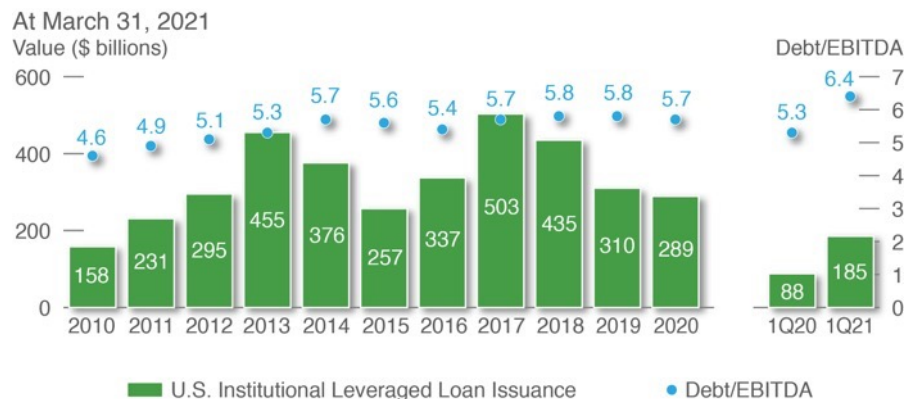
SOURCE: Fitch Ratings and National Bureau of Economic Research.



Private Credit Markets (continued)

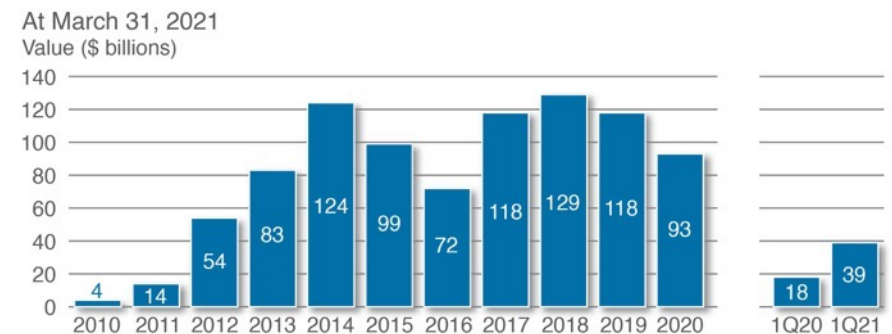
- Non-investment-grade debt markets remain highly accommodative, helping fuel the strong pace of M&A and refinancing activity.
 - Institutional leveraged loan issuance totaled \$185bn in 1Q21, more than double the issuance in 4Q20 and the highest quarterly total on record.
 - U.S. high-yield bond issuance totaled a record \$149bn in 1Q21, an increase of 56% compared with 4Q20. The high-yield market has been fueled by support from the Federal Reserve and record investor inflows into high-yield funds and ETFs.
 - The yield to maturity of the S&P Leveraged Loan 100 Index ended March at 3.74%, down from 3.98% at the end of December.
- Quarterly leveraged loan activity was supported by a strong rebound in CLO fundraising activity and a rally in the secondary credit markets.
 - CLO issuance totaled a record-setting \$39.3bn in 1Q21, an increase of 120% compared with 1Q20.

U.S. INSTITUTIONAL LEVERAGED LOAN ISSUANCE



SOURCE: S&P LCD.

ANNUAL CLO ISSUANCE



SOURCE: S&P LCD.



Private Credit Markets (continued)

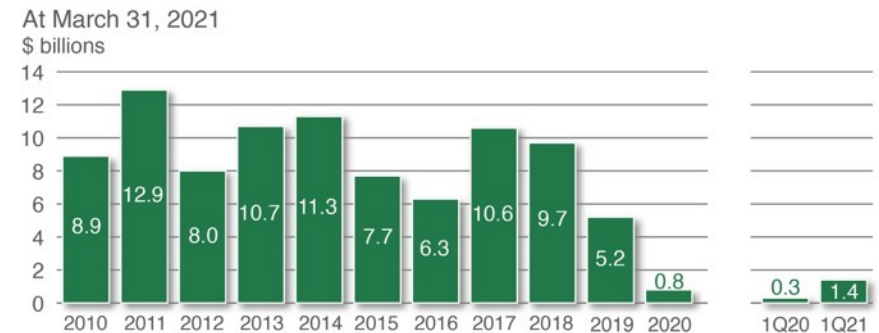
- The direct lending markets experienced robust new financing activity during 1Q21.
 - Buyout transaction activity hit a current-cycle high in 1Q21, driving an increase in financing opportunities for direct lenders.
 - Direct lending portfolios appear to have weathered the crisis relatively well overall; however, lenders with exposure to hard-hit industry sectors continue to prepare for adverse outcomes.
 - The lender-friendly environment that prevailed following the start of the pandemic was short-lived; spreads and leverage levels are now largely in line with pre-COVID levels.
- Private credit fundraising continues to be bolstered by an increase in distressed debt fundraising activity.
 - Distressed-focused funds raised \$10.8bn during 1Q21—an increase of 45% compared with the quarterly average over the past 5 years.
 - Distressed-related fundraising has increased as a result of both traditional distressed debt and opportunistic credit managers launching new funds to invest in opportunities arising from the pandemic. However, distressed-related investment activity has been relatively muted to date.

WORLDWIDE PRIVATE CREDIT FUNDRAISING ACTIVITY



SOURCE: Refinitiv, PitchBook Data, Inc., and Pathway Research.

U.S.-SPONSORED MIDDLE-MARKET LEVERAGED LOAN BANK ISSUANCE



SOURCE: S&P LCD.

Note: The middle market is defined as issuers with EBITDA of \$50 million or less.



U.S. Venture Capital

Technological advancements are driving opportunities in venture capital.

- Investment activity sky-rocketed in 1Q21; general partners have continued to deploy capital to both protect performing investments and provide them the capital needed to take advantage of new opportunities that have arisen from the crisis.
 - U.S. venture capital investment activity totaled \$62.1bn in 1Q21, the largest quarterly amount on record. Activity was driven by a record 184 mega-financings (i.e., deals with financing rounds of greater than \$100m), which accounted for approximately 64% of 1Q21 deal value.
 - Mirroring 2020, late-stage investment activity was significant, representing 42% of the first quarter's investment total.
- Amid strong public market performance, venture-backed IPO activity reached a quarterly high during the first quarter.
 - The 29 venture-backed IPOs during 1Q21 raised \$16.0bn, representing more than half of all venture-backed IPO proceeds in 2020.
- The rapid pace of innovation and adoption in multiple disciplines is driving returns and opportunities in venture capital.
 - The longer-term impact of COVID-19 could lead to further innovation and adoption of quarantine-proven business models, such as online learning, telemedicine, home fitness, and digital payments, which have garnered increased interest and support during the pandemic.

U.S. VENTURE CAPITAL—FUNDRAISING & INVESTMENT ACTIVITY

At March 31, 2021

Value (\$ billions)

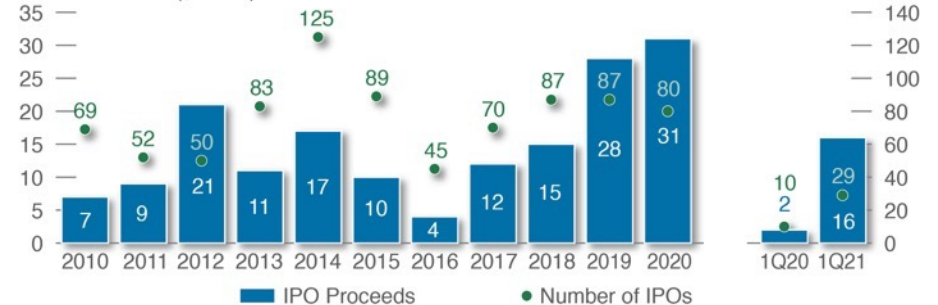


SOURCE: PwC and CB Insights' MoneyTree™ Report, Refinitiv, and Pathway Research.

U.S. VENTURE CAPITAL—IPO ACTIVITY

At March 31, 2021

Total Disclosed Value (\$ billions)



SOURCE: Bloomberg, Renaissance Capital, and Pathway Research.



Private Equity Fundraising Activity

Fundraising activity remained strong in 1Q21, driven by continued demand for high-quality managers.

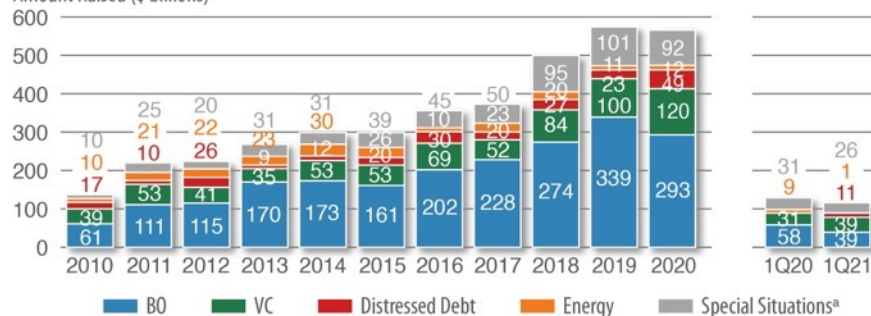
- Global PE fundraising activity has increased since 2009 as a result of attractive performance industry-wide and the continued expansion of the asset class, both by strategy and region.
 - Worldwide fundraising reached \$116bn during the quarter, a decline of 11% compared with 1Q20 but still strong based on historical levels.
 - Contrasting the decline in value, a record 510 funds held closes during the first quarter.
- The quarterly decline in activity was driven primarily by the lack of a true mega-buyout fund being raised during the quarter.
 - However, several prominent buyout funds, including Hellman & Friedman X (\$22.0bn target) and Genstar X (\$11.7bn), have closed or are expected to hold closes during 2Q21.
- Venture capital–focused fundraising was robust during the quarter, accounting for 34% of global activity.
 - Notable venture capital funds raised during the quarter include Bessemer Venture Partners XI (\$2.5bn) and Bond Capital II (\$1.9bn).

WORLDWIDE PRIVATE EQUITY FUNDRAISING

By Strategy

At March 31, 2021

Amount Raised (\$ billions)



SOURCE: Refinitiv and Pathway Research.

NOTES: Fundraising amounts are based on net amounts raised, which are adjusted for fund-size reductions.

Amounts may not foot due to rounding.

^aComprises generalist, special situations, and other fund strategies not classified as buyout-, venture capital-, distressed-, or energy-focused.

WORLDWIDE PRIVATE EQUITY FUNDRAISING

By Region

At March 31, 2021

% of Amount Raised



SOURCE: Refinitiv and Pathway Research.

NOTES: Fundraising amounts are based on net amounts raised, which are adjusted for fund-size reductions.

Comprises buyouts, venture capital, distressed debt, energy, and other fund strategies.

Data is continuously updated and is therefore subject to change.



Summary

- The crisis has highlighted the durable nature of the private equity model and the asset class's ability to respond to market shocks, capitalize on opportunities, and generate attractive returns for investors.
- Investment activity continued to accelerate during 1Q21 following a marked slowdown in 1H20. GPs have continued to find attractive opportunities to deploy capital.
 - GPs remain cautious overall due to the high level of competition, ongoing market volatility, and uncertain economic outlook and are focused on investing in high-quality and resilient opportunities.
- Robust M&A and IPO exit markets are driving attractive performance and a high level of distribution activity across the private equity asset class overall.
- Distressed debt–related investment activity has been limited to date. Non-investment-grade credit markets have recovered strongly since 1Q20; however, many companies and industries remain vulnerable in the current market environment.
- The fundraising market is strong, but investors remain highly selective overall, which is positive for the asset class.
- The path of the global economic recovery remains uncertain, and the potential for further market volatility remains, presenting both challenges and opportunities for private equity firms.



Biographies



Douglas K. Le Bon
Senior Managing Director

Mr. Le Bon is a senior managing director and cofounder of Pathway whose private market experience dates back to 1979. Based in Pathway's California office, Mr. Le Bon is involved in all aspects of Pathway's investment and client-servicing activities. He is a member of various Pathway committees, including the firm's Management Committee, Investment Committee, and Co-investment Investment Subcommittee.

Before forming Pathway in 1991, Mr. Le Bon was a vice president and principal of Wilshire Associates Inc. and cofounder and head of Wilshire's Special Investments Division. This independent division of Wilshire focused exclusively on assisting institutions with investment in the private equity asset class. Prior to joining Wilshire in 1983, Mr. Le Bon was a valuation consultant with Houlihan, Lokey, Howard & Zukin Inc. beginning in 1979. Mr. Le Bon has served on the advisory boards and valuation committees of several private market partnerships. He received a BS in business administration and an MBA from California State University, Dominguez Hills.



Richard S. Mazer
Managing Director

Mr. Mazer joined Pathway in 1995 and is a managing director in the California office. He is responsible for investment analysis and conducting due diligence on primaries, secondaries, and co-investments; negotiating and reviewing investment vehicle documents; and client servicing. Mr. Mazer is a member of various Pathway committees, including the firm's Management Committee, Investment Committee, and Diversity & Inclusion Committee. Mr. Mazer also serves on the advisory boards of several private market partnerships.

Mr. Mazer received a BS in business administration, *magna cum laude*, with an emphasis in finance and marketing, from Chapman University and an MBA from the Anderson School at the University of California, Los Angeles.



Biographies (continued)



Jason C. Jenkins, CFA
Managing Director

Mr. Jenkins joined Pathway in 2004 and is a managing director in the California office. He is responsible for investment analysis and conducting due diligence on primaries and co-investments; negotiating and reviewing investment vehicle documents; and client servicing. Mr. Jenkins oversees Pathway's infrastructure program, which pursues global infrastructure and real asset investment opportunities. Additionally, Mr. Jenkins serves on the advisory boards of several private market partnerships.

Prior to joining Pathway, Mr. Jenkins worked at State Street IMS as a transitions associate. He received a BS in finance, *summa cum laude*, from Northern Arizona University and an MBA, with a concentration in finance, from the Orfalea College of Business at California Polytechnic University. Mr. Jenkins is a CFA charterholder and a member of the CFA Society of Los Angeles, Inc.



Notes to Pathway's Discretionary Performance Comparison

^aPathway's Private Equity Discretionary Composite ("Pathway's Composite") returns are dollar-weighted and presented net of fees, expenses, and profit participation of the underlying investment funds and net of Pathway's fees and expenses. Pathway's Composite includes all discretionary private equity investments in private equity portfolios managed by Pathway on behalf of its discretionary account clients and fund-of-funds investors.

