

# Fiscal Year 2021 – 2022 Internal Fee Presentation

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**December 15, 2022**

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# Summary

- Total investment expenses decreased \$93 million from \$618 million in FY2021 to \$525 million in FY2022<sup>(1)</sup>
  - Base Fees for External Managers decreased \$17 million from \$384 million to \$367 million
  - Profit Share for External Managers decreased \$73 million from \$201 million to \$128 million
  - Investment Office Expenses decreased \$4 million from \$34 million to \$30 million
- Total investment expenses decreased by 0.19% from 0.84% of Gross Total Fund Exposure in FY2021 to 0.65% in FY2022, and decreased by 0.14% from 0.97% to 0.83% on a Net Total Fund basis
  - Base Fees for External Managers based on Gross Total Fund Exposure declined from 0.52% to 0.45%, and declined from 0.61% to 0.58% on a Net Total Fund basis
- Annual savings from managing assets internally rather than with External Managers in FY2022 were \$55.6 million
  - Internally Managed NAV increased from \$40.8 in FY2021 to \$42.1 billion in FY2022

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# Framework

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- Total Investment Expenses = External Manager Expenses (base fees + profit share) + Investment Office Expenses
  - Total investment expenses exclude carried interest earned by general partners in limited partnerships
  - Ties, in total, to the FY 2022 Annual Comprehensive Financial Report, page 96

# Definition of Total Investment Expenses

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- Peers use their own definitions
  - No uniform reporting convention exists
  - No uniform analysis framework exists
  - No guidance has been issued by GASB, GIPS, GFOA, etc.
  - Public Pension Funds can and do report and disclose expenses differently
- Therefore, peer-to-peer comparisons of Total Investment Expenses are not “apples to apples”
  - They can be highly misleading if they are claimed to be “apples to apples”

# Definition of Total Investment Expenses used by PSERS

## **External Management Expenses**

- Traditional Investments
  - Base Fees
  - Profit Share
- Non-Traditional Investments
  - Base Fees
  - Profit Share in Absolute Return

## **+ Investment Office Expenses**

- Compensation and Benefits
- Technology Services
- Miscellaneous Service Providers
- Consultants (Aon Hewitt, Hamilton Lane, Aksia)
- Custodian

**= Total Investment Expenses<sup>(1)</sup>**

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# Total Investment Expenses: FY 2022

Year Ended June 30, 2022				
Summary of Investment Expenses				
	Base	Profit Share	Other Expense	Total
<b>External Management</b>				
Domestic Equity	N/A	N/A	N/A	N/A
International Equity	\$ 26	\$ 74	\$ -	\$ 99
Fixed Income	\$ 90	\$ 9	\$ -	\$ 99
Real Estate	\$ 46	\$ -	\$ -	\$ 46
Private Equity	\$ 107	\$ -	\$ -	\$ 107
Absolute Return	\$ 82	\$ 45	\$ -	\$ 127
Commodities	\$ 8	\$ -	\$ -	\$ 8
Midstream Energy	\$ 0	\$ 1	\$ -	\$ 2
Infrastructure	\$ 9	\$ -	\$ -	\$ 9
Risk Parity	N/A	N/A	N/A	N/A
Tail Risk Mitigation	\$ 1	\$ -	\$ -	\$ 1
Defined Contribution	\$ 0	\$ -	\$ -	\$ 0
<b>External Management Total</b>	<b>\$ 367</b>	<b>\$ 128</b>	<b>\$ -</b>	<b>\$ 496</b>
<b>Total Investment Office Expenses</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 30</b>	<b>\$ 30</b>
<b>Total Investment Expenses</b>	<b>\$ 367</b>	<b>\$ 128</b>	<b>\$ 30</b>	<b>\$ 525</b>

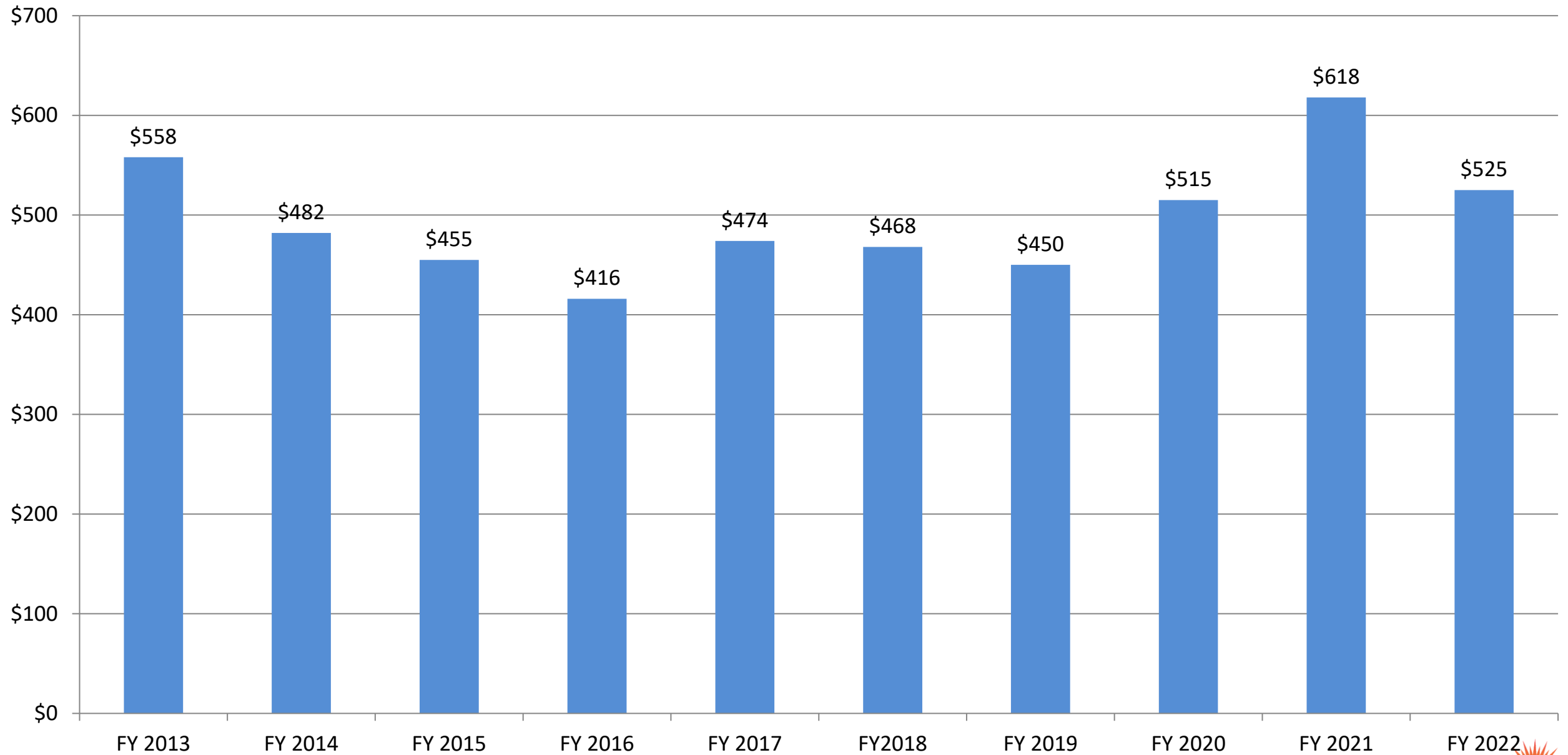
Amounts in millions of dollars, totals may not sum due to rounding

