

# Calculating Net-of-Fee Returns From a Notional Annual Fee Rate

99th Meeting of The Performance Measurement Forum

November 17-18, 2022

San Diego, CA

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Passionate about Performance

**Annual Fee: -2.40%** (market value)  
**Gross of Fee Return: 6.00%** Yearly  
**Net of Fee Return: ?** Yearly

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**Return**

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- A. 3.4560%**
- B. 3.4788%**
- C. 3.4838%**
- D. 3.6000%**

**Annual Fee: -2.40%** (market value)  
**Gross of Fee Return: 6.00%** Yearly  
**Net of Fee Return: ?** Yearly

<b>Fee Payment Frequency</b>	<b>Return</b>
<b>A. Annually</b>	<b>3.4560%</b>
<b>B. Quarterly</b>	<b>3.4788%</b>
<b>C. Monthly</b>	<b>3.4838%</b>
<b>D. Aritm</b>	<b>3.6000%</b>

### Annual Payment - Monthly Evaluation

Month	Begin \$	End \$	Fee %	Fee \$	End\$ -Fee	Gross%	Net % using CF	Net % Formula	Net % Formula Smoothed
Jan	1,000,000	960,000		-	960,000	-4.00%	-4.00%	-4.00%	<b>-4.19%</b>
Feb	960,000	988,800		-	988,800	3.00%	3.00%	3.00%	<b>2.79%</b>
Mar	988,800	969,024		-	969,024	-2.00%	-2.00%	-2.00%	<b>-2.20%</b>
Apr	969,024	988,404		-	988,404	2.00%	2.00%	2.00%	<b>1.79%</b>
May	988,404	978,520		-	978,520	-1.00%	-1.00%	-1.00%	<b>-1.20%</b>
Jun	978,520	1,017,661		-	1,017,661	4.00%	4.00%	4.00%	<b>3.79%</b>
Jul	1,017,661	1,048,191		-	1,048,191	3.00%	3.00%	3.00%	<b>2.79%</b>
Aug	1,048,191	1,037,709		-	1,037,709	-1.00%	-1.00%	-1.00%	<b>-1.20%</b>
Sep	1,037,709	1,079,218		-	1,079,218	4.00%	4.00%	4.00%	<b>3.79%</b>
Oct	1,079,218	1,068,425		-	1,068,425	-1.00%	-1.00%	-1.00%	<b>-1.20%</b>
Nov	1,068,425	1,047,057		-	1,047,057	-2.00%	-2.00%	-2.00%	<b>-2.20%</b>
Dec	1,047,057	1,060,000	<b>-2.40%</b>	<b>(25,440)</b>	1,034,560	1.24%	<b>-1.19%</b>	<b>-1.19%</b>	<b>1.03%</b>
				<b>(25,440)</b>		<b>6.00%</b>	<b>3.4560%</b>	<b>3.4560%</b>	<b>3.4560%</b>

OUCH!

**Annually**      **3.4560%** ←    
**Quarterly**    **3.4788%**  
**Monthly**        **3.4838%**

### Quarterly Payment - Monthly Evaluation

Month	Begin \$	End \$	Fee %	Fee \$	End\$ -Fee	Gross %	Net % using CF	Net % Formula	Net % Formula Smoothed
Jan	1,000,000	960,000		-	960,000	-4.00%	-4.00%	-4.00%	<b>-4.19%</b>
Feb	960,000	988,800		-	988,800	3.00%	3.00%	3.00%	<b>2.79%</b>
Mar	988,800	969,024	<b>-0.60%</b>	<b>(5,814)</b>	963,210	-2.00%	<b>-2.59%</b>	<b>-2.59%</b>	<b>OUCH!</b> <b>-2.20%</b>
Apr	963,210	982,474		-	982,474	2.00%	2.00%	2.00%	<b>1.80%</b>
May	982,474	972,649		-	972,649	-1.00%	-1.00%	-1.00%	<b>-1.20%</b>
Jun	972,649	1,011,555	<b>-0.60%</b>	<b>(6,069)</b>	1,005,486	4.00%	<b>3.38%</b>	<b>3.38%</b>	<b>OUCH!</b> <b>3.79%</b>
Jul	1,005,486	1,035,651		-	1,035,651	3.00%	3.00%	3.00%	<b>2.79%</b>
Aug	1,035,651	1,025,294		-	1,025,294	-1.00%	-1.00%	-1.00%	<b>-1.20%</b>
Sep	1,025,294	1,066,306	<b>-0.60%</b>	<b>(6,398)</b>	1,059,908	4.00%	<b>3.38%</b>	<b>3.38%</b>	<b>OUCH!</b> <b>3.79%</b>
Oct	1,059,908	1,049,309		-	1,049,309	-1.00%	-1.00%	-1.00%	<b>-1.20%</b>
Nov	1,049,309	1,028,323		-	1,028,323	-2.00%	-2.00%	-2.00%	<b>-2.20%</b>
Dec	1,028,323	1,041,034	<b>-0.60%</b>	<b>(6,246)</b>	1,034,788	1.24%	<b>0.63%</b>	<b>0.63%</b>	<b>OUCH!</b> <b>1.03%</b>
<b>Year</b>				<b>(24,528)</b>		<b>6.00%</b>	<b>3.4788%</b>	<b>3.4788%</b>	<b>3.4788%</b>