^bBurgiss Global All PE FOFs benchmark is a composite of funds of funds in the Burgiss Private iQ global all private equity fund-of-funds universe, as of December 31, 2020, within the categories of (i) funds of funds investing in private equity funds generally on a primary and/or secondary basis, or participating in co-investments, or (ii) funds of funds investing in private equity funds generally on a primary basis only, as defined by Burgiss, and includes vintage years 1993–2020 and was calculated using Burgiss data available as of June 4, 2021. The Burgiss Global All PE FOFs benchmark is calculated by Burgiss as an annualized effective compounded rate of return using daily cash flows and annual/quarterly valuations sourced from limited partner transaction data of Burgiss clients, which were not independently verified by Pathway or Burgiss. The Burgiss Global All PE FOFs benchmark is presented net of fees, expenses, and the general partner's profit participation of the underlying investment funds. Pathway believes that the benchmark data, which, like the Pathway PE Net IRR, is net of the fees and expenses and profit participation of the underlying investment funds and net of advisers' fees and expenses for the funds of funds, may provide a useful comparison against the Pathway returns.

Notes to Pathway's Multi-investor Funds of Funds—Performance vs. Industry Peers

Past performance is not necessarily indicative of future results. There can be no assurance that Pathway or the general partner will achieve the performance results stated, and there is no guarantee against the loss of part or all of the investor's investment.

Returns are based on investment results that are not managed by Pathway. Valuations are computed as of the end of each quarter in U.S. dollars. Pathway's returns are based on daily cash flows and, in part, on valuations of unrealized investments provided by the underlying investment funds. Valuations are based on the information provided by the investment funds and are not independently verified by Pathway but are adjusted by Pathway at its discretion as it deems appropriate to take into account certain assumptions, inputs, and market conditions that it becomes aware of (e.g., where reported values are not stated at fair value). Pathway's compliance department monitors and approves any changes in the valuation process, and Pathway's accounting department has strict controls and reconciliation procedures for all client account valuations and is subject to annual audits of valuations of Pathway's funds of funds. The results shown include all amounts that are re-invested by the underlying investment funds and by Pathway's funds of funds. Because actual realized returns on unrealized investments will depend on various factors, the actual realized returns on unrealized investments may differ materially from the returns indicated. Additional information regarding Pathway's performance data and its valuation policies and procedures, is available upon request.

The "Pathway MIFOs" IRR, as further described below, comprises the performance of all multi-investor commingled funds of funds sponsored by Pathway (except as otherwise noted) investing in primaries and, if applicable, secondaries and co-investments, where each fund comprises commitments from two or more unaffiliated third-party investors. These funds are DAF Global, LLC; Pathway Private Equity Fund 2007, LP; Pathway Private Equity Fund 2008, LP; Pathway Private Equity Fund Investors 6, LP; Pathway Private Equity Fund Investors 7, LP; Pathway Private Equity Fund Investors 8, LP; and Pathway Private Equity Fund Investors 9, LP.

The measure excludes TPEF I and TPEF II (the "TPEF Funds"), which are multi-investor funds of funds that were raised for Japanese investors in collaboration with Tokio Marine Asset Management (TMAM). Pathway is primarily responsible for investing and constructing these funds, while TMAM is primarily responsible for providing certain advisory services, including investor relations and other administrative oversight services. As such, these funds were excluded because they are structured differently than Pathway's other multi-investor funds of funds, including having a higher fee structure. After deducting all fees and expenses charged by Pathway, TPEF I's and TPEF II's since-inception net IRRs are 6.7% and 12.1%, respectively, as of December 31, 2020. The since-inception net IRR as of December 31, 2020, for the Pathway MIFOs, including the TPEF Funds, is 13.2%. Additional fees and expenses charged by TMAM to the underlying investors of the TPEF Funds have not been deducted from the net IRRs.

The measure also excludes Pathway Private Equity Fund Investors 10, LP, because Pathway believes that it is too early in this fund's investment cycle for performance to be meaningful.



Notes to Pathway's Multi-investor Funds of Funds—Performance vs. Industry Peers (continued)

Finally, Pathway (i) sponsors other commingled funds, specifically single-investor funds of funds, each comprising commitments from at least one unaffiliated third-party investor, and (ii) manages separate accounts for individual third-party investors.

^aFor each Pathway fund of funds, the "Pathway MIFOF" IRR is the internal rate of return based on the dollar-weighted aggregated cash flows and quarter-end valuations of all the investments of each fund since the inception of each such fund, which is noted in parentheses under each fund depicted. The "Pathway MIFOF" IRR is based on daily cash flows from investments in investment funds and from co-investments made during the applicable periods and is presented net of fees, expenses, and the underlying general partner's profit participation of the underlying investment funds and

co-investment vehicles and further deducts Pathway's fund-of-funds management fees, fund-of-funds expenses, or other expenses attributed to any discretionary account client that such client has agreed upon with Pathway to pay with respect to such investments (the latter of which, the "Pathway Fees"). With respect to co-investments, the returns are based on investments made by Pathway's clients and funds of funds and therefore do not reflect fees for investments that were considered but not consummated (i.e., broken-deal fees). In general, the underlying investments included in each Pathway MIFOF IRR will be in varying stages of their investment life cycles during the period, given the different vintage years among the Pathway MIFOFs. Furthermore, the number of underlying investments included in each Pathway MIFOF IRR also varies.

Actual investment returns will be reduced by advisory fees, fund-of-funds management fees, fund-of-funds expenses, and other expenses under the final terms of a Pathway fund. Pathway's management/advisory fees, as well as its client/fund expense structures, vary from client to client based on, among other things, the structure of the client account or fund of funds, the services offered by Pathway, the size of the mandate, and the investment strategies deployed. Additional information about Pathway's advisory fees is available upon request and may be found in Part 2 of Pathway's Form ADV. The underlying investment funds and co-investment vehicles included in the information presented are in varying stages of their investment life cycles during the period (e.g., some may be recently formed funds, while others may be nearing the end of their term or in dissolution). Some of Pathway's fee structures apply different fee amounts in different years, and therefore the fees in the early years of a portfolio may be higher than the fees charged in later years. As a result of these varying fees and fee structures, the net IRRs depicted may be materially different from the actual investment results of Pathway's client/fund accounts that invested in these investments at any given time.

^b"Burgiss UQ FOF Benchmark," "Burgiss Median FOF Benchmark," and "Burgiss LQ FOF Benchmark" are a composite of funds of funds in the Burgiss Private iQ global all private equity funds of funds upper quartile, median, and lower quartile, respectively, as of December 31, 2020, within the asset class categories of generalist and market categories of (i) generalist and (ii) primary, as defined by Burgiss, and includes vintage years 2000, 2007, 2009, 2011, 2013, 2015, 2017, and 2020 (as compared against the respective vintage years of the Pathway MIFOFs depicted), and was calculated using Burgiss data available as of May 5, 2021. The number of investment funds included in the benchmarks fluctuates by vintage year. For instance, the 2000 vintage year benchmarks reflect the returns of 14 funds of funds, whereas the 2007 vintage year benchmarks reflect the returns of 28 funds of funds. The Burgiss UQ, Median, and LQ IRRs are calculated by Burgiss as an annualized effective compounded rate of return using daily cash flows and annual/quarterly valuations sourced from limited partner transaction data of Burgiss clients, which were not independently verified by Pathway or Burgiss. The Burgiss UQ, Median, and LQ IRR and TVPI data was calculated by Burgiss using daily cash flows and annual/quarterly valuations sourced from limited partner transaction data of Burgiss clients, which were not independently verified by Pathway or Burgiss. The Burgiss UQ, Median, and LQ IRRs and TVPIs are presented net of fees, expenses, and the general partner's profit participation of the underlying investment funds. Pathway's MIFOFs are diversified funds in terms of strategy, region, and investment type, which in Pathway's view most closely aligns with the Burgiss generalist and primary categories within the funds-of-funds benchmark. Pathway believes that the benchmark data, which, like the Pathway MIFOF IRR, is net of the fees and expenses and profit participation of the underlying investment funds and net of advisers' fees and expenses for the funds of funds, may provide a useful comparison against the Pathway returns. While the Burgiss returns are used as a general comparison with Pathway's returns, the comparison of such returns with any benchmark provides only one approach to the comparison of returns, and prospective investors should consider comparisons with other indices and benchmarks. Prospective investors should, however, be aware of the limitations of such comparisons, including the fact that the Pathway MIFOFs do not pursue only a primaries investment strategy.

^c"Pathway MIFOFs" TVPI, or total value to paid-in capital, is calculated by dividing (A) the sum of (i) the current market value of the remaining investments held by the Pathway fund of funds plus (ii) the total value of cumulative distributions from the Pathway fund of funds by (B) the aggregate amount of capital contributions paid by investors to the Pathway fund of funds (including contributions for management fees and expenses of the fund of funds).



Notes to Estimated Incremental Portfolio Gains from Direct Credit Investments Compared with Partnerships

Estimated figures are based on active commitments projections with a ramp in years 1 and 2 and reaching \$300 million in year 3. Estimated annual gain and estimated management fee savings were reduced by 60% in year 1, by 30% in year 2, and by 20% in year 3 to account for active commitment ramp. Annual carried interest savings is calculated as a net deal (i.e., portfolio's annual gain reduced by annual management fees). Represents the estimated incremental gains generated over the life of the private credit portfolio by making direct credit investments with no fee and no carried interest charged, as opposed to investing with a private credit limited partnership charging a 1.25% management fee and 15% carried interest that experiences the same stated return yields. Direct credit investments involve certain risks not present in a traditional private credit fund. No assurance can be made that a direct credit investment will achieve the gross returns shown. Because these figures are estimates, they are not representations that Pathway's clients or investors experienced the specific savings set forth herein.



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Without the prior written consent of Pathway Capital Management, LP (“Pathway” or the “Adviser”), this information may not (i) be used for any purpose other than evaluating your annual private equity commitments, or (ii) be modified, sold, or otherwise disclosed in whole or in part to any other person or entity. While the information contained herein has been obtained or derived from sources Pathway believes to be reliable, Pathway accepts no responsibility or liability (including for indirect, consequential, or incidental damages) for any error, omission, or inaccuracy of such information. The projections shown are provided for informational purposes only and should not be construed as investment advice or as providing any assurance or guarantee of the achievement of your targeted private equity exposure or of returns that may be realized in the future from your private equity commitments. Projections and expected returns are subject to high levels of uncertainty regarding future economic and market factors that may affect future performance and certain assumptions contained herein. Accordingly, such projections/expectations should be viewed as only one possible outcome out of a broad range of possible outcomes.

The information provided herein should not form a primary basis for any investment decision made by you or on your behalf, and neither Pathway nor any of its affiliates shall act as a fiduciary or adviser with respect to this matter.

There can be no assurance that the targets stated in this presentation can be achieved. Targets are objectives and should not be construed as providing any assurance or guarantee of the results that may be realized in the future from investments in any asset or asset class described herein.

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Each prospective investor should (i) make its own investigation and evaluation of the Adviser and the Adviser’s specific investment products, including the merits and risks thereof, (ii) inform itself as to the legal requirements applicable to the acquisition, holding, and disposition of an interest in any investment vehicle, and as to the legal and tax consequences of such acquisition, and (iii) have the financial ability and willingness to accept the high risk and lack of liquidity inherent in any such investment.

The statements contained herein that are not historical facts are forward-looking statements within the meaning of the Federal securities laws. The forward-looking statements are based on current expectations, beliefs, assumptions, estimates, and projections about the industry and markets in which the Adviser expects to operate. Words such as “expect,” “anticipate,” “intend,” “plan,” “believe,” “seek,” “estimate,” variations of such words, and similar expressions identify such forward-looking statements. Forward-looking statements contained herein, or other statements made for or on behalf of the Adviser either orally or in writing from time to time, are not guarantees of future performance and involve certain risks, uncertainties, and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in such forward-looking statements. These statements include, among other things, statements regarding the Adviser’s intent, belief, or expectations with respect to the type and quality of the investments the Adviser may recommend (the “Investments”); the target returns, IRR, and distributions to investors; performance of any hypothetical portfolios; and the Adviser’s investment strategy generally. All forward-looking statements are made as of the date of this presentation, and the Adviser is under no obligation, and does not intend, to update any forward-looking statements to reflect changes in the underlying assumptions or factors, new information, future events, or other changes.

No representation is being made that the Adviser will or is likely to achieve comparable performance results to that shown herein. Past performance is not necessarily indicative of future results. Although valuations of unrealized investments are made on assumptions that the Adviser believes to be reasonable under the circumstances, the actual realized return on unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs, and the timing and manner of sale, all of which may differ significantly from the assumptions on which the valuations used in the data contained herein are based. Accordingly, there can be no assurance that these valuations are accurate, and the actual realized return on these investments may differ materially from the returns indicated herein.

No representation is being made that a prospective investor will or is likely to have access to funds such as the funds referenced herein. The reference to such funds was made with the benefit of hindsight based on historical rates of return of such manager and on specific investments made by such funds. Accordingly, performance results of specified funds inevitably show positive rates of return or investment results.



Private Markets Program

Recommended Policy Changes

IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Presented to the IPERS Investment
Board**

By Pat Reinhardt, SIO - Alternatives

June 17, 2021



Recommended Policy Changes

Private Markets Investment Policy

- ✓ Replace component with portfolio throughout the document

Section I.D – Determination of Investment Commitment Amount

- ✓ Delete Section I.D.2.c and add to Exhibit B as Section II.A.3 under Investment Roles

Section II.D – Investment Policies

- ✓ Add language to Section II.D.1 to clarify Credit's focus on current income and inclusion of leasing strategies
- ✓ Add Section II.D.2 to allow for direct credit co-investments and secondary investments
- ✓ Change title of Section II.D.3 from Investment Size to Investment Limits
- ✓ Add Section II.D.3.b to clarify investment limits for direct credit co-investments within the Private Credit portfolio

Section III.D.1 – Investment Diversification

- ✓ Revise the minimum and maximum weights for the sub-categories within the Private Real Assets portfolio
- ✓ Increase the core real estate portfolios limits around property type and regional weightings from +/- 5% to +/- 10%

Exhibit A - Section II.A – Broaden Investment Sub-Category

- ✓ Rename Commercial Real Estate Credit to Real Assets Credit
- ✓ Expand sub-strategy to include all asset based lending strategies as well as leasing strategies

Exhibit A - Section II.C – Investment Sub-Category Clarification

- ✓ Add language clarifying that Opportunistic Credit can include both asset based and cash flow based lending strategies

Exhibit B - Section II.A – Expand Staff Role to include Bench Managers

- ✓ Add language to Section II.A.2 to clarify staff's role in maintaining and monitoring the Board approved bench manager list

APPENDIX - C -

PRIVATE MARKETS INVESTMENT POLICY

Pursuant to Iowa Code §97B, the Iowa Public Employees' Retirement System (IPERS) Investment Board (Board) establishes this Private Markets Investment Policy (Policy) that sets forth the long-term objectives and policies for private market investments. Allocations to the private markets program shall be determined through the asset allocation review process.