# Total Investment Expenses: FY 2014 – FY 2022

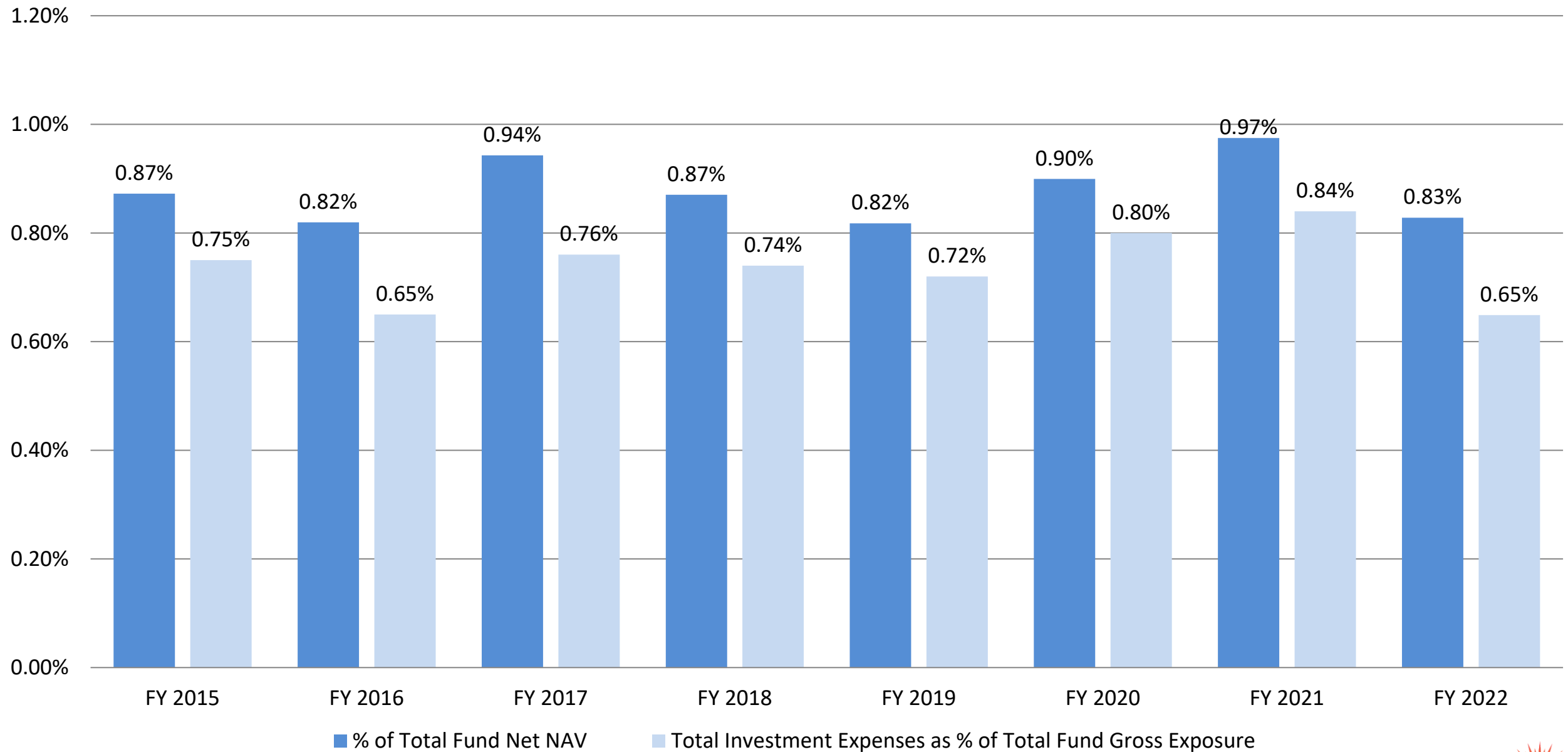
INVESTMENT EXPENSES BY ASSET CLASS									
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
<b>External Management</b>									
Domestic Equity	\$ 3	\$ 3	\$ 3	\$ 3	\$ 2	\$ 3	\$ 2	\$ 3	N/A
International Equity	\$ 18	\$ 24	\$ 24	\$ 25	\$ 28	\$ 40	\$ 72	\$ 93	\$ 99
Fixed Income	\$ 82	\$ 84	\$ 82	\$ 109	\$ 111	\$ 101	\$ 94	\$ 121	\$ 99
Real Estate	\$ 74	\$ 69	\$ 52	\$ 51	\$ 50	\$ 48	\$ 50	\$ 52	\$ 46
Private Equity	\$ 117	\$ 102	\$ 99	\$ 103	\$ 98	\$ 96	\$ 100	\$ 102	\$ 107
Absolute Return	\$ 141	\$ 117	\$ 102	\$ 123	\$ 115	\$ 104	\$ 137	\$ 196	\$ 127
Commodities	\$ 11	\$ 8	\$ 6	\$ 10	\$ 10	\$ 5	\$ 10	\$ 7	\$ 8
Midstream Energy	\$ 11	\$ 12	\$ 8	\$ 9	\$ 9	\$ 8	\$ 4	\$ 3	\$ 2
Infrastructure	N/A	N/A	N/A	N/A	\$ 2	\$ 2	\$ 4	\$ 5	\$ 9
Risk Parity	\$ 6	\$ 13	\$ 18	\$ 23	\$ 22	\$ 17	\$ 16	\$ 4	N/A
Tail Risk Mitigation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$ 1
Defined Contribution	N/A	N/A	N/A	N/A	N/A	N/A	\$ 0	\$ 0	\$ 0
<b>External Management Total</b>	<b>\$ 463</b>	<b>\$ 432</b>	<b>\$ 396</b>	<b>\$ 455</b>	<b>\$ 447</b>	<b>\$ 425</b>	<b>\$ 487</b>	<b>\$ 585</b>	<b>\$ 496</b>
<b>Total Investment Office Expenses</b>	<b>\$ 19</b>	<b>\$ 23</b>	<b>\$ 20</b>	<b>\$ 19</b>	<b>\$ 21</b>	<b>\$ 25</b>	<b>\$ 28</b>	<b>\$ 34</b>	<b>\$ 30</b>
<b>Total Investment Expenses</b>	<b>\$ 482</b>	<b>\$ 455</b>	<b>\$ 416</b>	<b>\$ 474</b>	<b>\$ 468</b>	<b>\$ 450</b>	<b>\$ 515</b>	<b>\$ 618</b>	<b>\$ 525</b>

Amounts in millions of dollars, totals may not sum due to rounding

# Total Investment Expenses

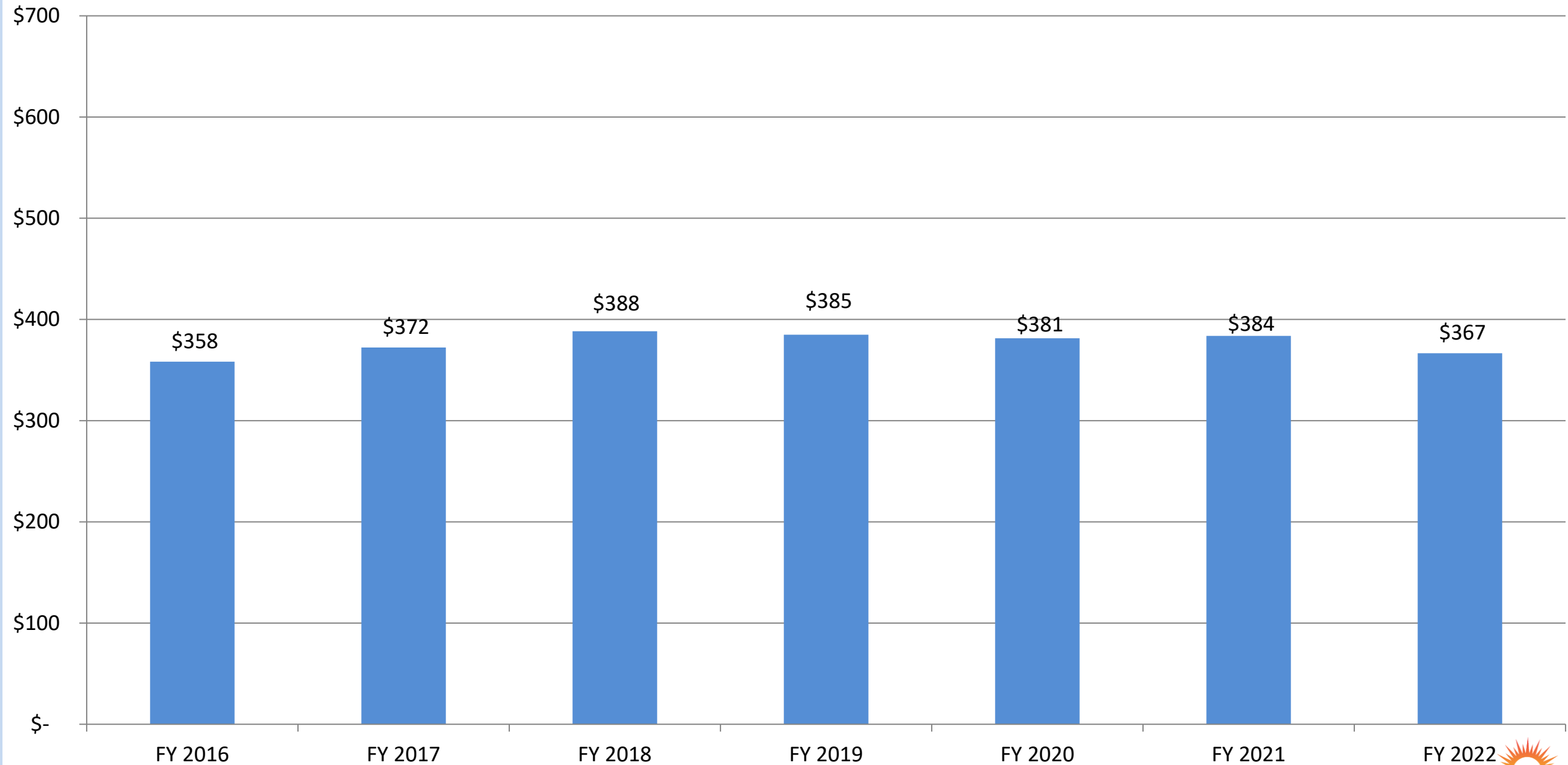


# Total Investment Expenses



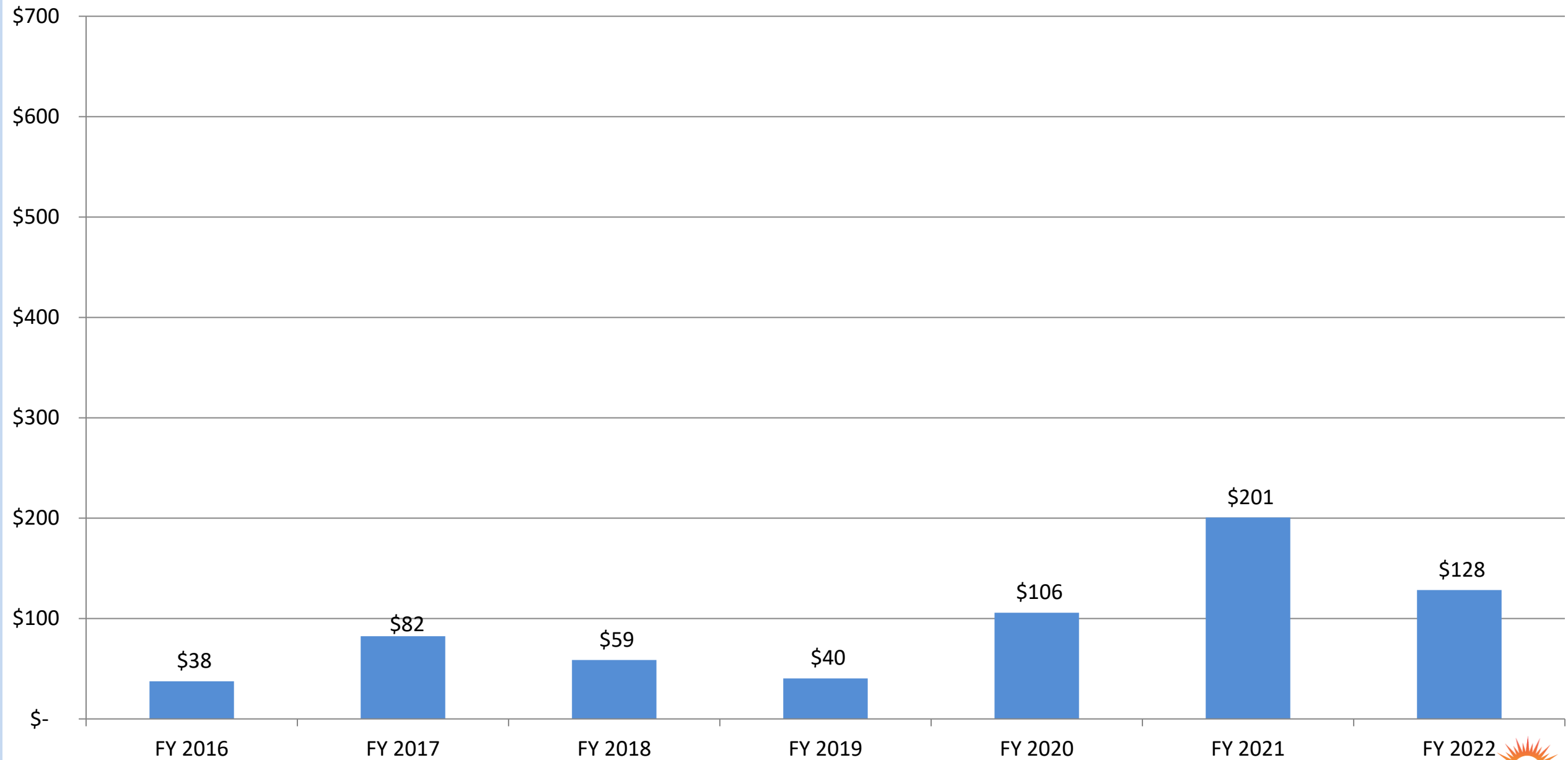
Calculated based upon quarterly NAV and gross exposure (NAV plus leverage)

# Base Fee Expenses



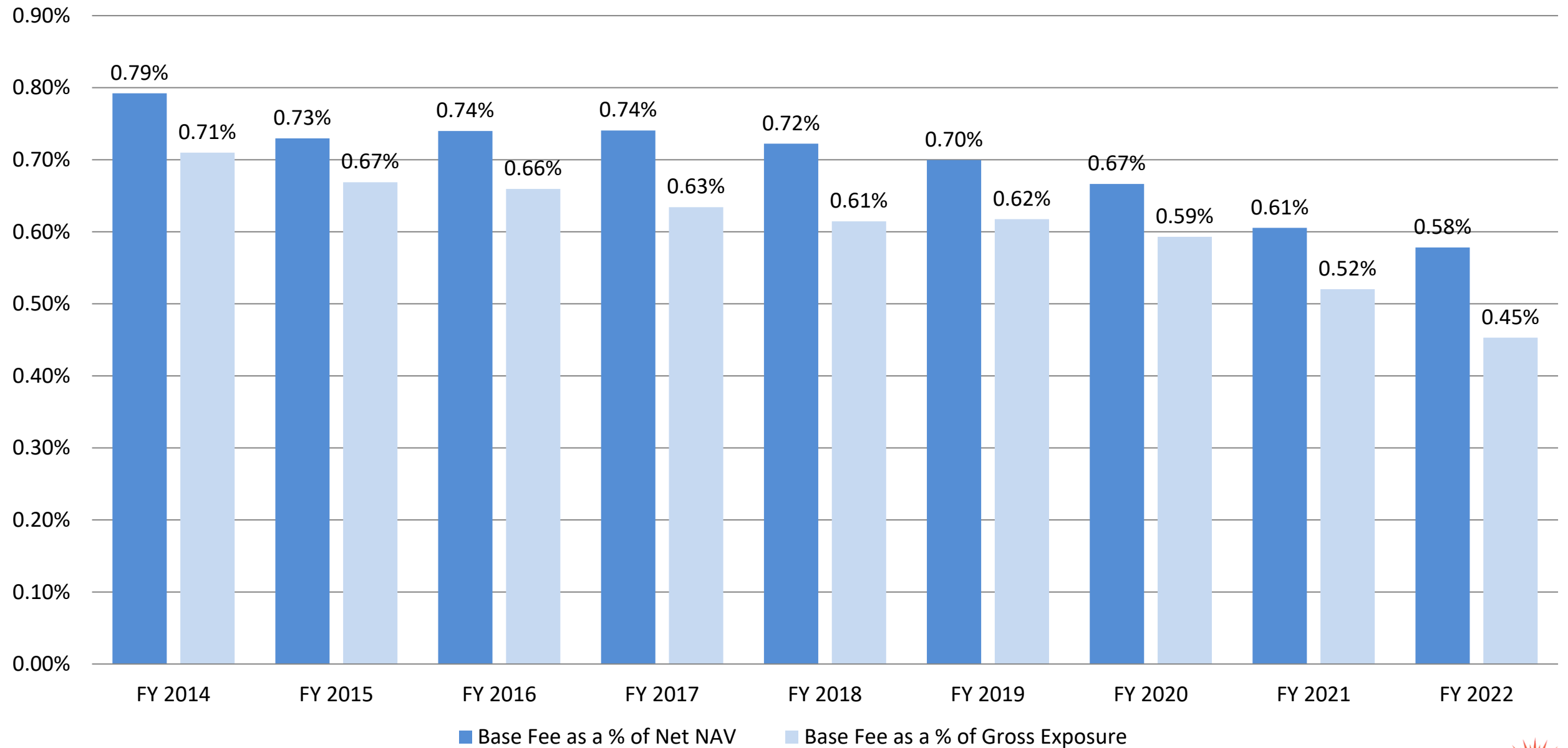
Dollar amounts in millions

# Profit Share Expenses



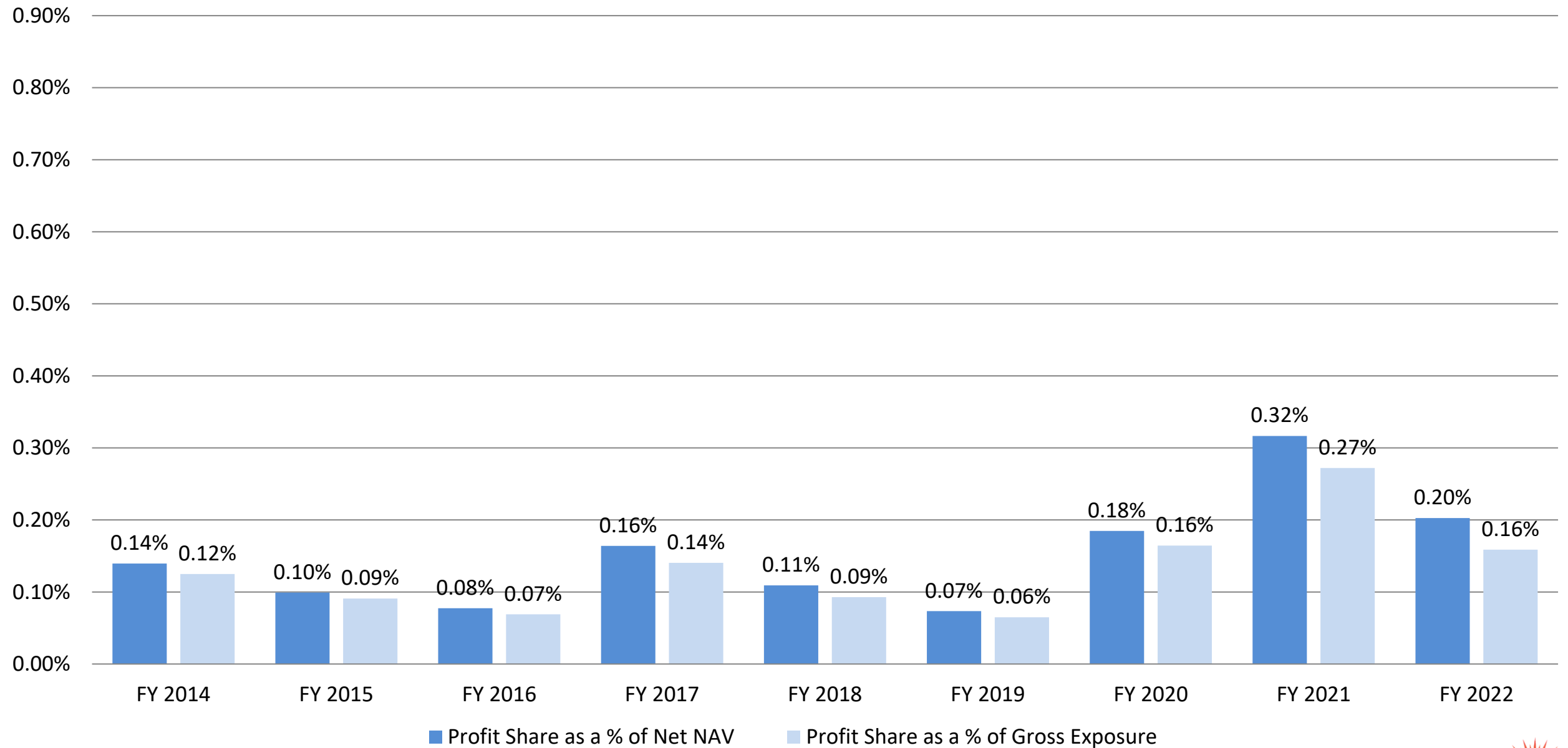
Dollar amounts in millions

# Base Fee Expenses



Calculated based upon quarterly NAV and gross exposure (NAV plus leverage)