IPERS' private markets program consists of three ~~portfolios~~~~components~~: private equity, private credit, and private real assets. The ~~portfolios~~ serve complementary roles within the program and at the total fund level. The role of private equity is to provide excess returns over the public equity markets; private credit provides excess returns over the public credit markets, diversification, and income; while private real assets provide diversification, income, and an inflation hedge.

Commented [PR1]: Replace component with portfolio. Provides consistency on how we reference the underlying portfolios throughout the document.

Each ~~of the program's portfolios are~~~~component program is~~ described below. Also integral to this Policy is Exhibit A, a description of permitted investments for the program's three ~~portfolios~~~~components~~, and Exhibit B, the program's procedural policies.

I. PRIVATE EQUITY

A. Definition

Private equity is equity capital that is not quoted or traded on a public exchange. Private equity investments are generally investments in buyout, venture capital, or special situations funds, but may include some co-investment alongside these types of funds. Exhibit A provides a more detailed description of the types of permitted investments.

B. Investment Philosophy

Traditional public equity markets have become increasingly efficient. The private equity market, however, remains inefficient and illiquid partially because of privately negotiated, non-auction pricing mechanisms. Return premiums exist for investors who accept the illiquid and inefficient characteristics of the private equity market, and who are willing to take an opportunistic investment approach.

Because of the inefficiencies found in the private equity market, successful investment requires an active, targeted, and opportunistic approach. In an

inefficient market, passive investment in a broad array of market segments is likely to lead to underperformance. Therefore, IPERS will delegate investment selection to an experienced, qualified manager. The Manager will utilize a systematic approach to the identification of and participation in specific investments. The following screening criteria will be utilized by the Manager as a key element of the systematic approach to the identification of suitable venture capital and special equity investment opportunities for the System:

- Experience, qualifications, and responsibilities of the general partners
- Past investment results of the general partners
- Quality of the general partners' deal flow sources
- Demonstrated deal-exiting capability on the part of the general partners
- Special expertise of the general partner, unique deal flow source, or other competitive advantage
- Limit of liability by the pension fund to the amount of their investment (for example limited partnerships)
- General contribution of the opportunity to the diversification of the program

C. Return Objective

The long-term return objective is 300 basis points (3 percent) greater than the Wilshire 5000 Index, net of investment management fees, calculated on an internal rate of return (IRR) basis over rolling ten-year periods.

Performance on both the portfolio and the benchmark shall be calculated on an internal, or dollar-weighted, rate of return basis. In recognition of the fact that IRRs are not meaningful in the early years of a private equity investment's life, the IRR performance calculation for the benchmark may be adjusted so that contributions made in the most recent three years of the rolling ten-year period are assumed to earn 91-day U.S. Treasury Bill returns.

D. Investment Policies

1. Co-Investments and Secondaries

The Manager may utilize direct co-investments in companies alongside of IPERS' current general partners. For purposes of this Policy, a direct co-investment is defined as a direct investment in the equity of a portfolio company alongside an existing IPERS partnership deemed in good standing. A direct co-investment does not include a co-investment fund (a partnership organized with the goal of investing in multiple direct co-investments). In addition, the Manager may also participate in secondary offerings or

purchase private equity interests from other investors on the secondary market.

2. Investment Limits

- a. The maximum investment in any limited partnership, group trust, or limited-liability company vehicle shall not exceed 20 percent of the total capital committed by all partners at the time of the final closing for each fund, and shall not exceed \$80 million without the prior approval of the Board.
- b. The maximum investment in any single direct co-investment shall not exceed \$15 million. IPERS' total investment in direct co-investments shall not exceed 15 percent of the IPERS private equity portfolio on a cost basis at the time of investment.

~~The maximum investment commitment amount for a calendar year shall be annually determined by staff and communicated to the Manager in writing. The annual commitment amount decision will be based on current allocation, target allocation, expectations for future pace of drawdowns and distributions, expected market environment, etc. Staff will inform the Board of its annual commitment allocation decision and also of any subsequent adjustments that may occur based on market conditions or partnership fundraising schedules.~~

Commented [PR2]: Moved to Exhibit B as Section II.A.3 under Investment Roles. The commitment process is the same across all three portfolios of the Private Markets program.

II. Private Credit

A. Definition

Private credit is generally the investment in loans to companies, individuals and organizations for a variety of transactions including asset-based and cash flow-based financings, recapitalizations, and acquisition-related financings. Exhibit A provides a more detailed list of permitted private credit investments.

B. Investment Philosophy

Traditional public credit markets offer a relatively liquid market for issuers of debt securities and buyers of debt instruments. The private credit markets, where borrower and lender agree to terms via privately negotiated transactions, are by nature illiquid. Return premiums exist for investors who accept the illiquid and inefficient characteristics of the private credit market, and who are willing to take an opportunistic investment approach throughout the credit cycle.

C. Return Objective

The long-term return objective for IPERS' private credit program is to exceed the S&P/LSTA Leveraged Loan Index plus 1 percent, net of investment management fees, calculated on an internal rate of return basis over rolling five-year periods.

D. Investment Policies

1. Credit

IPERS may commit capital to partnerships or separate account vehicles for the purpose of investing in private credit or credit-like strategies with a primary focus on current income. IPERS will seek investment managers for private credit mandates that have expertise in underwriting credit and the operational resources required to adequately monitor and manage a large diversified loan or leasing portfolio.

Commented [PR3]: Provides further clarification around the credit portfolio's investment policies.

2. Direct Credit Co-Investments and Secondaries

Managers may utilize direct credit co-investments in companies alongside of IPERS' current private credit or private equity mandates. For purposes of this Policy, a direct credit co-investment is defined as either (i) a co-investment alongside of an existing IPERS' private credit mandate deemed in good standing or (ii) a debt financing investment sourced from an existing IPERS' private equity partnership deemed in good standing. In addition, the Managers may also participate in secondary offerings or purchase private credit interests from other investors on the secondary market.

Commented [PR4]: Expands the policy to allow for direct credit co-investments and secondary investments within the Private Credit portfolio

2.3. Investment Limits Size

a. The System's investment in any limited partnership, limited-liability company vehicle or other type of fund structure shall not exceed 20 percent of the total capital committed by all partners at the time of the final closing for each fund.

b. The maximum investment in any single direct credit co-investment shall not exceed \$15 million. IPERS' total investment in direct credit co-investments shall not exceed 15 percent of the IPERS private credit portfolio on a cost basis at the time of investment.

Commented [PR5]: Provide limits for direct credit co-investment activity. From a portfolio perspective, 15% max is appropriate whether Private Equity or Private Credit.

III. Private Real Assets

A. Definition

Private real assets are physical assets that have intrinsic value due to their substance or properties, and include investments in commercial real estate (real estate) and farmland, timber, and infrastructure (other real assets).

B. Investment Philosophy

The primary role of the private real assets program is to provide diversification through low correlation with other portfolio asset classes; the secondary role is to provide income; and the third role is to provide inflation protection.

C. Return Objectives

1. Private Real Assets Program

The long-term return objective for IPERS' private real assets program is to exceed CPI-U (NSA) by 500 basis points (CPI + 5 percent), net of investment management fees, calculated on a time-weighted basis over rolling ten-year periods.

2. Program Investments

The return objective for the real estate portion of the program is to exceed the National Council of Real Estate Investment Fiduciaries' Open-End Diversified Core Index (ODCE), net of investment management fees, calculated on a time-weighted basis over rolling ten-year periods. Portfolio level returns will be utilized in the evaluation of manager performance.

The return objective for the other real assets portion of the program is to exceed CPI + 5 percent, net of investment management fees, calculated on a time-weighted basis over rolling ten-year periods.

D. Investment Policies

1. Investment Diversification

Real estate investments will constitute at least ~~50~~70 percent of the private real asset investment value; other real assets will not exceed ~~50~~30 percent of the private real assets investment value. The ~~50~~70 percent minimum and ~~50~~30 percent maximum above shall be applied to the sum of the private real asset portfolio's current investments at net asset value plus unfunded commitments.

Real estate investments shall be diversified such that core real estate constitutes at least 80 percent of the real estate portfolio and non-core and market driven opportunity investments (as those terms are defined in Exhibit A) shall not exceed 20 percent of the real estate portfolio.

Staff will strive to ensure that IPERS' core real estate portfolio has property type and regional weightings that are within +/- ~~10~~5 percent of the weightings reported by NCREIF for the ODCE Index.

IPERS will diversify its real estate investment manager structure such that no manager will manage more than 35 percent of the real estate program assets.

Commented [PR6]: This change provides increased capacity for other real assets, in particular, infrastructure.

Commented [PR7]: This increase in ranges around ODCE allow for more active management of the core portfolio, while maintaining the core nature of the portfolio.

Timberland investments will be diversified by region, land class (raw land, pre-merchantable timber, and merchantable timber), timber type, and age-class.

Farmland investments will be diversified geographically throughout the United States and by crop type. The three primary categories of crops that shall be included are commodity crops (corn, soybeans, wheat, cotton, etc.), vegetable crops (lettuce, green vegetables, etc.), and permanent crops (fruits, nuts, grapes, citrus, etc.).

Infrastructure investments shall be diversified geographically and across the transportation, energy, and utility sectors.

2. Investment Limits

The maximum investment or co-investment in any single real estate or other real assets investment is 0.5 percent of IPERS' total Fund market value at the time of the commitment. IPERS shall not hold more than a 20 percent interest in any commingled fund vehicle.

3. Leverage

Leverage on real estate investments is limited to 40 percent at the manager portfolio level, 50 percent at the property level for core investments, and 60 percent at the property level for non-core investments. These limits shall apply at the time of acquisition or the placement of debt. Changing market conditions or circumstances beyond IPERS' control that occur after acquisition or placement of debt may cause these limitations to be exceeded temporarily.

Given their stable cash flow and low variability of revenue, infrastructure assets can support more debt. For this reason, infrastructure investments may utilize up to 65 percent debt at the fund level and will be expected to use no more than 80 percent on any given asset. These limits will be reviewed on a case by case basis and determination of the debt level will be dependent on the investment type and risk characteristics of the investment.

Farmland and timberland investments shall not utilize leverage.

EXHIBIT A
INVESTMENT DESCRIPTIONS

Permitted investments for each ~~portfolio component~~ of the private markets investment program are described below:

I. PRIVATE EQUITY

A. U.S. and non-U.S. venture capital investments

1. Early venture – Focuses on initial financing of start-up and early-stage companies. Companies at this stage often do not have fully formed management teams or completely defined products, and usually do not have sales or earnings.
2. Growth venture – Aims to provide expansion capital to mid- and late-stage companies that are increasing capacity and expanding market share.
3. Established growth venture – Focuses on investments in mature companies which are well-established in the market, operating profitably or at cash flow break-even, and growing at an above-industry growth rate. Investment is made due to an opportunity for further expansion.

B. U.S. and non-U.S. special equity investments

1. Corporate finance – Includes leverage buy-out, management buy-out, and influence-block investment strategies.
2. Recovery securities – Includes equity and debt instruments of companies involved in turnaround, restructuring, deleveraging, or bankruptcy situations.
3. Mezzanine securities – Placed between debt and equity in a company's capital structure, mezzanine securities are typically subordinated debt instruments for late-stage venture and mature companies, and offer income through a current coupon and equity participation through a warrant.
4. Other investments – Includes those investments not defined above. This category is designed to capture those innovative investment opportunities created by the marketplace that do not fit an existing category. The Manager may not invest in investments that would fall within this subcategory without specific approval from the staff.

II. PRIVATE CREDIT

A. ~~Real Assets~~ Commercial Real Estate Credit

~~Any A-mortgage~~ loan secured by a lien on the borrower's collateral. ~~These loans will be predominately made in~~ commercial real estate, which includes any income-producing real estate that is used solely for business purposes, such as retail centers, office complexes, hotels and apartments. Other examples of potential loans that may be made within real assets credit would include infrastructure, energy, trade finance and transportation loans. Real Assets Credit may also include strategies focused on leasing including transportation or other assets. These strategies will resemble credit-like return profiles, focused primarily on current income, and are reliant on third-party credit for the lease of the assets.

Commented [PR8]: Expands this sub-category to include all real asset lending including leasing strategies. These asset based strategies are unique and distinct from cash flow based lending.

B. Middle Market Direct Lending

Primarily first lien senior secured floating-rate loans to middle market companies. These loans are typically made for the purposes of leveraged buyouts, recapitalizations, acquisitions, and funding of growth strategies by investors and/or businesses.

C. Opportunistic Credit

Investments in closed-end funds or separately managed accounts that invest in specific types of credit or lending strategies, or opportunistically invest across multiple types of credit and lending strategies. Opportunistic credit may encompass asset-based lending and/or cash-flow lending strategies.

Commented [PR9]: Clarification that this sub-category can invest in both asset based and cash flow based strategies.

III. PRIVATE REAL ASSETS

A. Real Estate

1. Core real estate investments are commercial properties located in the United States which derive their value primarily from current income production, and therefore represent lower-risk profiles than non-core properties. It is anticipated that core investments will generate at least 70 percent of their total returns from income. Core investments are stabilized, substantially leased properties in the four major property types:

a. Office: Central business district or suburban.