# Profit Share Expenses



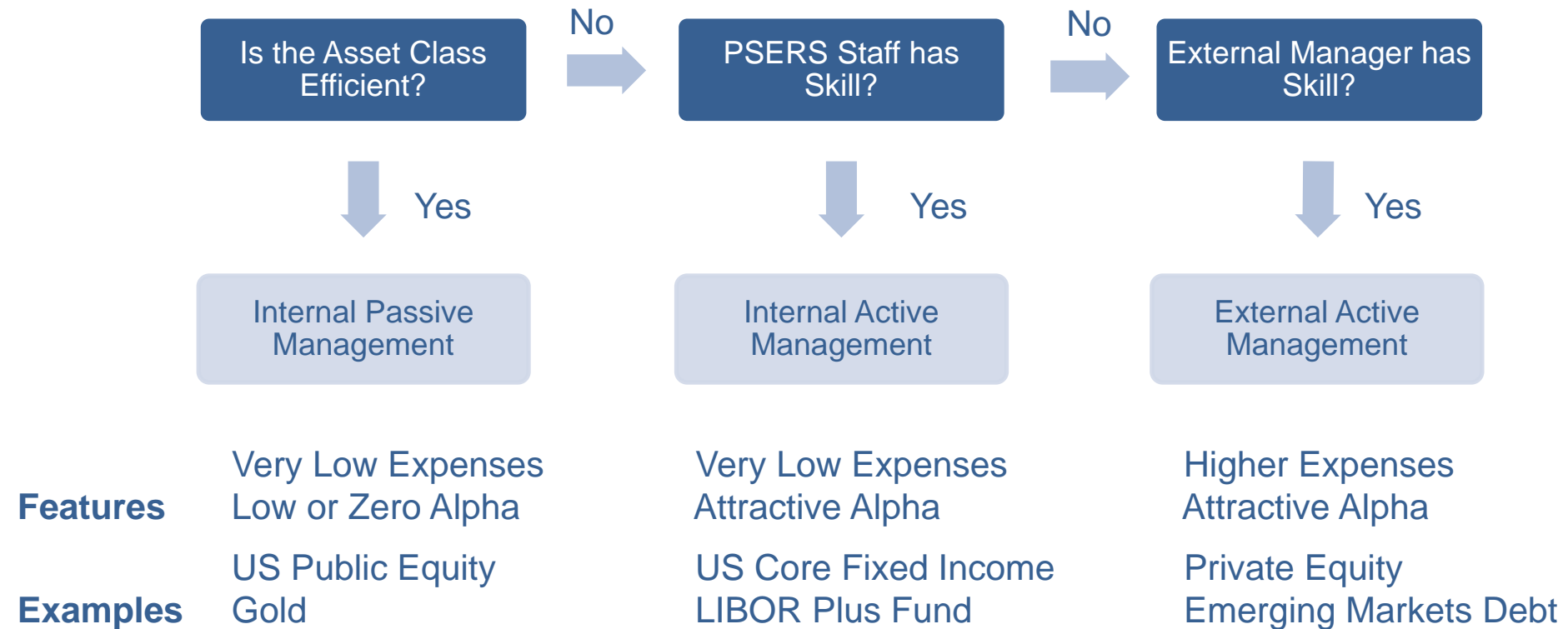
Calculated based upon quarterly NAV and gross exposure (NAV plus leverage)



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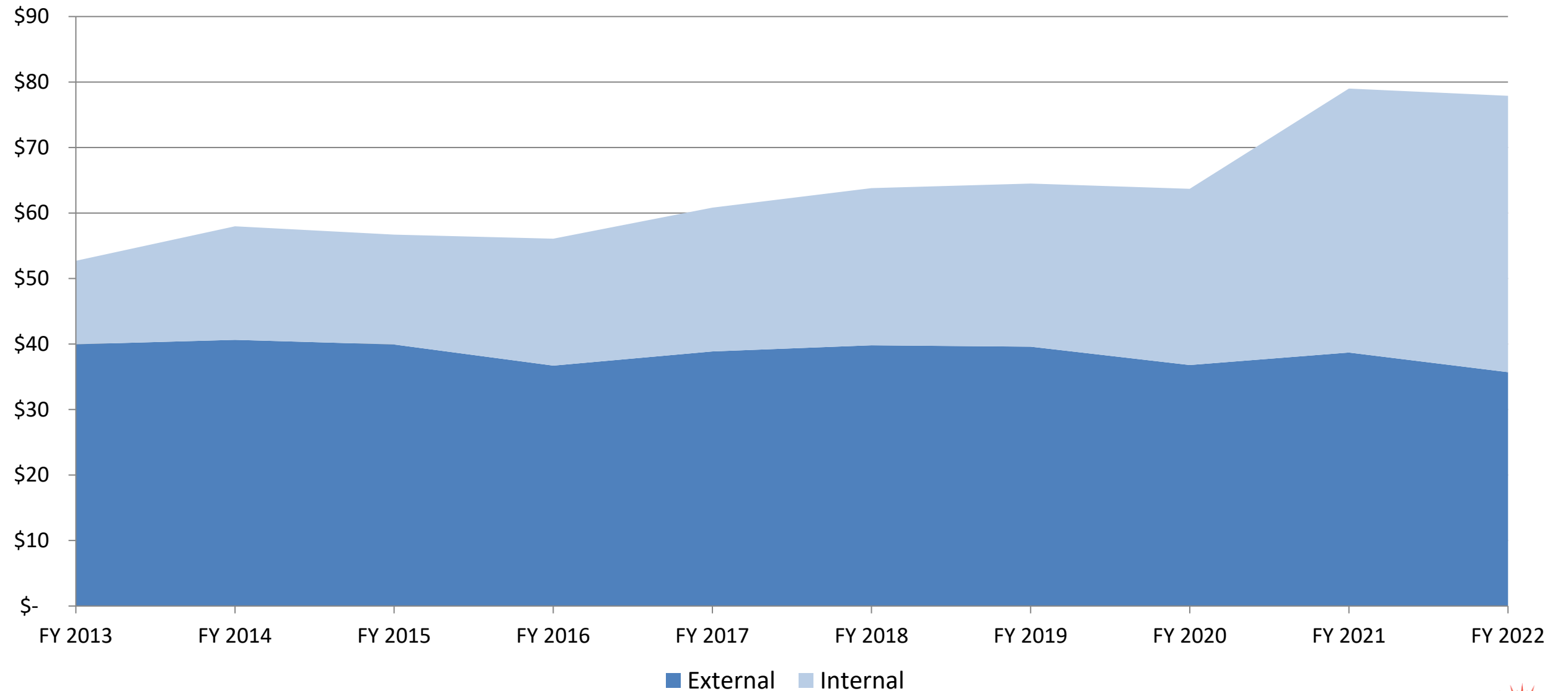
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# External vs Internal Management



# External vs Internal Management

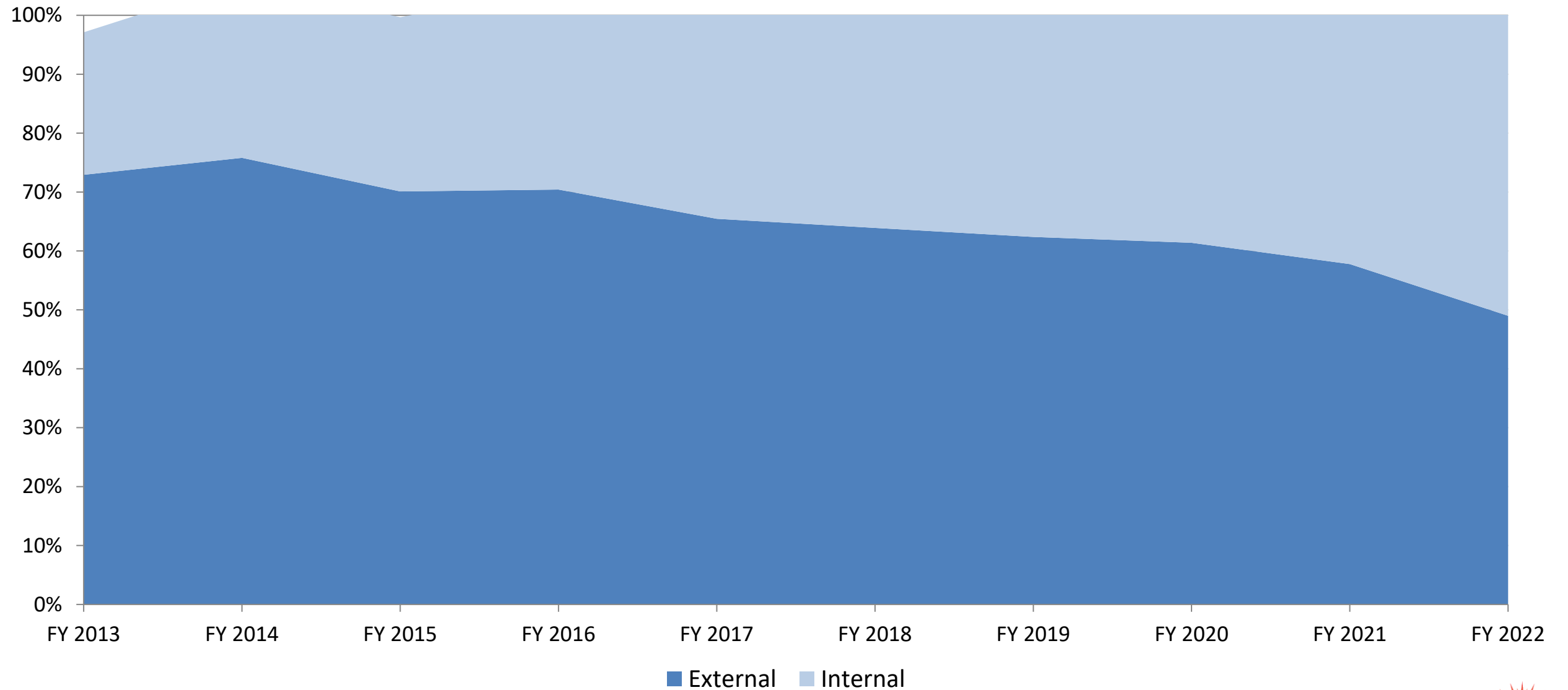
External AUM v Internal AUM (Gross Exposure)



Amounts in billions of dollars  
Calculated based upon monthly average gross exposure (NAV plus leverage)

# External vs Internal Management

External AUM v Internal AUM as a % of the Total Fund (Gross Exposure)



# Savings Generated by Internal Management

- Annual savings from managing assets internally rather than with External Managers in FY2022 were \$55.6 million with Internally Managed NAV increasing from \$40.8 to \$42.1 billion

Fiscal Year	Internally Managed NAV (in billions)	Savings from Internal Management (Updated Estimates - in millions)*
FY 2022	\$42.1	\$55.6
FY 2021	\$40.8	\$42.4
FY 2020	\$27.8	\$39.8
FY 2019	\$25.1	\$35.9
FY 2018	\$23.8	\$33.0

\* - savings based on current estimated annual fee %'s applied to the internally managed NAVs for each of the past fiscal years

# Savings Generated by Internal Management

Portfolios	Estimated Annual Fee %*	Market Value as of June 30, 2022	Estimated Cost to Manage Externally
S&P 600 Index	0.04%	\$ 819	\$ 0.33
S&P 500 Index	0.05%	\$ 4,890	\$ 2.45
S&P 400 Index	0.03%	\$ 814	\$ 0.24
Emerging Market Equity Index	0.03%	\$ 485	\$ 0.15
EMG Mkts IMI	0.09%	\$ 761	\$ 0.69
MSCI ACWI ex. U.S.	0.17%	\$ 3,357	\$ 5.71
<b>Public Equity Total</b>		<b>\$ 11,127</b>	<b>\$ 9.55</b>
Private Equity Co-Investments	1.00%	\$ 1,387	\$ 13.87
<b>Private Equity Total</b>		<b>\$ 1,387</b>	<b>\$ 13.87</b>
Active High Yield	0.44%	\$ 184	\$ 0.81
Emerging Market Bond	0.39%	\$ 21	\$ 0.08
Funded Passive U.S. TIPS	0.03%	\$ 3,729	\$ 1.12
U.S. Core Fixed Income	0.21%	\$ 589	\$ 1.24
U.S. Long Treasuries	0.03%	\$ 5,150	\$ 1.54
U.S. TIPS	0.16%	\$ 3,602	\$ 2.14
<b>Public Fixed Income Total</b>		<b>\$ 13,275</b>	<b>\$ 6.94</b>
Private Credit Co-Investments	1.00%	\$ 196	\$ 1.96
<b>Private Fixed Income Total</b>		<b>\$ 196</b>	<b>\$ 1.96</b>
Bloomberg Commodity Index	0.03%	\$ 1,249	\$ 0.37
Gold Index	0.03%	\$ 4,466	\$ 1.34
Infrastructure Index	0.03%	\$ 2,067	\$ 0.62
Public Infrastructure	0.35%	\$ 2,666	\$ 9.33
REIT Index	0.03%	\$ 1,321	\$ 0.40
<b>Public Real Assets</b>		<b>\$ 11,769</b>	<b>\$ 12.06</b>
Direct Real Estate	0.50%	\$ 535	\$ 2.68
Real Estate Co-Investments	0.49%	\$ 87	\$ 0.43
Private Infrastructure Co-Investments	1.00%	\$ 229	\$ 2.29
Private Commodities Co-Investments	1.00%	\$ 84	\$ 0.84
<b>Private Real Assets</b>		<b>\$ 935</b>	<b>\$ 6.23</b>
Absolute Return Co-Investments	1.00%	\$ 26	\$ 0.26
<b>Absolute Return Total</b>		<b>\$ 26</b>	<b>\$ 0.26</b>
Tail Risk Mitigation	1.50%	\$ 94	\$ 1.41
<b>Tail Risk Mitigation Total</b>		<b>\$ 94</b>	<b>\$ 1.41</b>
Cash Management	0.10%	\$ 3,311	\$ 3.31
<b>Net Leverage Total</b>		<b>\$ 3,311</b>	<b>\$ 3.31</b>
<b>Grand Total</b>		<b>\$ 42,121</b>	<b>\$ 55.60</b>

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# Investment Office Expenses

Expense Category	Vendor	FY2021-2022 Expenditure
BNY Mellon (Custody)		\$2,522,376
GASB 68 Pension Expense		(\$838,375)
Investment Consultants		
	Aksia LLC	\$842,616
	Aon	\$674,475
	Constellation Advisers	\$543,206
	Hamilton Lane Advisors LLC	\$2,000,000
	Misc Consulting Services	\$46,876
<b>Investment Consultants Total</b>		<b>\$4,107,174</b>
Misc Legal Services		\$24,313
Other Post Employment Benefits		(\$1,462,531)
Overhead		\$334,249
Real Estate Rental		\$224,414
Specialized Service Providers		
	Black Rock Financial Management Inc (Risk)	\$525,820
	Bloomberg	\$1,038,965
	Misc Service Providers	\$632,197
	SIMCORP (IBOR)	\$3,235,894
	STP Investment Services LLC (ABOR)	\$572,910
	Verus	\$1,350,000
<b>Specialized Service Providers Total</b>		<b>\$7,355,786</b>
Staff Compensation (Salary and Benefits)		\$16,103,903
Subscriptions		
	Advent Software	\$436,170
	CreditSights	\$45,000
	Misc Subscriptions	\$171,512
	MSCI Index Data	\$92,418
	S&P Global Market Intelligence Inc	\$179,433
<b>Subscriptions Total</b>		<b>\$924,534</b>
Telecommunications		\$80,345
Travel/Training		\$29,197
Treasury Services		\$182,375
<b>Grand Total</b>		<b>\$29,587,759</b>



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# Total Fees Reported by Managers FY 2022

<b>INTERNATIONAL EQUITY</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Acadian Asset Management, LLC	\$ 1,472	\$ -	\$ 1,472
Baillie Gifford Overseas LTD.	\$ 2,236	\$ (0)	\$ 2,236
BlackRock (Emerging Mkts Alpha Adv Fund) Class D Shares	\$ 1,508	\$ 18	\$ 1,526
BlackRock (Emerging Mkts Alpha Adv Fund) Class P Shares	\$ 571	\$ -	\$ 571
Cederberg Greater China Equity Fund	\$ -	\$ (10,519)	\$ (10,519)
ECM Feeder Fund 2 LP	\$ -	\$ 48,443	\$ 48,443
Insight Investment International Limited - Everest	\$ 238	\$ -	\$ 238
Insight Investment International Limited - Nevada	\$ 432	\$ -	\$ 432
Insight Investment International Limited - Nickel	\$ 5	\$ -	\$ 5
Insight Investment International Limited - Oxygen	\$ 90	\$ -	\$ 90
Insight Investment International Limited - Sierra	\$ 123	\$ -	\$ 123
Insight Investment International Limited - Wilson	\$ 90	\$ -	\$ 90
Insight Investment International Limited - Yellow	\$ 17	\$ -	\$ 17
Marathon Asset Management, LLP	\$ 2,721	\$ -	\$ 2,721
Oberweis Asset Management, Inc	\$ 2,560	\$ -	\$ 2,560
QS Investors, LLC	\$ 227	\$ -	\$ 227
Steadview Capital Partners LP	\$ 2,581	\$ 9,812	\$ 12,393
The Children's Investment Fund LP	\$ 7,214	\$ 5,690	\$ 12,904
Wasatch Advisors, Inc (Non-US Small Cap Equity Inv)	\$ 1,031	\$ -	\$ 1,031
Wasatch Advisors, Inc. (Emerging Markets Small Cap)	\$ 2,431	\$ 20,064	\$ 22,495
<b>International Equity Total</b>	<b>\$ 25,547</b>	<b>\$ 73,509</b>	<b>\$ 99,056</b>