- b. Retail: Neighborhood centers, community centers, regional/super-regional centers (malls), specialty centers, power centers, and single tenant properties.
 - c. Industrial: Flex space, research and development facilities, warehouse, and other (manufacturing and office showroom).
 - d. Apartments: High-rise, low-rise, and garden-type apartments.
2. Non-core real estate investments are commercial properties located in the United States that represent a higher-risk profile than core properties. It is anticipated that non-core investments will generate at least 50 percent of their total return from income over the underwriting period. These investments include the following:
- a. Properties which are acquired primarily for high appreciation potential, and are expected to derive their value primarily from appreciation returns.
 - b. Properties which would be core except for an identifiable and correctable deficiency such as the need for lease-up, renovation, or conversion of an existing property, or the need for development adjacent to an existing owned property.
3. Market driven opportunities are tactical investments in commercial properties located in the United States that have been approved by IPERS staff due to the perceived opportunity for IPERS to earn a higher risk-adjusted return than what can be provided by core private real estate investments. These investments include the following:
- a. Specialty property types including, but not limited to: hotel, self-storage, senior living, and raw land.
 - b. Development of assets (build to core) on a very selective basis. IPERS will not assume construction risk but may assume lease-up risk.
4. The private real estate investment program shall not include special-purpose facilities such as casinos and factories, which generally carry unacceptable business risks.

B. Other Real Assets

- |
1. Farmland investments are equity ownership in commercial agricultural properties. IPERS will seek to build a farmland portfolio that is well-diversified geographically throughout the United States and by crop type. The three primary categories of crops that shall be included are commodity crops (corn, soybeans, wheat, cotton, etc.), vegetable crops (lettuce, green vegetables, etc.), and permanent crops (fruits, nuts, grapes, citrus, etc.).
 2. The timberland portion of private real assets may be invested in three primary regions across the United States: Pacific Northwest, Southeast, and Northeast. In addition, this portion of the program will be diversified by land class (raw land, pre-merchantable timber, and merchantable timber), timber type, and age-class.
 3. IPERS may invest in partnerships or funds that invest predominantly in stabilized, income producing infrastructure assets (aka brownfield infrastructure), which may include transportation (toll roads, bridges, tunnels, sea ports, airports, etc.) and energy and utility (gas, electricity, water, etc.) infrastructure assets.
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EXHIBIT B
PROCEDURAL POLICIES

I. DUE DILIGENCE

Due diligence shall be performed through the selection, evaluation, acquisition, monitoring, and disposition stages of the investment process. Thorough due diligence shall be accomplished by the following means:

- A. Establishing and adhering to investment evaluation criteria which shall identify key sources of risk to be monitored during the life of each investment.
- B. Reviewing the track record of the manager; evaluating the risk of loss and the potential for gain of each investment; evaluating the suitability of the financial structure; and evaluating costs, time horizon, and the manager's exit strategy.
- C. Negotiating and structuring fundamental rights and protections with each manager which shall permit remedial action when necessary. These basic rights and protections shall include where appropriate distribution covenants and specific "exit" or voting rights in the event of a change of control or material adverse change.
- D. Seeking special reporting covenants to apply throughout the life of the investment.
- E. Reviewing each investment at least annually to determine whether retaining the investment is warranted on a risk-adjusted basis within the context of IPERS' total portfolio and relative to the investment objectives established for that particular investment.
- F. Maintaining an investment Watch List. It is expected that over time some investments shall experience difficulty due to economic or market-specific factors. IPERS staff and consultant shall maintain the Watch List, which will set forth the key issues to monitor and action plans to improve investment results.
- G. Specifying the valuation methodology for the life of the investment. The timing of valuations shall vary across the portfolio. IPERS preference is to have independent third-party appraisers utilized by the manager for determining value. IPERS shall reserve the right to engage its own appraiser to value the investments, and may adopt and maintain its own valuation accounting conventions.

- H. Controlling investment risks by limiting the potential of any one investment to negatively impact long-term results, IPERS and its Manager will diversify the portfolio in the following areas: manager/general partner, vintage year, geographic and economic region, industry, and investment type.
- I. Ensuring that no investment is made or held without a qualified manager or independent fiduciary under contract to provide the appropriate investment monitoring and guidance.

II. INVESTMENT POLICIES

A. Investment Roles

1. The Board shall approve the Private Markets Investment Policy (Policy) and the ~~portfolio component~~ Investment Plans (Plans); retain qualified managers; and review at least annually the performance of the private markets portfolios.
2. The staff shall recommend to the Board the Policy and the Plans; recommend the hiring of specific managers; maintain and monitor a Board approved bench manager list for potential future investments; approve investment allocations to specific managers and investment opportunities; monitor, communicate, and meet with managers; monitor and evaluate investment performance; negotiate business terms and compensation packages; develop implementation plans; coordinate the receipt and distribution of capital between the managers with respect to investments and dispositions; and serve on any advisory boards or committees associated with the approved investments.
3. The staff shall determine the annual maximum investment commitment amount and communicate such amounts to the Manager(s) in writing. The annual commitment amount decision will be based on portfolio diversification, current allocation, target allocation, expectations for future pace of drawdowns and distributions, expected market environment, etc. Staff will inform the Board of its annual commitment allocation decision and also of any subsequent adjustments that may occur based on market conditions or fundraising schedules.
- 2.4. The Managers shall acquire, manage, and dispose of private market investments on behalf of IPERS in accordance with the Policy, the Plans, and the terms of the investment agreement executed between IPERS and the

Commented [PR10]: Clarification of staff's role to maintain and monitor a bench manager list.

Manager, or any applicable investment vehicle's governing documentation. They shall also communicate key issues and overall performance to the Board, staff, and consultant.

For fund-of-fund or fund-of-one investments, the Manager shall actively negotiate partnership agreements on behalf of IPERS or the fund's investors. The foremost duty of the Manager in negotiating partnership agreements shall be to ensure that the interests of the general partner are aligned with the interests of IPERS and the other limited partners. The Manager shall negotiate terms that adequately compensate the general partner for its efforts, while ensuring that the partnership is structured so that IPERS is treated fairly and is adequately compensated for the risk taken by investing in the partnership.

~~3.5~~ The consultant shall monitor the private markets program for compliance with the Policy and the Plans, and shall recommend revisions to the Policy, the Plans, the manager roster, and the investments. The consultant shall further be responsible for identifying investment opportunities and participating with staff in conducting manager searches and negotiating business terms and performance compensation packages. Technical advice and support also shall be provided. Finally, the consultant shall provide performance measurement analysis. The Board and staff shall expand or contract these responsibilities as needed.

B. Evaluation and Review of Policy

The Policy shall be reviewed, by the staff and consultant no less than annually. Any proposed Policy revisions shall be submitted for approval to the Board.

C. Investment Vehicles

IPERS recognizes that private market investments are illiquid in nature. Vehicles that maximize investor control are preferred. IPERS may utilize the following investment vehicles within the private markets program: individually managed account vehicle, private limited partnerships, limited liability companies, and other types of commingled fund structures. In addition, IPERS may act to establish and maintain title holding entities for the purpose of taking title to and holding its investments and/or assets.

D. Private Market Investment Plans

The Plans for each ~~portfolio component~~ of the private markets investment program are established to identify and communicate the investment goals and

needs of the program's ~~portfolio~~ ~~components~~ for each calendar year. The particular needs for each Plan will be established in light of the structure, objectives, and performance of the existing program, as well as current market opportunities. The Plans will be reviewed and revised annually.

Opportunistic Private Credit Search

IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Presented to the IPERS
Investment Board**

By Pat Reinhardt, SIO - Alternatives

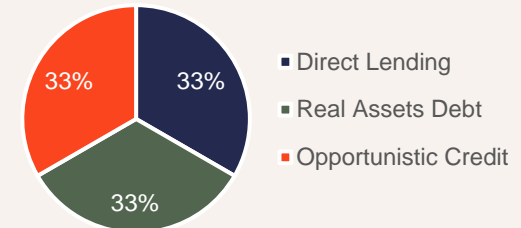
June 17, 2021



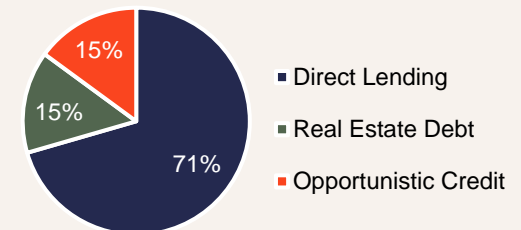
IPERS Private Credit Portfolio

- The Investment Board increased the Private Credit target allocation from 3% to 8% in September 2020.
- IPERS is targeting approximate equal weights to Direct Lending, Real Assets Credit and Opportunistic Credit strategies.
- The current Private Credit Portfolio is largely composed of Direct Lending strategies.
- IPERS is completing its Opportunistic Credit search and anticipates launching search for Real Assets Credit in 2H2021 (will include real estate debt, infrastructure debt, and other types of real asset credit strategies).
- In addition to the Opportunistic Credit search, IPERS plans to invest an additional \$100 million to its existing opportunistic private credit SMA managed by KKR.
- In the Opportunistic Credit search, “Other” strategy submissions were reviewed at a preliminary level; however, IPERS elected to not pursue these private placement strategies based on returns.

Target Allocation



Current Allocation¹



¹ Based on market values and approved commitments to Opportunistic Credit as of March 31, 2021.

IPERS Opportunistic Private Credit Search

- A total of 112 respondents submitted responses to the RFP.
- 80 respondents met minimum requirements (“MRs”), which were
 - Registered investment adviser under the Investment Advisers Act of 1940;
 - At least 5 years of experience managing the proposed product as of June 30, 2020;
 - At least \$250 million in AUM by the proposed product as of June 30, 2020.
- In the first iteration, Multi-Strategy and Mezzanine submissions were evaluated and the remainder of submissions (Specialty Finance, Real Assets, Other, and Special Situations) were evaluated in the second iteration.
- A total of nine opportunities were recommended for investment across all manager submissions.

RFP Process					
	Total Respondents	Met MRs	Semi-Finalists	Finalists	Recommended Allocations
Multi-Strategy	36	28	8	4	2
Mezzanine	17	13	NA	3	2
Specialty Finance	24	15	NA	4	2
Real Assets	13	8	NA	2	2
Special Situations	17	13	NA	1	1
Other	5	3	NA	NA	NA
Total	112	80	8	14	9

Specialty Finance Submissions

- Of 24 submissions in the specialty finance group, 15 managers met minimum requirements.
- In the first round of evaluations, 15 managers were assessed and scored across the following six dimensions: Organization (10%), Product Team (20%), Product (25%), Process (25%), Performance (10%) and Terms (10%).
- Four managers were selected for virtual on-sites and interviewed by IPERS Staff and Wilshire.
- Two managers – ArrowMark and CapitalSpring – are being formally recommended to the IPERS Investment Board. Please see Investment Summaries in Appendix.
- One manager – ASI Hark – is suggested to be reserved as a bench manager. Please see Investment Summary in Appendix.

Evaluation of Specialty Finance Submissions



Special Situations Submissions

- Of 17 submissions in the special situations group, 13 managers met minimum requirements.
- In the first round of evaluations, 13 managers were assessed and scored across the following six dimensions: Organization (10%), Product Team (20%), Product (25%), Process (25%), Performance (10%) and Terms (10%).
- One manager was selected for a virtual on-site and interviewed by IPERS Staff and Wilshire.
- One manager – Kartesia – is being formally recommended to the IPERS Investment Board. Please see Investment Summary in Appendix.



Real Assets Submissions

- Of 13 submissions in the real assets group, 8 managers met minimum requirements.
- In the first round of evaluations, 8 managers were assessed and scored across the following six dimensions: Organization (10%), Product Team (20%), Product (25%), Process (25%), Performance (10%) and Terms (10%).
- Two managers were selected for virtual on-sites and interviewed by IPERS Staff and Wilshire.
- Two managers – ITE Management and HPS Investment Partners – are being formally recommended to the IPERS Investment Board. Please see Investment Summaries in Appendix.

Evaluation of Real Assets Submissions



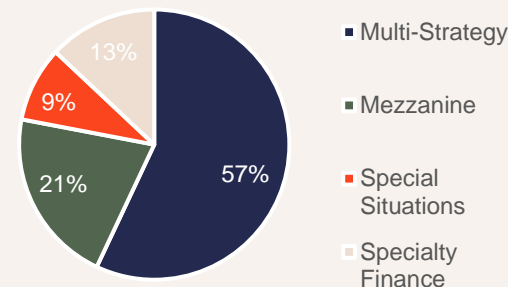
Hiring Recommendations

Staff requests the Investment Board approve the following recommendations:

- Hire Kartesia for a \$100 million allocation to special situations credit, subject to final due diligence and successful contract negotiations.
- Hire ArrowMark and CapitalSpring for \$100 million and \$50 million allocations, respectively, in specialty finance credit mandates, subject to final due diligence and successful contract negotiations; with ASI Hark serving as a bench manager for potential future funding if authorized by the Board at some future date.
- Hire ITE Management and HPS Investment Partners, each for \$100 million allocations in real assets credit mandates, subject to final due diligence and successful contract negotiations.

Opportunistic Private Credit – Potential Portfolio Construction

	Target Position (\$M)	Allocation (%)	Allocation Range	
			Low %	High %
Multi-Strategy				
Crestline Investors	\$250	21%		
Marathon Asset Mgmt.	\$250	21%		
KKR Goldfinch	\$175	15%		
Sub-total	\$675	57%	50%	60%
Mezzanine				
Audax Mezz V	\$100	9%		
Audax V Co-Invest	\$25	2%		
Ares Management	\$100	9%		
Ares PCS II Co-Invest	\$25	2%		
Sub-total	\$250	21%	0%	30%
Special Situations				
Kartesia	\$100	9%		
Sub-total	\$100	9%		
Specialty Finance				
Arrowmark	\$100	9%		
CapitalSpring	\$50	4%		
Sub-total	\$150	13%	0%	20%
Total Opportunistic Credit Portfolio	\$1,175	100%		



- Core allocation to multi-strategy managers allows for significant diversification across opportunistic private credit investments, while providing an attractive risk adjusted return profile.
- The market environment for mezzanine investments has the potential to be favorable as a new credit cycle begins following the Covid-19 dislocation.
- Special situations and specialty finance are complementary to the multi-strategy and mezzanine managers added to the portfolio during the first segment of the search process and will help to further diversify and enhance return potential of the private credit program.