# Total Fees Reported by Managers FY 2022

<b>FIXED INCOME</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Apollo European Principal Finance Fund II (Dollar A), L.P.	\$ 128	\$ -	\$ 128
Apollo European Principal Finance Fund III (Dollar A), LP	\$ 1,716	\$ -	\$ 1,716
Avenue Energy Opportunities Fund II, L.P.	\$ 750	\$ -	\$ 750
Avenue Energy Opportunities Fund, L.P.	\$ 1,094	\$ -	\$ 1,094
Avenue Europe Special Situations Fund III (U.S.), L.P.	\$ 821	\$ -	\$ 821
Bain Capital Credit Managed Account (PSERS), L.P.	\$ 1,170	\$ -	\$ 1,170
Bain Capital Distressed and Special Situations 2013 (A), L.P.	\$ 802	\$ -	\$ 802
Bain Capital Distressed and Special Situations 2016 (A), L.P.	\$ 2,227	\$ -	\$ 2,227
Bain Capital Distressed and Special Situations 2019 (A), L.P.	\$ 2,041	\$ -	\$ 2,041
Bain Capital Middle Market Credit 2014, LP	\$ 493	\$ -	\$ 493
Bain Capital Special Situations Asia II, LP	\$ 7	\$ -	\$ 7
BlackRock FIGA High Yield	\$ 4,375	\$ 7,922	\$ 12,297
Bridgewater Associates, LP	\$ 25,269	\$ -	\$ 25,269
Brigade Distressed Value Offshore Fund Ltd.	\$ 746	\$ 321	\$ 1,067
Brigade Structured Credit Offshore Fund	\$ 873	\$ 334	\$ 1,208
Carlyle Energy Mezzanine Opportunities Fund II, L.P.	\$ 1,230	\$ -	\$ 1,230
Carlyle Energy Mezzanine Opportunities Fund-Q, L.P.	\$ 14	\$ -	\$ 14
Cerberus PSERS Levered Loan Opportunities Fund, L.P.	\$ 9,100	\$ -	\$ 9,100
Clearlake Opportunities Partners II, L.P.	\$ 647	\$ -	\$ 647
Franklin Templeton Institutional, LLC	\$ 2,003	\$ -	\$ 2,003
Galton Onshore Mortgage Recovery Fund IV, L.P.	\$ 382	\$ -	\$ 382
Hayfin SOF II USD Co-Invest, L.P.	\$ 86	\$ -	\$ 86
Hayfin SOF II USD, L.P.	\$ 2,165	\$ -	\$ 2,165
HayFin Special Opportunities Credit Fund (Parallel), L.P.	\$ 182	\$ -	\$ 182
ICG Europe Fund V, L.P.	\$ 343	\$ -	\$ 343

Dollars in thousands

Numbers may not add due to rounding

# Total Fees Reported by Managers FY 2022

<b>FIXED INCOME</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
ICG Europe Fund VI, L.P.	\$ 769	\$ -	\$ 769
ICG Europe Fund VII Feeder SCSp	\$ 1,489	\$ -	\$ 1,489
International Infrastructure Finance Company Fund, L.P.	\$ 407	\$ -	\$ 407
Keystone Partners, L.P. Series A	\$ 196	\$ -	\$ 196
Latitude Management Real Estate Capital IV, Inc.	\$ 895	\$ -	\$ 895
LBC Credit Partners III, L.P.	\$ 442	\$ -	\$ 442
LBC-P Credit Fund, L.P.	\$ 7,022	\$ -	\$ 7,022
Park Square - PSERS Credit Opportunities Fund, L.P.	\$ 4,148	\$ -	\$ 4,148
PIMCO BRAVO Fund III Onshore Feeder, LP	\$ 1,765	\$ -	\$ 1,765
PSERS TAO Partners Parallel Fund, L.P. - (TAO 2.0)	\$ 1,918	\$ -	\$ 1,918
PSERS TAO Partners Parallel Fund, L.P. - (TAO 3.0)	\$ 1,867	\$ -	\$ 1,867
PSERS TAO Partners Parallel Fund, L.P. - (TAO Contingent)	\$ 1,022	\$ -	\$ 1,022
Radcliffe Capital Management LP	\$ 517	\$ -	\$ 517
Sixth Street Fundamental Strategies Partners (A), L.P.	\$ 434	\$ -	\$ 434
Sixth Street Opportunities Partners V (A), L.P.	\$ 150	\$ -	\$ 150
Sixth Street Specialty Lending Europe II, L.P.	\$ 631	\$ -	\$ 631
SSG Capital Partners V Sidecar, L.P.	\$ 750	\$ -	\$ 750
SSG Capital Partners V, L.P.	\$ 2,097	\$ -	\$ 2,097
TPG Opportunities Partners III (A), L.P. (Sixth Street Opportunities Partners III (A), L.P.)	\$ 468	\$ -	\$ 468
TSSP Opportunities Partners IV (A), L.P. Sixth street	\$ 2,062	\$ -	\$ 2,062
Varde Scratch and Dent Feeder I-A, L.P., The	\$ 363	\$ -	\$ 363
Varde Scratch and Dent Feeder, L.P., The	\$ 65	\$ -	\$ 65
Whitehorse Liquidity Partners (Onshore) IV, L.P.	\$ 1,400	\$ -	\$ 1,400
Whitehorse Liquidity Partners V, L.P.	\$ 700	\$ -	\$ 700
<b>Fixed Income Total</b>	<b>\$ 90,243</b>	<b>\$ 8,577</b>	<b>\$ 98,820</b>

Dollars in thousands  
Numbers may not add due to rounding

# Total Fees Reported by Managers FY 2022

REAL ESTATE	Base Fee	Profit Share	Total
812 Market Street	\$ 31	\$ -	\$ 31
AG Core Plus Realty Fund III, L.P.	\$ 110	\$ -	\$ 110
AG Core Plus Realty Fund IV, L.P.	\$ 1,055	\$ -	\$ 1,055
AG Europe Realty Fund II, L.P.	\$ 1,200	\$ -	\$ 1,200
AG Europe Realty Fund III, L.P.	\$ 1,147	\$ -	\$ 1,147
AG Realty Value Fund X, L.P.	\$ 1,436	\$ -	\$ 1,436
Almanac Realty Securities VI, L.P.	\$ 149	\$ -	\$ 149
Almanac Realty Securities VII, L.P.	\$ 635	\$ -	\$ 635
Almanac Realty Securities VIII, L.P.	\$ 944	\$ -	\$ 944
Ares European Real Estate Fund IV, L.P.	\$ 478	\$ -	\$ 478
Ares U.S. Real Estate Fund IX, L.P.	\$ 937	\$ -	\$ 937
Ares U.S. Real Estate Fund VIII, L.P.	\$ 298	\$ -	\$ 298
ARS VII (SIDECAR V), L.P.	\$ 78	\$ -	\$ 78
ARS VIII (SC V), L.P.	\$ 99	\$ -	\$ 99
Atlanta Marriott	\$ 131	\$ -	\$ 131
Avenue Real Estate Fund (Parallel) L.P.	\$ 500	\$ -	\$ 500
Bell Institutional Fund V, L.P.	\$ 139	\$ -	\$ 139
Bell Institutional Fund VI, L.P.	\$ 1,060	\$ -	\$ 1,060
Bell Institutional Fund VII, L.P.	\$ 844	\$ -	\$ 844
Blackstone Real Estate Debt Strategies II, L.P.	\$ 3	\$ -	\$ 3
Blackstone Real Estate Debt Strategies III, L.P.	\$ 662	\$ -	\$ 662
Blackstone Real Estate Partners Europe IV, L.P.	\$ 317	\$ -	\$ 317
Blackstone Real Estate Partners VII, L.P.	\$ 1,233	\$ -	\$ 1,233
Blackstone Real Estate Partners VIII, L.P.	\$ 2,378	\$ -	\$ 2,378
Brookfield Strategic Real Estate Partners II, L.P.	\$ 1,719	\$ -	\$ 1,719

Dollars in thousands

Numbers may not add due to rounding

# Total Fees Reported by Managers FY 2022

REAL ESTATE	Base Fee	Profit Share	Total
Brookfield Strategic Real Estate Partners III-A, L.P.	\$ 2,543	\$ -	\$ 2,543
Brookfield Strategic Real Estate Partners, L.P.	\$ 638	\$ -	\$ 638
BSREP IV Obsidian Co-Invest B, L.P.	\$ 9	\$ -	\$ 9
Cabot Industrial Core Fund II, L.P.	\$ 888	\$ -	\$ 888
Cabot Industrial Value Fund V, L.P.	\$ 528	\$ -	\$ 528
Cabot Industrial Value Fund VI, L.P.	\$ 1,500	\$ -	\$ 1,500
Carlyle Realty Partners V, L.P.	\$ 76	\$ -	\$ 76
Carlyle Realty Partners VI, L.P.	\$ 72	\$ -	\$ 72
Carlyle Realty Partners VII, L.P.	\$ 319	\$ -	\$ 319
Carlyle Realty Partners VIII, L.P.	\$ 1,564	\$ -	\$ 1,564
DRA Fund IX Industrial Co-Investment LLC	\$ 99	\$ -	\$ 99
DRA Growth and Income Fund IX, LLC	\$ 1,471	\$ -	\$ 1,471
DRA Growth and Income Fund VII, L.P.	\$ 138	\$ -	\$ 138
DRA Growth and Income Fund VIII Co-Investment I, LLC	\$ 115	\$ -	\$ 115
DRA Growth and Income Fund VIII, LLC	\$ 902	\$ -	\$ 902
DRA Growth and Income Master Fund X, LLC	\$ 1,114	\$ -	\$ 1,114
Exeter Core Industrial Club Fund II, L.P.	\$ 769	\$ -	\$ 769
Exeter Industrial Core Fund III, L.P.	\$ 761	\$ -	\$ 761
Exeter Industrial Value Fund III, L.P.	\$ 56	\$ -	\$ 56
Exeter Industrial Value Fund IV, L.P.	\$ 555	\$ -	\$ 555
Exeter Industrial Value Fund V, L.P.	\$ 1,200	\$ -	\$ 1,200
Five North 5th Street	\$ 42	\$ -	\$ 42
Keystone Milano LLC	\$ 173	\$ -	\$ 173
Keystone Miramar LLC	\$ 97	\$ -	\$ 97
Keystone Orlando LLC	\$ 189	\$ -	\$ 189