IPERS Private Credit Proposed Structure

	Target Position (\$M)	Private Credit (%)	Total Fund (%)	Status
Multi-Strategy				
<i>KKR Goldfinch¹</i>	\$175	5.3%	0.4%	Investing
<i>Crestline Investors</i>	\$250	7.5%	0.6%	Contracting
<i>Marathon Asset Mgmt.</i>	\$250	7.5%	0.6%	Contracting
Sub-total	\$675	20.3%	1.6%	
Mezzanine				
<i>Audax Mezzanine Fund V</i>	\$100	3.0%	0.2%	Investing
<i>Audax V Co-Investment Fund</i>	\$25	0.8%	0.1%	Contracting
<i>Ares Private Credit Solutions II</i>	\$100	3.0%	0.2%	Contracting
<i>Ares PCS II Co-Investment Fund</i>	\$25	0.8%	0.1%	Contracting
Sub-total	\$250	7.5%	0.6%	
Special Situations				
<i>Kartesia</i>	\$100	3.0%	0.2%	Recommended
Sub-total	\$100	3.0%	0.2%	
Specialty Finance				
<i>CapitalSpring</i>	\$50	1.5%	0.1%	Recommended
<i>ArrowMark</i>	\$100	3.0%	0.2%	Recommended
Sub-total	\$150	4.5%	0.3%	
Total Opportunistic Private Credit	\$1,175	35.3%	2.8%	
Direct Lending				
<i>Monroe Capital Management</i>	\$527	15.8%	1.3%	Investing
<i>BlackRock / TCP VIII</i>	\$400	12.0%	1.0%	Investing
<i>KKR Goldfinch¹</i>	\$175	5.2%	0.4%	Investing
Sub-total	\$1,102	33.1%	2.7%	
Real Assets / Other				
<i>PGIM Global Real Estate Debt</i>	\$250	7.5%	0.6%	Investing
<i>ITE Management</i>	\$100	3.0%	0.2%	Recommended
<i>HPS Investment Partners</i>	\$100	3.0%	0.2%	Recommended
<i>Open (multiple mandates expected)</i>	\$600	18.0%	1.4%	Search Pending
Sub-total	\$1,050	31.6%	2.5%	
Total Portfolio	\$3,327	100%	8.0%	

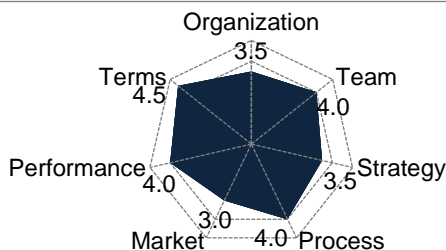
Appendix

Wilshire Investment Summaries – Recommended Allocations

ArrowMark Global Opportunity Fund SMA

Key Highlights

Currency / Target Size (B) / Hard Cap (B)	USD / 100 / NA
First Close Amount (B)	N/A
First Close Date	TBD
Final Close Date	TBD
Geographic Focus	Global
Strategy	Opportunistic Credit
Industry	Generalist
Investment Size (M)	\$5-\$100
Number of Investments	TBD
Investment Period	TBD
Fund Term	5 Years from end of investment period
Target Return	Low- to Mid- Double-Digit IRR
Management Fee* - Investment Period	Class A: 0.0% Class B: 0.5%
Management Fee* - Post-Investment Period	Class A: 0.0% Class B: 0.5%
Carry/ Hurdle	Class A: 15% Class B: 10%



Past performance is not indicative of future results.

FIRM OVERVIEW

ArrowMark Colorado Holdings ("ArrowMark" or the "Firm") is a 100% employee-owned, multi-asset investment management firm with a global focus and headquarters in Denver, Colorado. The Firm manages alternative, traditional, and customized investment strategies across in both public and private vehicles. Currently, ArrowMark maintains \$22.2 billion in assets under management ("AUM") across (i) credit and multi-asset, (ii) CLO, and (iii) equity strategies. The Firm was founded by David Corkins and Karen Reidy in 2007 and employs 77 employees today, including 45 tenured investment professionals.

INVESTMENT STRATEGY

The ArrowMark Global Opportunity Fund SMA (the "SMA" or the "Vehicle") will seek to invest in regulatory capital relief securities issued by global financial institutions with collateral comprised primarily of portfolios of term loans and revolving lines of credit from large corporate borrowers (40-75% of the SMA) and selectively of small/medium enterprise ("SME") term loans (15-30%), short-term trade finance (0-10%), and other types of collateral held on balance sheets (0-25%). ArrowMark will target transactions through both primary markets and secondary transactions where the Firm is able to acquire assets at attractive discounts. Transactions may be structured as bilateral, club, or large syndicated deals with other participants. New issues are expected to be floating rate securities with tenors of approximately three to five years and collateral that is investment grade or near investment grade in nature. The Firm underwrites securities to low- to mid- double-digit yields with quarterly coupons and distributions to investors. The SMA may utilize repo leverage of up to 75% of net asset value on individual deals to enhance returns; however, the amount of leverage utilized by the Vehicle will ultimately be determined by the investor.

TRACK RECORD

ArrowMark's track record of investing in regulatory capital relief transactions dates back to 2010 with approximately \$1.7 billion in invested capital across 75 distinct transactions. The Firm instituted their first investment vehicle within this strategy in 2014. In aggregate, the Firm has generated a gross IRR of 12.7% on all regulatory capital relief investments.

Fund	Year	Size (\$M)	Net ROI	Net IRR
Fund III	2019	482	1.1x	4.9%
Fund II	2016	152	1.4x	9.8%
Fund I	2014	152	1.3x	8.8%

Source: ArrowMark as of March 31, 2021.

Investment Merits

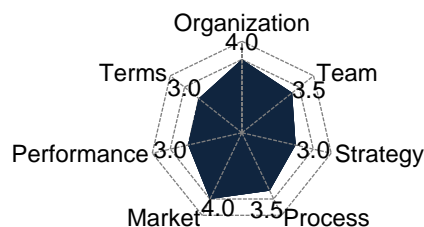
- Cohesive investment team with established history supported by a deep research platform
- Diversified credit strategy offering attractive downside protection through a focus on high quality collateral
- Consistent, stable performance with quarterly income

Investment Concerns

- Large, multi-strategy firm that continues to grow AUM
- Use of leverage to generate low- to mid-teens net return targets
- Increased competition and issuance in regulatory capital relief, which has led to compressed yields

Kartesia Credit Opportunities V

Key Highlights				
Currency / Current Size (B) / Hard Cap (B)	EUR	/	€1.2	/ €1.5
First Close Amount	NA			
First Close Date	NA			
Final Close Date	NA			
Geographic Focus	Europe			
Sector	Opportunistic Credit			
Industry	Corporate Credit			
Investment Size (M)	€25-30 million			
Number of Investments	35 - 45			
Commitment Period	3 years; two 1-year extensions			
Fund Term	8 years; two 1-year extensions			
GP Commitment (%)	TBD			
Target Return	15% Gross IRR; 1.6x gross ROI			
	Committed capital based on commitment size:			
Management Fee – Investment Period	€0-50mm: 1.50% €50-100mm: 1.35% €100-150mm: 1.25% €150-200mm: 1.15%			
Management Fee – Post-Investment Period	Invested capital based on above fee breaks			
Carry	20%			
Catch Up (%) / Hurdle	100% / 6%			



Key: 5 = Top Decile; 4 = Top Quartile; 3 = Average; 2 = Bottom Half; 1 = Bottom Decile; 0 = No Information

Past performance is not indicative of future results.

FIRM OVERVIEW

Kartesia Management ("Kartesia" or the "Firm") is a European private credit firm pursuing corporate credit opportunities in the lower mid-market in Europe and is headquartered in Luxembourg, with other offices in the United Kingdom, Belgium, Spain, France and Germany. In 2008, the Altercap Platform was created by Laurent Bouvier, Matthieu Delamaire and Jaime Prieto, with the support of LBO France Gestion. In 2013, the Altercap Team became independent of LBO France and created Kartesia. Currently, the Firm employs 56 experienced professionals across 7 European offices, with an average of 23 years of experience in European private credit.

INVESTMENT STRATEGY

Kartesia Credit Opportunities V ("Fund V" or the "Fund") intends to build upon the strategy employed by KCO III and KCO IV, and the prior Altercap Funds. The Fund will target corporate credit opportunities in the lower mid-market across established markets in Europe. Fund V intends to invest by providing or acquiring senior loans, mezzanine loans, subordinated instruments, and to a lesser extent, minority equity/equity-like instruments to, or to be held against, European companies or securitized investment vehicles. The focus will be on credit worthy, performing companies sourced via the secondary and primary markets. Through a combination of secondary and primary investments in leveraged loans, Kartesia is able to deliver value through capital gains, PIK interest, cash interest and equity and fees. In all of its investments, Kartesia intends to apply a consistent approach in structuring an asymmetric risk/return profile while focusing on downside protection and disciplined credit analysis. The Fund intends to build a portfolio of approximately 35 to 45 quality assets representing an average exposure of approximately €25 to 35 million per investment.

TRACK RECORD

Kartesia has invested approximately €2.7 billion in capital across 145 investments dating back to 2013. The Firm instituted their first investment vehicle, separate from the Altercap Platform, in 2015. In aggregate, the Firm has generated a realized gross IRR of 16.4% and gross ROI of 1.4x, through 86 exits since inception.

Fund	Vintage	Size (€M)	Gross ROI	Gross IRR
KSO I	2021	636	1.0x	10.8%
KCO IV	2017	870	1.3x	18.6%
KCO III	2015	508	1.8x	16.7%

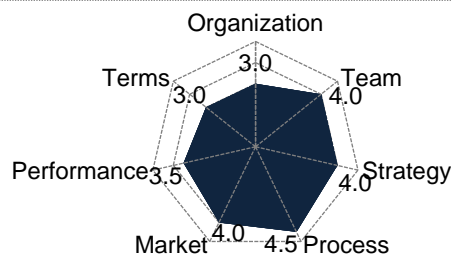
Source: Kartesia as of December 31, 2020

Investment Merits	Investment Concerns
<ul style="list-style-type: none"> Strong, tenured senior team with skillsets across credit landscape, including origination, structuring, execution, and turnaround/workouts Flexible investment strategy with ability to work across capital structure Strong risk-adjusted return profile with high focus on capital preservation and potential for outsized returns 	<ul style="list-style-type: none"> Substantial increase in fund size from predecessor vehicles Recent inclusion of third-party ownership at management company level Multiple strategies focused across credit spectrum

CapitalSpring Investment Partners VI

Key Highlights

Currency / Target Size (B) / Hard Cap (B)	USD / 750 / 1,200
First Close Amount (B)	~\$200
First Close Date	December 2019
Final Close Date	September 2021
Geographic Focus	North America
Sector	Opportunistic Credit
Sector Type	Restaurants
Investment Size (M)	\$10-\$100
Number of Investments	20-40
Investment Period	4 Years
Fund Term	7 Years
GP Commitment (%)	0.2% of commitments plus 2% co-investment in each deal
Target Return	14%-20% gross IRR
Management Fee – Investment Period	0.5% on unfunded commitments plus 1.5% on invested capital
Management Fee – Post-Investment Period	1.5% on invested capital
Carry/Hurdle	20% / 7%



FIRM OVERVIEW

CapitalSpring (the "Firm") was founded in 2005 and today is one of the most active institutional lenders focused on the franchised restaurant sector in the U.S. The Firm employs 27 individuals, including 18 investment professionals with restaurant and franchise-specific expertise in the areas of credit, private equity, law, brand management and structuring. The investment team is complemented by two dedicated in-house operations professionals, two origination professionals and a 12-person support team. CapitalSpring has offices in New York City, Nashville, Los Angeles and Atlanta.

INVESTMENT STRATEGY

CapitalSpring Investment Partners VI ("Fund VI" or the "Fund") will continue the Firm's flagship strategy of providing senior secured debt, mezzanine capital, and opportunistic equity to franchised and branded restaurants with an emphasis on the Quick Service Restaurant ("QSR") and Fast Casual Restaurant ("FCR") segments. Franchised restaurant businesses are generally characterized by simple, formulaic, and proven business models operating under established and recognized brands. Consequently, the pattern recognition resulting from the Firm's extensive experience in this space enables a repeatable, datadriven approach to analyzing and investing in target businesses with an accuracy and efficiency lacking in generalist firms that consider the franchise sector. The Fund will target a compelling niche within a restaurant sector that is growing, benefits from demographic tailwinds, and has proven remarkably resilient across macroeconomic cycles. Despite these favorable characteristics, however, franchise restaurants remain underbanked and generally out of favor with many investors. By focusing on a sector where capital is scarce, CapitalSpring will benefit from a fundamentally less efficient market which should accrue to the risk-adjusted return potential of the Fund. Fund VI is targeting an unlevered gross IRR of 14% – 20% with an annualized cash yield of 10% – 12%.

TRACK RECORD

CapitalSpring has invested approximately \$1.9 billion in its flagship strategy since 2010 across more than 270 investments in over 65 restaurant brands. As of December 31, 2020, the Firm's flagship strategy has generated an aggregate gross ROI of 1.3x.

Fund	Vintage	Size (\$M)	Net ROI	Net IRR
Fund V	2016	\$725	1.2X	10%
Fund IV	2013	\$256	1.3x	9%
Fund III	2009	\$65	1.3x	8%

Source: CapitalSpring as of December 31, 2020.

Investment Merits

- Specialized and resilient strategy focused on a niche, fundamentally less efficient market
- Repeatable results vis-à-vis focus on businesses with simple, formulaic, and proven business models
- Large team with extensive, relevant industry experience including operating insight unusual for a credit strategy

Investment Concerns

- Non-traditional ownership structure and meaningful leverage on Firm's balance sheet
- Team alignment given third-party ownership
- Fund V portfolio construction and equity exposure

ITE Rail Fund

Key Highlights				
Currency / Current Size (B) / Hard Cap (B)	USD	/	\$1.4	/ NA
First Close Amount	NA			
First Close Date	October 2014			
Final Close Date	NA			
Geographic Focus	North America & Europe			
Sector	Real Assets Credit			
Industry	Rail			
Investment Size (M)	Various			
Number of Investments	Currently 35,000 railcars			
Commitment Period	2 years from closing date at year-end			
Fund Term	Open-ended			
GP Commitment (%)	TBD			
Target Return	Annualized 10-12% net IRR (levered); Unlevered cash yield of 6%-9%			
Management Fee – Investment Period	0.5% one-time fee on committed			
Management Fee – Post-Investment Period	1.5% on NAV			
Carry	20%			
Catch Up (%) / Hurdle	50% / 6%			



Key: 5 = Top Decile; 4 = Top Quartile; 3 = Average; 2 = Bottom Half; 1 = Bottom Decile; 0 = No Information

Past performance is not indicative of future results.