Dollars in thousands  
Numbers may not add due to rounding

# Total Fees Reported by Managers FY 2022

REAL ESTATE	Base Fee	Profit Share	Total
Keystone Parkland LLC	\$ 279	\$ -	\$ 279
Latitude Management Real Estate Capital III, Inc.	\$ 118	\$ -	\$ 118
LEM Multifamily Fund V, L.P.	\$ 1,000	\$ -	\$ 1,000
LEM Multifamily Senior Equity Fund IV, L.P.	\$ 270	\$ -	\$ 270
PGIM Agricultural Separate Account	\$ 971	\$ -	\$ 971
Pramerica Real Estate Capital VI, L.P.	\$ 549	\$ -	\$ 549
RCG Longview Debt Fund VI, L.P.	\$ 564	\$ -	\$ 564
RCG Longview Equity Fund, L.P.	\$ 21	\$ -	\$ 21
Rivercenter Mall	\$ 45	\$ -	\$ 45
Security Capital Preferred Growth (Public)	\$ 2,133	\$ -	\$ 2,133
Senior Housing Partnership Fund V, L.P.	\$ 755	\$ -	\$ 755
Stockbridge I Secondary	\$ 107	\$ -	\$ 107
Stockbridge Real Estate Fund II, LP	\$ 54	\$ -	\$ 54
Stockbridge Real Estate Fund III, LP	\$ 298	\$ -	\$ 298
Stockbridge Real Estate Fund, L.P.	\$ 3,887	\$ -	\$ 3,887
Strategic Partners Fund IV RE, L.P.	\$ (0)	\$ -	\$ (0)
The Galleria at Ft Lauderdale	\$ 900	\$ -	\$ 900
UBS (US) Trumbull Property Fund, L.P.	\$ 230	\$ -	\$ 230
<b>Real Estate Total</b>	<b>\$ 45,579</b>	<b>\$ -</b>	<b>\$ 45,579</b>

# Total Fees Reported by Managers FY 2022

PRIVATE EQUITY	Base Fee	Profit Share	Total
Actis Global 4, L.P.	\$ 1,251	\$ -	\$ 1,251
Aisling Capital IV, L.P.	\$ 463	\$ -	\$ 463
Apax Digital, L.P.	\$ 1,053	\$ -	\$ 1,053
Apax X USD, L.P.	\$ 1,943	\$ -	\$ 1,943
Apollo Investment Fund IX, L.P.	\$ 2,312	\$ -	\$ 2,312
Apollo Investment Fund VIII, L.P.	\$ 485	\$ -	\$ 485
Bain Capital Asia Fund II, L.P.	\$ 534	\$ -	\$ 534
Bain Capital Asia Fund III-A, L.P.	\$ 1,129	\$ -	\$ 1,129
Bain Capital Asia Fund IV-B, L.P.	\$ 1,500	\$ -	\$ 1,500
Bain Capital Fund XI-A, L.P.	\$ 350	\$ -	\$ 350
Bain Capital Fund XII, L.P.	\$ 1,048	\$ -	\$ 1,048
Baring Asia Private Equity Fund V, L.P.	\$ 754	\$ -	\$ 754
Baring Asia Private Equity Fund VI, L.P.	\$ 348	\$ -	\$ 348
Blue Point Capital Partners III (B), L.P.	\$ 114	\$ -	\$ 114
Blue Point Capital Partners IV, L.P.	\$ 750	\$ -	\$ 750
Bridgepoint Development Capital III, L.P.	\$ 1,031	\$ -	\$ 1,031
Bridgepoint Development Capital IV, L.P.	\$ 679	\$ -	\$ 679
Bridgepoint Europe IV, L.P.	\$ 452	\$ -	\$ 452
Bridgepoint Europe V, L.P.	\$ 1,351	\$ -	\$ 1,351
Bridgepoint Europe VI, L.P.	\$ 1,570	\$ -	\$ 1,570
Capital International Private Equity Fund VI, L.P.	\$ 432	\$ -	\$ 432
Catterton Growth Partners II, L.P.	\$ 934	\$ -	\$ 934
Catterton Growth Partners III, L.P., L	\$ 1,200	\$ -	\$ 1,200
Catterton Growth Partners, L.P.	\$ 166	\$ -	\$ 166
Catterton Partners VI, L.P.	\$ 33	\$ -	\$ 33

Dollars in thousands  
Numbers may not add due to rounding



# Total Fees Reported by Managers FY 2022

PRIVATE EQUITY	Base Fee	Profit Share	Total
Catterton Partners VII, L.P.	\$ 943	\$ -	\$ 943
Catterton VIII, L.P., L	\$ 1,146	\$ -	\$ 1,146
Cerberus Institutional Partners V, L.P.	\$ 146	\$ -	\$ 146
Cerberus Institutional Partners VI, L.P.	\$ 2,165	\$ -	\$ 2,165
Clearlake Capital Partners IV, L.P.	\$ 320	\$ -	\$ 320
Clearlake Capital Partners VII, L.P.	\$ 240	\$ -	\$ 240
Coller International Partners VI, L.P.	\$ 631	\$ -	\$ 631
Coller International Partners VII, L.P.	\$ 936	\$ -	\$ 936
Crestview Partners II, L.P.	\$ 872	\$ -	\$ 872
Crestview Partners III, L.P.	\$ 1,360	\$ -	\$ 1,360
Crestview Partners, L.P.	\$ 250	\$ -	\$ 250
Crown CG Private Equity Fund 2019, L.P.	\$ 1,410	\$ -	\$ 1,410
DCPF VI Oil and Gas Co-Investment Fund, L.P.	\$ 14	\$ -	\$ 14
Denham Commodity Partners Fund VI, L.P.	\$ 477	\$ -	\$ 477
Energy & Minerals Group Fund III, L.P., The	\$ 805	\$ -	\$ 805
Equistone Partners Europe Fund V E, L.P.	\$ 802	\$ -	\$ 802
Equistone Partners Europe Fund VI E, SCSp	\$ 1,459	\$ -	\$ 1,459
GoldPoint Partners Co-Investment V, L.P.	\$ 199	\$ -	\$ 199
Greenoaks Capital Opportunities Fund III	\$ 2,000	\$ -	\$ 2,000
Hahn & Company III L.P.	\$ 2,250	\$ -	\$ 2,250
Hahn & Company III-S L.P.	\$ 337	\$ -	\$ 337
Hg Genesis 9 A, L.P.	\$ 1,938	\$ -	\$ 1,938
Hg Saturn 2 A L.P.	\$ 881	\$ -	\$ 881
HgCapital 7 A, L.P.	\$ 87	\$ -	\$ 87
HgCapital 8 D, L.P.	\$ 1,599	\$ -	\$ 1,599

Dollars in thousands  
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# Total Fees Reported by Managers FY 2022

PRIVATE EQUITY	Base Fee	Profit Share	Total
HGGC Fund II, L.P.	\$ 349	\$ -	\$ 349
HGGC Fund III, L.P.	\$ 1,113	\$ -	\$ 1,113
Incline Elevate Fund, L.P.	\$ 1,500	\$ -	\$ 1,500
Incline Equity Partners IV, L.P.	\$ 543	\$ -	\$ 543
Insight Opportunities Fund I, L.P.	\$ 626	\$ -	\$ 626
Insight Partners XI, L.P.	\$ 2,189	\$ -	\$ 2,189
Insight Partners XII Buyout Annex Fund, L.P.	\$ 181	\$ -	\$ 181
Insight Partners XII, L.P.	\$ 885	\$ -	\$ 885
Insight Venture Partners X, L.P.	\$ 1,487	\$ -	\$ 1,487
Interactions Corporation	\$ 50	\$ -	\$ 50
K4 Private Investors, L.P.	\$ 1,853	\$ -	\$ 1,853
Landmark Equity Partners XIV, L.P.	\$ 240	\$ -	\$ 240
Lindsay Goldberg V, L.P.	\$ 2,558	\$ -	\$ 2,558
LLR Equity Partners IV, L.P.	\$ 1,353	\$ -	\$ 1,353
LLR Equity Partners V, L.P.	\$ 2,845	\$ -	\$ 2,845
LLR Equity Partners VI, L.P.	\$ 3,470	\$ -	\$ 3,470
Milestone Partners III, L.P.	\$ 85	\$ -	\$ 85
Milestone Partners IV, L.P.	\$ 263	\$ -	\$ 263
New Mountain Partners IV, L.P.	\$ 282	\$ -	\$ 282
New Mountain Partners V, L.P.	\$ 1,424	\$ -	\$ 1,424
New Mountain Partners VI, L.P.	\$ 2,343	\$ -	\$ 2,343
NGP Natural Resources X, L.P.	\$ 299	\$ -	\$ 299
NGP Natural Resources XI, L.P.	\$ 960	\$ -	\$ 960
North Haven Private Equity Asia IV, L.P.	\$ 979	\$ -	\$ 979
Oak HC/FT Partners IV, L.P.	\$ 835	\$ -	\$ 835