FIRM OVERVIEW

Founded in 2014, ITE Management ("ITE" or the "Firm") is an alternative investment firm focused on investing in real assets in the transportation industry, predominantly in rail and air. The Firm manages three separate strategies: ITE Rail, ITE Aviation, and ITE Container. The Firm is led today by the three co-founders: David Smilow, Jason Koenig, and Jim Unger. ITE employs 42 professionals across investment & asset management, asset operations, and back-office operations including ITE Labs (an in-house team dedicated to its data-driven technology platform). The Firm has offices in New York, Chicago, and St Louis.

INVESTMENT STRATEGY

ITE Rail Fund (the "Fund") will manage a portfolio of freight rail cars and related assets. ITE will primarily purchase rail cars that are on-lease and will seek to build a portfolio that is diversified by car type, commodity carried, lessee, length and expiration of leases, and age of car. A broad diversification allows the Fund to mitigate volatility and risks. Currently, the portfolio is comprised of approximately 35,000 rail cars and diversified across 170+ different commodities, 250+ lessees with 700+ leases, railcars ranging from 1 to 50 years old with a weighted average age of 6 years by value, and with approximately 75% of the rated fleet as investment grade. The Fund seeks to generate stable and predictable cash flows through strong lease contracts that are take-or-pay, long-dated, and priced at fixed rates throughout the lease term. To source opportunities, ITE uses its large network of partners including manufacturers, operating lessors, and servicers. In addition, the Fund owns American Industrial Transport's ("AITX") rail car maintenance and servicing network with 15 maintenance facilities and over 540 employees. As the majority of the ITE leases are full-service, the Firm uses AITX to service existing assets by providing ongoing maintenance and fulfilling other repair and servicing needs. The Fund may opportunistically invest up to 15% of its portfolio in non-rail car related assets. The Fund also targets 2:1 leverage on an asset-level and uses asset-backed loans and securitizations on a non-recourse basis to the Fund.

TRACK RECORD

Since inception in 2014, the Firm has purchased over 35,000 railcars totaling over \$3.2 billion in asset value. Today, the Firm is a top 10 owner of freight railcars in North America. Currently, ITE manages over \$1.4 billion in investor commitments to its Rail strategy. As of June 30, 2020, the Firm has achieved an unlevered gross cash yield of 9%.

Fund	Vintage	Size (\$B)	Levered Net IRR*
Rail Fund	2014	\$1.4	11.4%

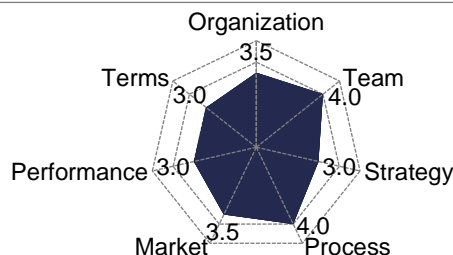
Source: ITE as of December 31, 2020. *Annualized.

Investment Merits	Investment Concerns
<ul style="list-style-type: none"> Optimal point in manager lifecycle Differentiated strategy with diversification, uncorrelated return profile, and stable yield Extensive operational / maintenance capabilities through AITX and in-house, data-driven technology platform Consistent, attractive absolute returns 	<ul style="list-style-type: none"> Leverage and inflation risk Expansion into Europe and potential market opportunity Sector exposure to oil and gas / fossil fuels Select terms, including one-time fee on committed capital and low hurdle rate

HPS Energy & Power SMA

Key Highlights

Currency / Minimum SMA Size (M)	USD / Est. \$200
First Close Amount (B)	NA
First Close Date	NA
Final Close Date	NA
Geographic Focus	Global
Strategy	Infrastructure & Energy
Industry	Sustainable Energy, Energy Transition, & Dislocated Energy
Investment Size (M)	TBD
Number of Investments	TBD
Investment Period	NA
Fund Term	NA
Target Return	7% to 15% unlevered gross returns (dependent on sector & investment structure)
Management Fee - Investment Period	1.25% on invested levered capital
Management Fee - Post-Investment Period	1.25% on invested levered capital
Carry/ Hurdle	15% / Distributions of current proceeds will calculate preferred return on remaining invested capital



Key: 5 = Top Decile; 4 = Top Quartile; 3 = Average; 2 = Bottom Half; 1 = Bottom Decile; 0 = No Information

FIRM OVERVIEW

Founded in 2007, HPS Investment Partners LLC ("HPS" or the "Firm") is a global credit investment manager that invests across the credit spectrum with approximately \$64 billion in AUM. HPS was originally formed as a unit of Highbridge Capital Management ("HCM"), a subsidiary of JPMorgan Asset Management ("JPMAM"). In March 2016, senior principals of HPS acquired the Firm and its subsidiaries from JPMAM and HCM. Following the transaction, JPMAM retained a passive minority interest in HPS, and in June 2018, affiliates of Dyal Capital Partners made a passive minority investment in the Firm. HPS is headquartered in New York and maintains a global presence through eleven offices worldwide. The Firm employs 150 investment professionals worldwide.

INVESTMENT STRATEGY

The HPS Energy & Power Fund (the "Fund") is a real assets credit strategy focusing on (i) energy transition and related-infrastructure investments, and (ii) dislocations in traditional energy credit. The Fund seeks to opportunistically construct a diversified portfolio while investing across both the Energy Transition and Dislocated Energy strategies. For Energy Transition, HPS will target a range of segments that are undergoing a thematic shift to cleaner energy methods, including larger-scale renewable energy generation assets or portfolios, supporting expansion of renewable fuels, and funding enabling technologies such as battery storage systems, among others. The Energy Transition strategy targets an unlevered 9-13% gross return, depending on asset type and structure. The Dislocated Energy strategy will focus on the volatility and price uncertainty associated with oil and gas commodity prices, shortage of traditional capital availability for the sector, and low valuations in the energy sector as a whole. The Dislocated Energy strategy will target a 10-15% gross IRR with the potential for an additional 2% from equity options or warrants and a 1.2x-1.6x gross ROI.

TRACK RECORD

HPS has invested more than \$7 billion into the energy & power sectors across 57 deals. Of the 57 investments, 13 have been identified as energy transition & sustainable energy deals and have produced a 1.18x gross unlevered ROI and 9.9% gross unlevered IRR.

Fund	Inception Year	Size (\$M)	Gross ROI*	Gross IRR*
Energy & Power Strategy	2008	7,790	1.15x	8.3%

Source: HPS as of June 30, 2020.

*Unlevered returns.

Investment Merits

- Experienced, tenured senior team
- Global platform and strong reputation within credit markets
- Deep track record

Investment Concerns

- Large, multi-strategy firm with third-party ownership and a focus on asset growth
- Allocation to energy

Appendix

Wilshire Investment Summaries – Bench Managers

Bench Manager Recommendations

MANAGER	FIRM OVERVIEW	INVESTMENT STRATEGY
ASI Hark	<p>Hark Capital's investment strategy was incepted at Enhanced Capital in 2012 and has been managed by Doug Cruikshank, Rafael Castro, and Rich Davis since Fund I. In 2017, this investment team led by Mr. Cruikshank rebranded as Hark Capital, which in turn was acquired by Aberdeen Standard Investments ("ASI" or the "Firm") in May 2018. As of June 30, 2020, ASI's assets under management totaled \$563 billion. In total, the Firm employs over 400 professionals dedicated to private market investing in 21 offices across the world. Today, Hark is comprised of seven total team members, led by Mr. Cruikshank, and will continue to operate as an independent team within the ASI platform.</p>	<p>ASI Hark Capital III ("Hark III", "Fund III", or the "Fund") will provide loans to financial sponsor-owned companies that require capital but either (i) cannot meet the lending criteria set forth by traditional sources of capital, and/or (ii) would prefer to raise non-dilutive debt as an alternative to equity. Typical uses of capital include de-leveraging, restructuring, funding M&A, and supporting strategic transition, among others. The Fund will target a portfolio of 20 to 25 deals predominately in North America, although up to 20% may be invested in other OECD countries. All loans will feature credit support from the financial sponsor in the form of a guarantee or a put right to sell. Loans will be collateralized by some combination of (i) the total net asset value of a sponsor's portfolio and/or (ii) undrawn limited partner commitments of the sponsor's fund and will require additional covenants on minimum net asset value and/or minimum number of portfolio companies in the financial sponsor's portfolio.</p>

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Presentation by Jina Bresson
June 2021



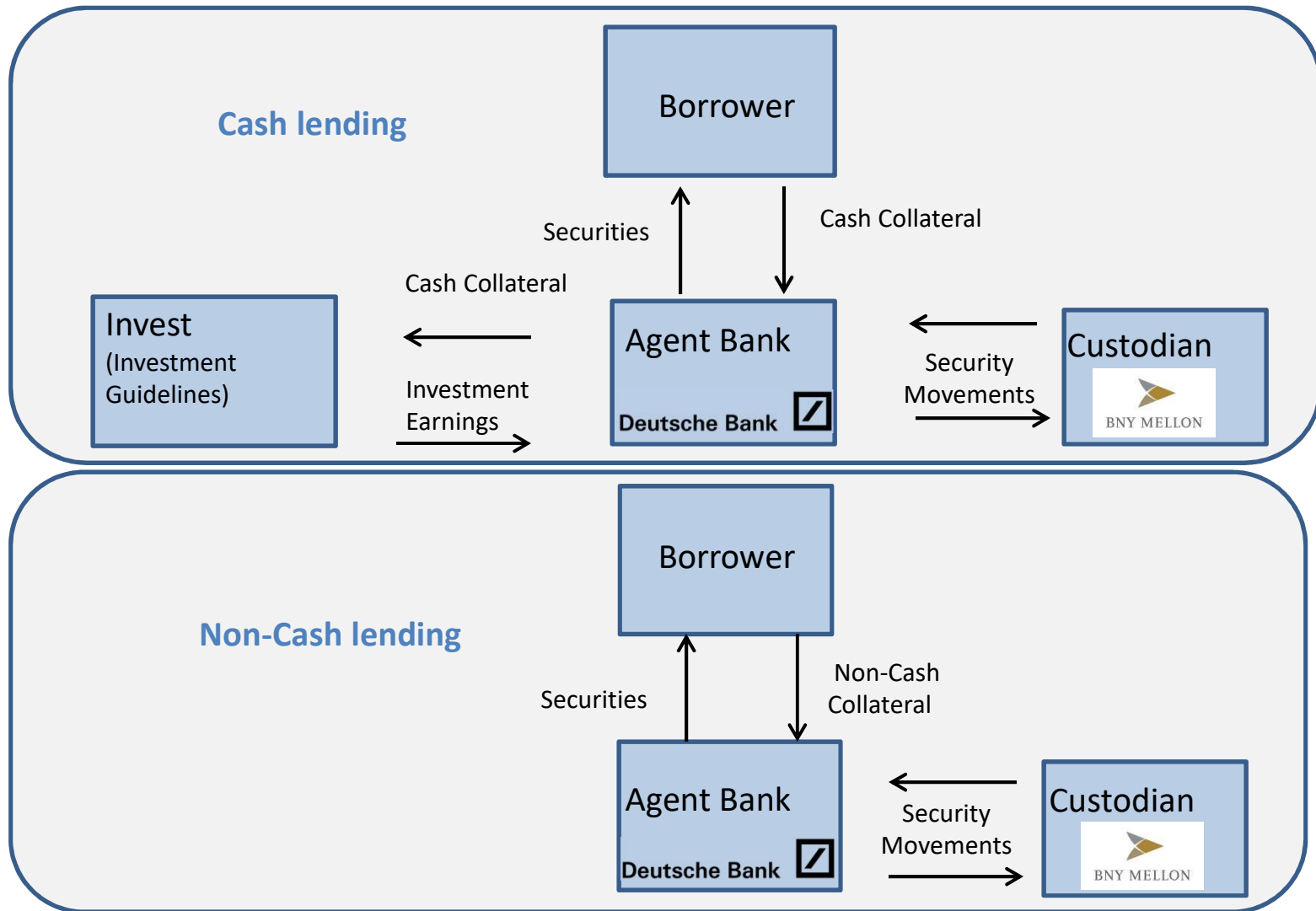
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Securities Lending Annual Update July 2020 – May 2021



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Overview

- Lend only securities in actively managed accounts
 - 18 active funds
 - Average lendable assets: \$11B
 - Average loan balance: \$798M
- Provide incremental income to the portfolio
- Maximize investment return on existing securities
- Increase earnings without interrupting trade activities
- Split is 90/10 with IPERS/Deutsche Bank