Dollars in thousands  
Numbers may not add due to rounding

# Total Fees Reported by Managers FY 2022

PRIVATE EQUITY	Base Fee	Profit Share	Total
Odyssey Investment Partners Fund V, L.P.	\$ 985	\$ -	\$ 985
Orchid Asia V, L.P.	\$ 106	\$ -	\$ 106
Orchid Asia VI, L.P.	\$ 619	\$ -	\$ 619
Orchid Asia VII, L.P.	\$ 1,089	\$ -	\$ 1,089
PAI Europe VI, L.P.	\$ 1,226	\$ -	\$ 1,226
PAI Europe VII, L.P.	\$ 1,669	\$ -	\$ 1,669
Palladium Equity Partners IV, L.P.	\$ 353	\$ -	\$ 353
Partners Group Secondary 2011 (USD), L.P. Inc.	\$ 779	\$ -	\$ 779
Partners Group Secondary 2015 (USD) A, L.P.	\$ 1,097	\$ -	\$ 1,097
Platinum Equity Capital Partners V, L.P.	\$ 2,117	\$ -	\$ 2,117
Platinum Equity Small Cap Fund, L.P.	\$ 1,456	\$ -	\$ 1,456
Portfolio Advisors Secondary Fund III, L.P.	\$ 1,812	\$ -	\$ 1,812
Portfolio Advisors Secondary Fund IV, L.P.	\$ 882	\$ -	\$ 882
Portfolio Advisors Secondary Fund, L.P., PA	\$ 504	\$ -	\$ 504
Sante Health Ventures III	\$ 2,382	\$ -	\$ 2,382
Sante Health Ventures IV	\$ 138	\$ -	\$ 138
Searchlight Capital II, L.P.	\$ 542	\$ -	\$ 542
Searchlight Capital III, L.P.	\$ 2,749	\$ -	\$ 2,749
StarVest Partners II (Parallel), L.P.	\$ 238	\$ -	\$ 238
Strategic Partners Fund IV, L.P.	\$ 17	\$ -	\$ 17
Strategic Partners Fund V, L.P.	\$ 89	\$ -	\$ 89
Strategic Partners Fund VI, L.P.	\$ 467	\$ -	\$ 467
Strategic Partners Fund VII, L.P.	\$ 1,250	\$ -	\$ 1,250
Summit Partners Growth Equity Fund IX, L.P.	\$ 1,292	\$ -	\$ 1,292
Summit Partners Growth Equity Fund VIII, L.P.	\$ 944	\$ -	\$ 944

Dollars in thousands

Numbers may not add due to rounding

# Total Fees Reported by Managers FY 2022

PRIVATE EQUITY	Base Fee	Profit Share	Total
Summit Partners Growth Equity Fund X, L.P.	\$ 128	\$ -	\$ 128
Summit Partners Venture Capital Fund III, L.P.	\$ 118	\$ -	\$ 118
Summit Partners Venture Capital Fund IV, L.P.	\$ 683	\$ -	\$ 683
Tenaya Capital VI, L.P.	\$ 451	\$ -	\$ 451
Tenaya Capital VII, L.P.	\$ 1,394	\$ -	\$ 1,394
Tenaya Capital V-P, L.P.	\$ 61	\$ -	\$ 61
Trilantic Capital Partners V (North America), L.P.	\$ 494	\$ -	\$ 494
Trilantic Capital Partners VI (North America), L.P.	\$ 2,241	\$ -	\$ 2,241
Venor Special Situations Fund II, L.P.	\$ 397	\$ -	\$ 397
Versa Capital Fund II, L.P.	\$ 845	\$ -	\$ 845
Versa Capital Fund III, L.P.	\$ 874	\$ -	\$ 874
Webster Capital IV, L.P.	\$ 224	\$ -	\$ 224
<b>Private Equity Total</b>	<b>\$ 106,573</b>	<b>\$ -</b>	<b>\$ 106,573</b>

# Total Fees Reported by Managers FY 2022

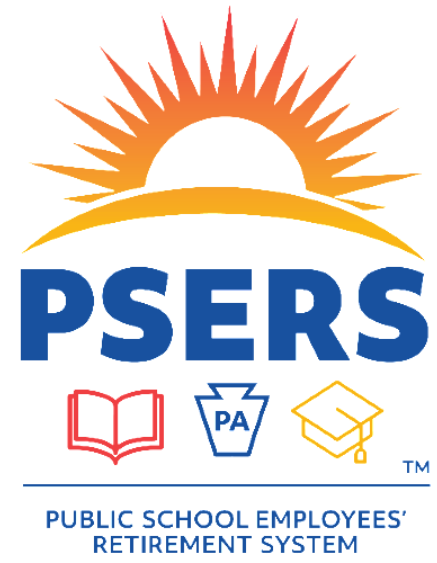
<b>ABSOLUTE RETURN</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Aeolus Property Catastrophe Fund I LP	\$ 3,533	\$ 984	\$ 4,517
AKAZ Offshore Fund LTD	\$ 2,166	\$ -	\$ 2,166
Bridgewater Pure Alpha Fund II, Ltd.	\$ 23,535	\$ -	\$ 23,535
Brigade Capital Management	\$ 771	\$ 902	\$ 1,673
Capula Global Relative Value Fund Limited	\$ 6,420	\$ 6,418	\$ 12,837
Capula Tail Risk Fund Limited	\$ 3,598	\$ -	\$ 3,598
Caspian Select Credit International, Ltd.	\$ 3,127	\$ 1,430	\$ 4,558
DaVinci Reinsurance Ltd.	\$ 914	\$ 144	\$ 1,057
Falko Regional Aircraft Opportunities Fund II L.P.	\$ 571	\$ -	\$ 571
Garda Fixed Income Relative Value Opportunity Fund, Ltd.	\$ 9,654	\$ 9,620	\$ 19,274
HS Group Sponsor Fund II	\$ 933	\$ -	\$ 933
Nimbus Weather Fund, Ltd.	\$ 2,588	\$ -	\$ 2,588
Oceanwood Opportunities Fund	\$ -	\$ (224)	\$ (224)
OWS Credit Opportunity Offshore Fund III, Ltd.	\$ 6,540	\$ 7,193	\$ 13,734
Palmetto Fund, Ltd.	\$ 416	\$ -	\$ 416
Perry Partners, L.P.	\$ (16)	\$ -	\$ (16)
PIMCO Absolute Return Strategy Offshore Fun Ltd.	\$ 285	\$ -	\$ 285
PIMCO Commodity Alpha Fund Ltd.	\$ 6,086	\$ 13,799	\$ 19,886
PIMCO Global Credit Opportunity Offshore Fund, Ltd.	\$ 4,086	\$ 8,234	\$ 12,320
RenaissanceRe Medici Fund Ltd.	\$ 383	\$ -	\$ 383
RenaissanceRe Upsilon Diversified Fund	\$ 818	\$ -	\$ 818
SASOF III, LP	\$ 410	\$ -	\$ 410
SASOF IV, LP	\$ 1,404	\$ -	\$ 1,404
SASOF V, L.P.	\$ 2,180	\$ -	\$ 2,180
Venor Capital Offshore Ltd.	\$ 1,103	\$ (3,384)	\$ (2,281)
<b>Absolute Return Total</b>	<b>\$ 81,504</b>	<b>\$ 45,115</b>	<b>\$ 126,619</b>

Dollars in thousands  
Numbers may not add due to rounding

# Total Fees Reported by Managers FY 2022

<b>COMMODITIES</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Denham Mining Fund, L.P.	\$ 1,809	\$ -	\$ 1,809
Gresham Investment Management, LLC (Formerly Neuberger Berman)	\$ 1,359	\$ -	\$ 1,359
NGP Natural Resources XII, L.P.	\$ 3,068	\$ -	\$ 3,068
Wellington Management Company, LLP (Commodity)	\$ 1,474	\$ -	\$ 1,474
<b>Commodities Total</b>	<b>\$ 7,710</b>	<b>\$ -</b>	<b>\$ 7,710</b>
<b>MIDSTREAM ENERGY</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Salient Capital Advisors LLC	\$ 193	\$ -	\$ 193
Stein Roe Investment Counsel D/B/A/ Atlantic Trust	\$ 173	\$ 1,248	\$ 1,421
<b>Midstream Energy Total</b>	<b>\$ 365</b>	<b>\$ 1,248</b>	<b>\$ 1,613</b>
<b>INFRASTRUCTURE</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Blackstone Infrastructure Partners L.P.	\$ 4,911	\$ -	\$ 4,911
CIM Infrastructure Fund III, L.P.	\$ 18	\$ -	\$ 18
GCM Grosvenor Customized Infrastructure Strategies II, LP	\$ 306	\$ -	\$ 306
International Infrastructure Finance Company II, L.P.	\$ 678	\$ -	\$ 678
ISQ Global Infrastructure Fund III, L.P.	\$ 1,930	\$ -	\$ 1,930
ISQ KIO Co-Invest Fund, L.P.	\$ 6	\$ -	\$ 6
Strategic Partners Real Assets II, L.P.	\$ 1,186	\$ -	\$ 1,186
<b>Infrastructure Total</b>	<b>\$ 9,035</b>	<b>\$ -</b>	<b>\$ 9,035</b>
<b>TAIL RISK MITIGATION</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Capstone Commonwealth Fund LP	\$ 642	\$ -	\$ 642
<b>Tail Risk Mitigation Total</b>	<b>\$ 642</b>	<b>\$ -</b>	<b>\$ 642</b>
<b>DEFINED CONTRIBUTION</b>	<b>Base Fee</b>	<b>Profit Share</b>	<b>Total</b>
Defined Contribution	\$ 155	\$ -	\$ 155
<b>DC Total</b>	<b>\$ 155</b>	<b>\$ -</b>	<b>\$ 155</b>
<b>Grand Total</b>	<b>\$ 367,353</b>	<b>\$ 128,449</b>	<b>\$ 495,803</b>

Dollars in thousands  
Numbers may not add due to rounding



# Fiscal Year 2021 – 2022 Internal Fee Presentation

**Thomas A. Bauer, CFA - Deputy Chief Investment Officer, Traditional Investments**  
**Jarid M. Snyder, CTP – Manager**

**December 15, 2022**