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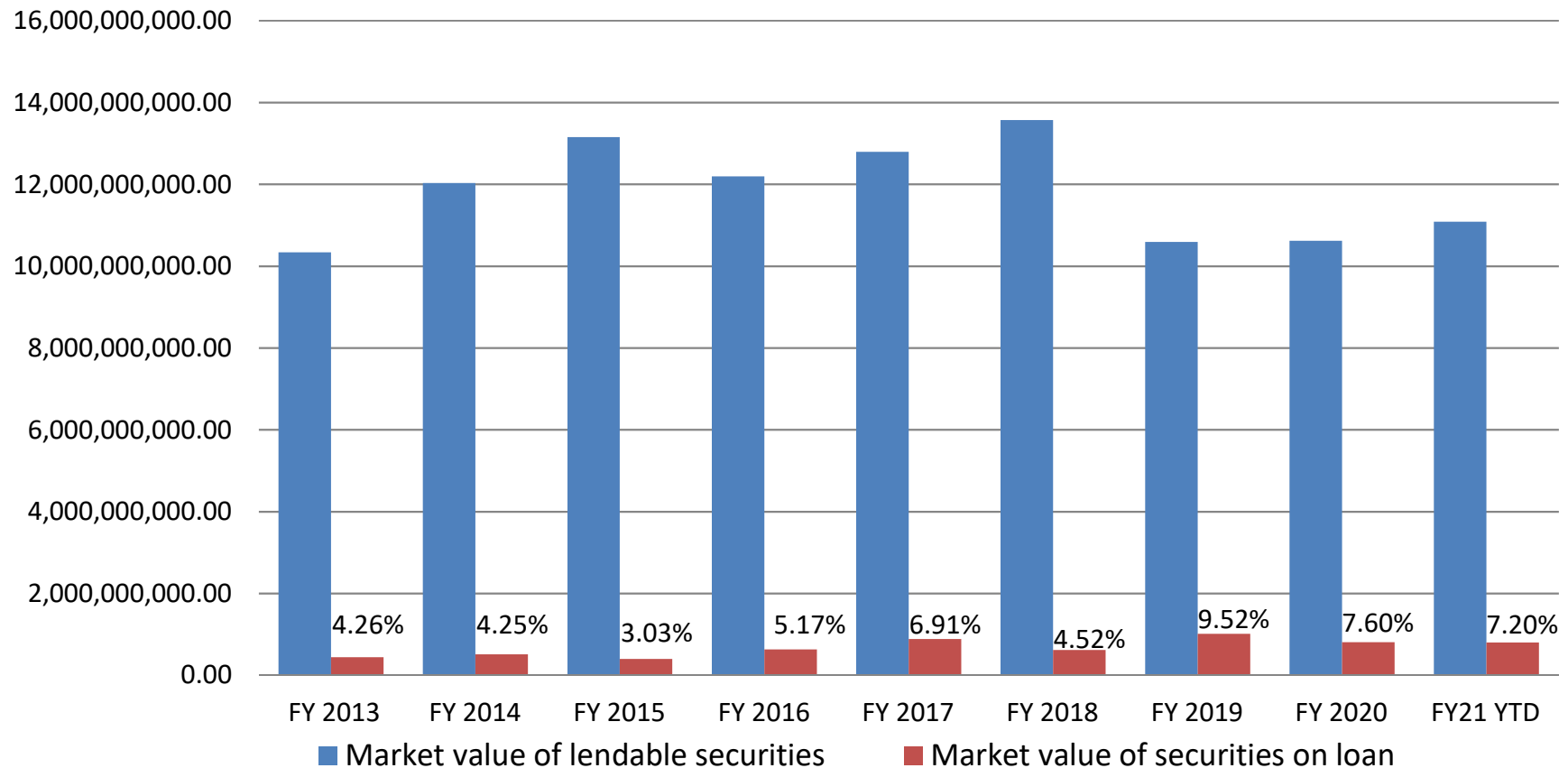
Investment Guidelines

- Invest according to IPERS' current low-risk investment strategy.
- Cash collateral is invested in:
 - Government money market funds
 - Overnight repurchase agreements collateralized with obligations issued by the United States Treasury or obligations issued by agencies or government-sponsored entities of the United States government
- Non-cash collateral
 - Treasuries



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Percent of Lendable Securities on Loan

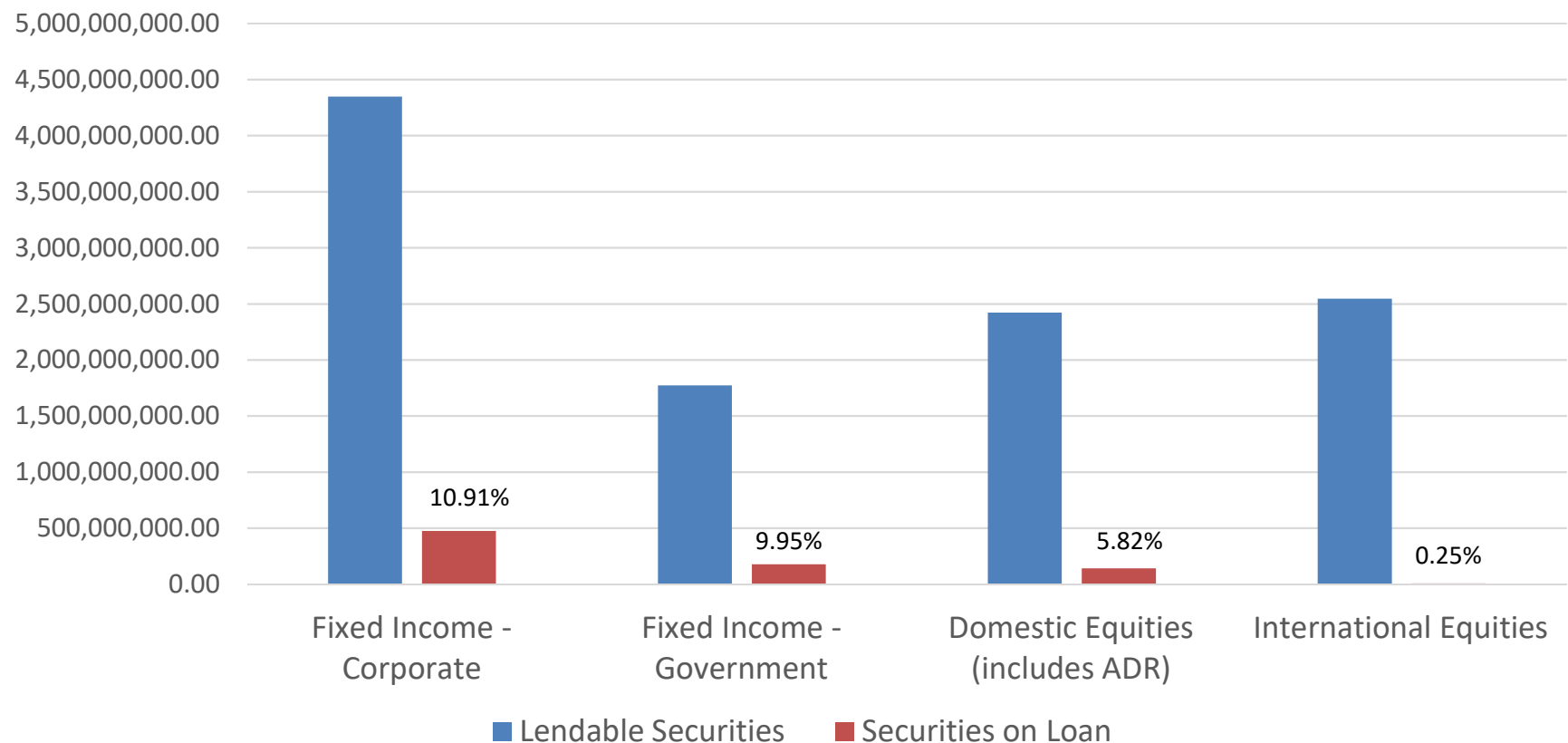




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Percent of Lendable Securities on Loan by Category

July 2020 – May 2021 (FY 21)

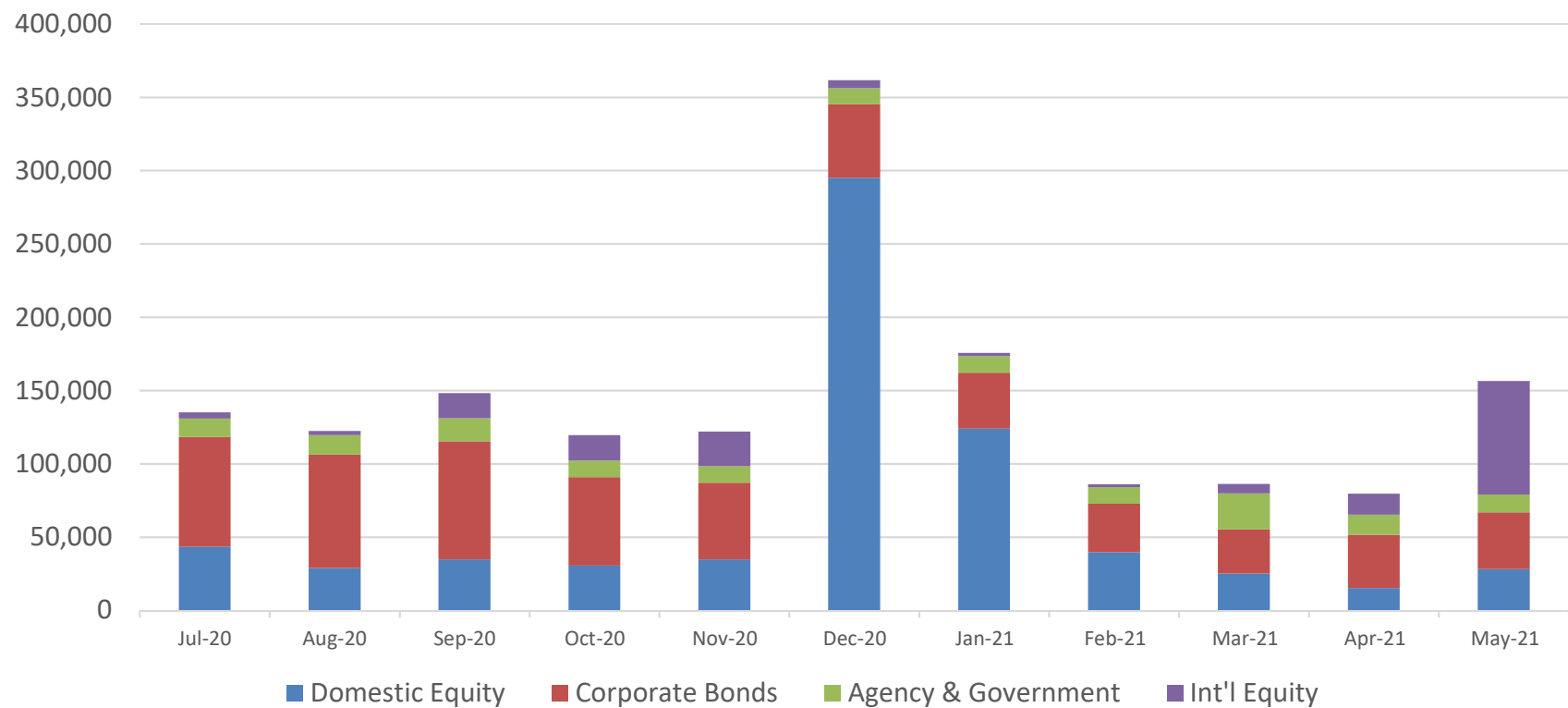




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Monthly Earnings by Asset Class

July 2020 – May 2021 (FY 21)

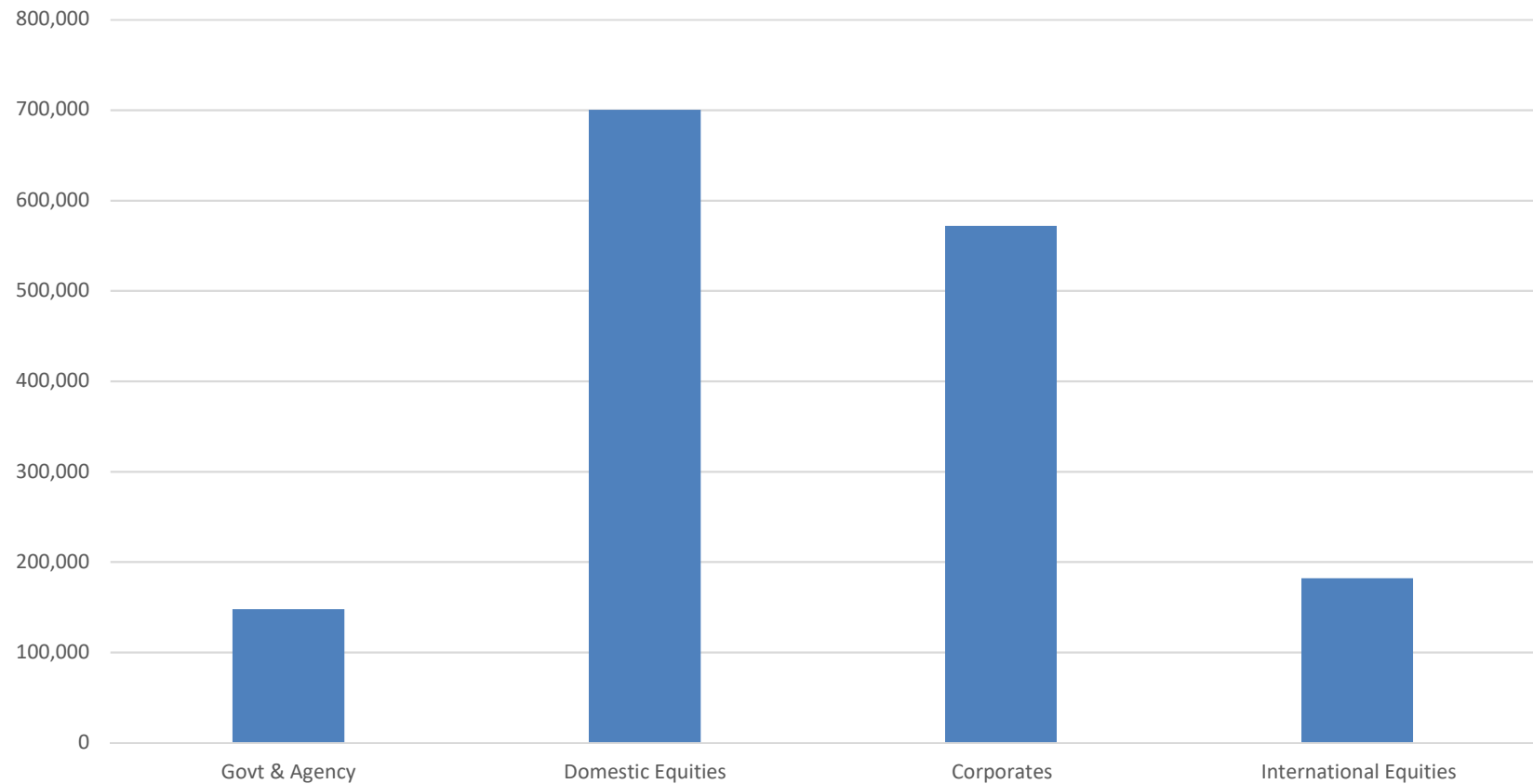




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Earnings by Asset Class

July 2020 – May 2021 (FY 21)

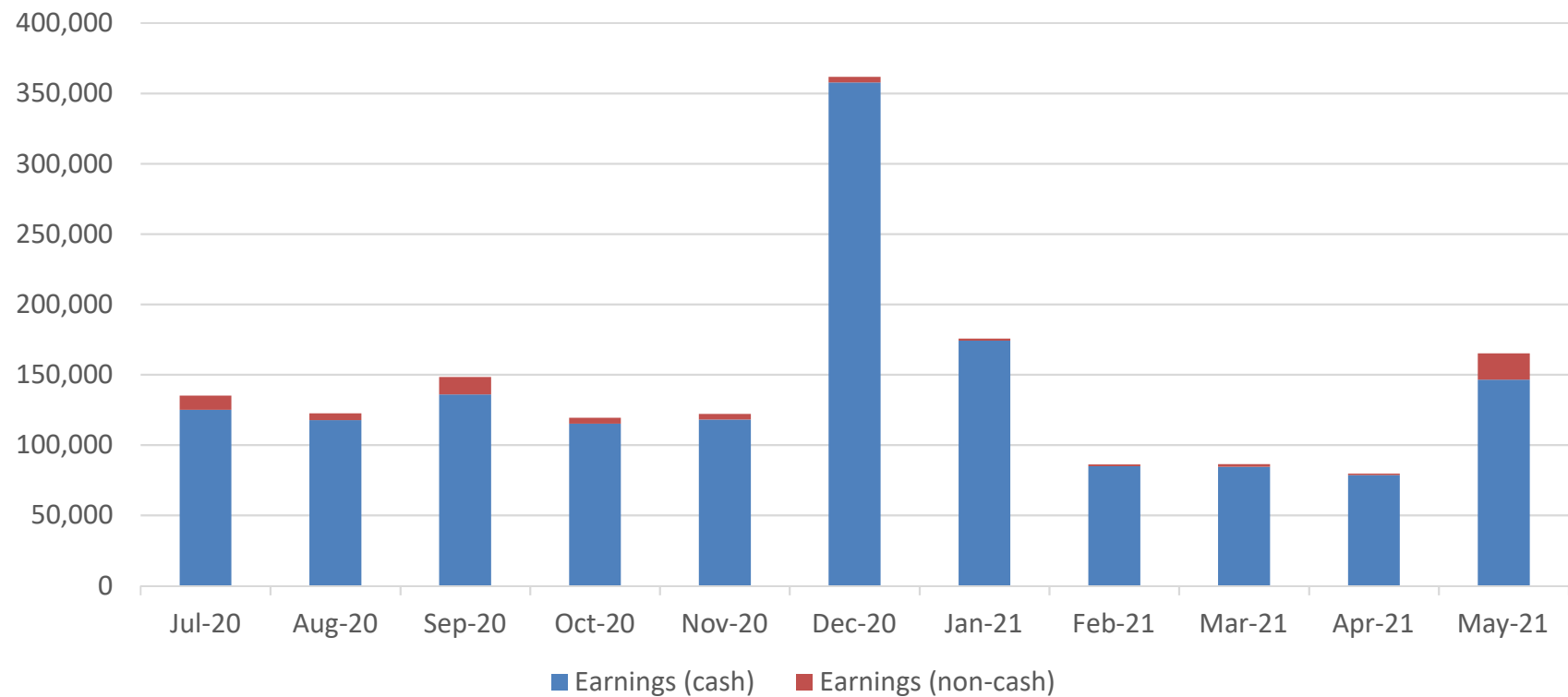




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Cash and Non-Cash Earnings

July 2020 – May 2021 (FY 21)





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Top Earning Securities

July 2020 – May 2021 (FY 21)

Security	Asset Type	Client Earnings
QuantumScape Corp	Equity	\$321,388
Yara International ASA	Equity	\$75,893
Rocket Cos Inc – Class A	Equity	\$56,236
Diamond Sports 6 5/8 8/15/27	Bond	\$42,748
Telenor ASA	Equity	\$33,091
Ligand Pharmaceuticals	Equity	\$31,261
American Airlines 3 ¾ 3/1/25	Bond	\$18,623
AMC Entertainment Holds – Cl A	Equity	\$18,051
Treasury 1 1/8 2/15/31	Govt	\$17,411
Extraction Oil 5 5/8 2/1/26	Bond	\$16,246
Lemonade Inc	Equity	\$15,983
GameStop Corp – Class A	Equity	\$15,936



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Borrower Attribution

July 2020 – May 2021 (FY 21)

Borrower	Average On Loan	% of Total
Citigroup	\$116,315,774	14%
JP Morgan Sec	\$108,811,479	13%
Goldman Sachs	\$94,998,856	12%
Deutsche Bank	\$88,895,229	11%
Merrill Lynch	\$88,148,555	11%
Pershing	\$74,991,831	9%
SG Americas Sec	\$51,018,291	6%
BNP Paribas	\$36,407,984	4%
Barclays Bank	\$23,200,136	3%
Morgan Stanley	\$21,689,788	3%
Remaining Brokers	\$111,204,327	14%



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Earnings by Fund

July 2020 – May 2021 (FY 21)

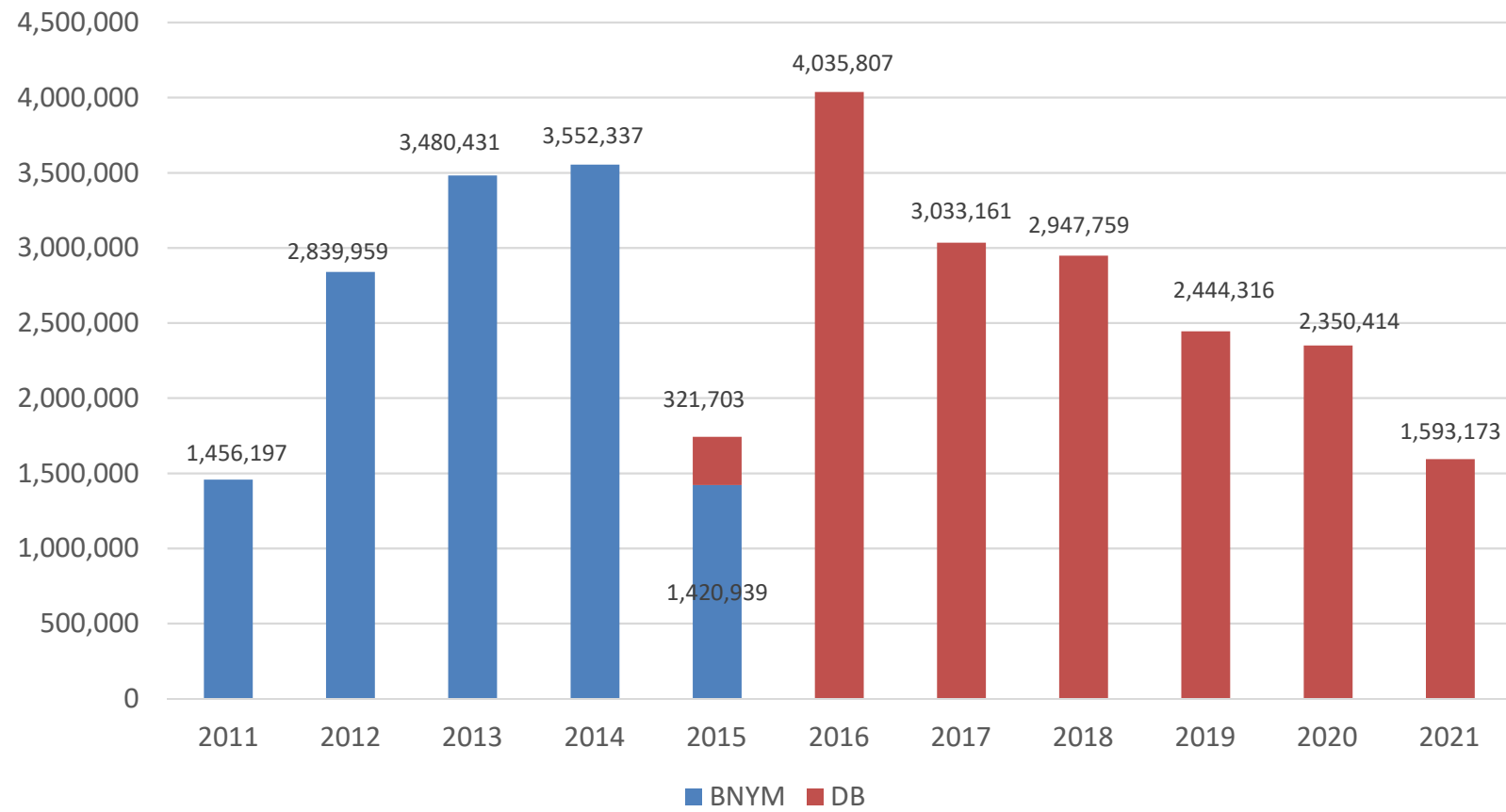
Fund Name	Client Earnings
Janus	\$440,619
Aegon	\$156,060
Rhumblin	\$143,339
PGIM High Yield	\$139,619
TCW Asset Mgmt	\$101,193
US Smart Beta	\$92,833
Western	\$81,351
Mackay Shields	\$75,516
BMO EAFE	\$70,346

Fund Name	Client Earnings
Principal	\$59,322
Dev ExUS Smart Beta	\$56,098
Blackrock	\$42,773
Pru Fixed Income	\$42,400
Panagora EAFE	\$39,526
Prudential EMD	\$21,273
Emerg Mkt Smart Beta	\$17,617
Wellington Emerg Mkt	\$11,261
PGIM GLRV Beta	\$1,987



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Earnings by Fiscal Year





SECURITIES LITIGATION AND MONITORING REPORT

I. STATUS OF CASES THAT IPERS IS SERVING IN AN ACTIVE ROLE

A. Allegheny County Employees' Retirement System vs. Energy Transfer

On January 13, 2020, the Investment Board authorized IPERS to seek an active role in this litigation. In February 2020, the United States District Court for the Eastern District of Pennsylvania appointed the IPERS-led group as the Lead Plaintiff in a case involving the common units of Energy Transfer LP. On June 15, 2020, the Lead Plaintiff's operative complaint was filed. On August 14, 2020, the defendants moved to dismiss the complaint. Following full briefing and oral argument held in late February 2021, the Court substantially upheld the complaint in a decision issued on April 6, 2021. The defendants' answer to the complaint is due to be filed by June 4, 2021, and the parties are commencing discovery in the case.

B. IPERS vs. BANA

IPERS' employees were deposed August 11, 2020, and remaining Plaintiffs, shortly thereafter. Fact discovery is complete. IPERS' counsel filed a motion for class certification several months ago, seeking to have IPERS appointed as a class representative. Our experts who filed reports in support of class certification all have been deposed. Defendants' opposition to class certification is due June 29, 2021, after which our counsel will depose their experts before filing a reply brief on October 5, 2021.

C. NovaStar

This case was filed in 2008. It has a long procedural history, including appeals to the Second Circuit. In March 2019, the district court judge granted final approval of a \$165 million settlement. There were objectors to the settlement—several entities wanted to pursue their own claims directly but missed the opt-out deadline. That appeal is fully briefed and pending before the Second Circuit. IPERS will have no further obligations but the appeal prevents the distribution of settlement proceeds until it has resolved.

D. Other Litigation

PG&E Corporation Bankruptcy Proceeding

PG&E Corporation, the California utility company whose operations were blamed for starting the wildfires in Northern California in 2017, filed bankruptcy. IPERS authorized the law firm of Barrack, Rodos & Bacine (BR&B) to submit a securities claim on the fund's behalf in this matter. On April 15, 2020, BR&B filed the claim on IPERS behalf in the bankruptcy proceedings. Information about IPERS' claims was provided to the administrator and we are waiting to receive funds.

II. FUNDS RECOVERED FROM MONITORED CASES

Company Name	Claim Filing Deadline	Most Recent Recovery Received Date	Total Recovery Received To Date
PPG Industries, Inc.	12/20/2019	04/21/2021	\$7,524.24
FleetCor Technologies, Inc.	05/13/2020	04/16/2021	\$1,438.73
GS Mortgage Securities Corp.	05/13/2016	04/09/2021	\$3,775,810.24
MGM Mirage	01/06/2016	02/12/2021	\$55,238.56
21Vianet Group, Inc.	10/31/2018	02/05/2021	\$16,076.92
American Realty Capital Properties, Inc.	01/23/2020	01/08/2021	\$37,203.60
Washington Mutual, Inc.	12/08/2011	12/22/2020	\$28,561.52
Amgen, Inc.	12/23/2016	12/02/2020	\$11,540.25
Wells Fargo & Company	01/23/2019	11/27/2020	\$13,231.53
Pfizer, Inc.	01/28/2017	11/19/2020	\$34,689.23
Avon Products, Inc.	01/19/2016	11/12/2020	\$2,123.75
Wilmington Trust Corp.	11/26/2018	11/05/2020	\$344.14
Global Crossing Ltd. (2)	09/04/2004	11/03/2020	\$149,609.71
Genworth Financial, Inc.	08/22/2016	10/26/2020	\$102,562.33
J.P. Morgan Acceptance Corporation	09/06/2014	10/23/2020	\$2,461,283.61
Countrywide Financial Corporation	12/15/2013	09/18/2020	\$2,834,763.37
St. Jude Medical Securities Litigation	12/08/2016	07/16/2020	\$18,853.55
Yahoo! Inc.	09/01/2018	07/16/2020	\$9,587.47
Bank of America Securities, Derivative & ERISA Litigation	04/25/2013	06/30/2020	\$165,234.46
Finova Group, Inc.	09/30/2002	06/23/2020	\$2,669.25

Total: **\$9,728,346.46**

Of the total funds recovered, as set forth above, **\$1,026,694.54** was received during the period of June 4, 2020 through June 1, 2021.

2021

JANUARY						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY						
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28						

MARCH						
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APRIL						
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MAY						
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30	31					

JUNE						
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JULY						
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25	26	27	28	29	30	31

AUGUST						
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22	23	24	25	26	27	28
29	30	31				

SEPTEMBER						
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER						
S	M	T	W	T	F	S
					1	2
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10	11	12	13	14	15	16
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24	25	26	27	28	29	30
31						

NOVEMBER						
S	M	T	W	T	F	S
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

DECEMBER						
S	M	T	W	T	F	S
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5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Board Meetings

March 26, 2021

CY2020 Investment Performance

June 17, 2021

Private Markets Portfolio Review

September 15-16, 2021

Continuing Education Session

FY2021 Investment Performance Review

Asset Allocation

Investment Policy and Goal Statement

December 2, 2021

Investment Board and BAC Mtg

Actuarial Valuation Presentation