**Annually**      **3.4560%**  
**Quarterly**    **3.4788%** ←  
**Monthly**      **3.4838%**

Monthly Payment - Monthly Evaluation									
Month	Begin \$	End \$	Fee %	Fee \$	End\$ -Fee	Gross%	Net % using CF	Net % Formula	Net % Formula Smoothed
Jan	1,000,000	960,000	-0.20%	(1,920)	958,080	-4.00%	-4.19%	-4.19%	-4.19%
Feb	958,080	986,822	-0.20%	(1,974)	984,849	3.00%	2.79%	2.79%	2.79%
Mar	984,849	965,152	-0.20%	(1,930)	963,221	-2.00%	-2.20%	-2.20%	-2.20%
Apr	963,221	982,486	-0.20%	(1,965)	980,521	2.00%	1.80%	1.80%	1.80%
May	980,521	970,716	-0.20%	(1,941)	968,774	-1.00%	-1.20%	-1.20%	-1.20%
Jun	968,774	1,007,525	-0.20%	(2,015)	1,005,510	4.00%	3.79%	3.79%	3.79%
Jul	1,005,510	1,035,676	-0.20%	(2,071)	1,033,604	3.00%	2.79%	2.79%	2.79%
Aug	1,033,604	1,023,268	-0.20%	(2,047)	1,021,222	-1.00%	-1.20%	-1.20%	-1.20%
Sep	1,021,222	1,062,070	-0.20%	(2,124)	1,059,946	4.00%	3.79%	3.79%	3.79%
Oct	1,059,946	1,049,347	-0.20%	(2,099)	1,047,248	-1.00%	-1.20%	-1.20%	-1.20%
Nov	1,047,248	1,026,303	-0.20%	(2,053)	1,024,251	-2.00%	-2.20%	-2.20%	-2.20%
Dec	1,024,251	1,036,912	-0.20%	(2,074)	1,034,838	1.24%	1.03%	1.03%	1.03%
				(24,213)		6.00%	3.4838%	3.4838%	3.4838%

**Annually**      **3.4560%**  
**Quarterly**    **3.4788%**  
**Monthly**        **3.4838%** ←

**Annual Fee: -2.40%** (market value)  
**Gross of Fee Return: 6.00%** Yearly  
**Net of Fee Return: ?** Yearly

Fee Payment Frequency	Evaluation Frequency	
	Monthly	Daily
Annually	3.4560%	3.4560%
Quarterly	3.4788%	3.4788%
Monthly	3.4838%	3.4838%

Quarterly Payment - Daily Evaluation									
Day	Begin \$	End \$	Fee %	Fee \$	End\$ -Fee	Gross%	Net % using CF	Net % Formula	Net % Formula Smoothed
Jan 1	1,000,000	999,184		-	999,184	-0.08%	-0.08%	-0.08%	<b>-0.09%</b>
Jan 31	963,187	960,000		-	960,000	-0.33%	-0.33%	-0.33%	<b>-0.34%</b>
Feb 28	986,568	988,800		-	988,800	0.23%	0.23%	0.23%	<b>0.22%</b>
Mar 30	975,150	974,124		-	974,124	-0.11%	-0.11%	-0.11%	<b>-0.11%</b>
Mar 31	974,124	969,024	<b>-0.60%</b>	<b>(5,814)</b>	963,210	-0.52%	<b>-1.12%</b>	<b>-1.12%</b>	<b>OUCH!</b> <b>-0.53%</b>
Apr 1	963,210	963,461		-	963,461	0.03%	0.03%	0.03%	<b>0.02%</b>
Apr 30	980,938	982,474		-	982,474	0.16%	0.16%	0.16%	<b>0.15%</b>
May 31	975,591	972,649		-	972,649	-0.30%	-0.30%	-0.30%	<b>-0.31%</b>
Jun 29	1,008,809	1,010,330		-	1,010,330	0.15%	0.15%	0.15%	<b>0.14%</b>
Jun 30	1,010,330	1,011,555	<b>-0.60%</b>	<b>(6,069)</b>	1,005,486	0.12%	<b>-0.48%</b>	<b>-0.48%</b>	<b>OUCH!</b> <b>0.11%</b>
Jul 31	1,030,222	1,035,651		-	1,035,651	0.53%	0.53%	0.53%	<b>0.52%</b>
Aug 31	1,022,445	1,025,294		-	1,025,294	0.28%	0.28%	0.28%	<b>0.27%</b>
Sep 29	1,066,494	1,067,036		-	1,067,036	0.05%	0.05%	0.05%	<b>0.04%</b>
Sep 30	1,067,036	1,066,306	<b>-0.60%</b>	<b>(6,398)</b>	1,059,908	-0.07%	<b>-0.67%</b>	<b>-0.67%</b>	<b>OUCH!</b> <b>-0.08%</b>
Oct 31	1,046,289	1,049,309		-	1,049,309	0.29%	0.29%	0.29%	<b>0.28%</b>
Nov 30	1,029,834	1,028,323		-	1,028,323	-0.15%	-0.15%	-0.15%	<b>-0.15%</b>
Dec 30	1,040,621	1,040,721		-	1,040,721	0.01%	0.01%	0.01%	<b>0.00%</b>
Dec 31	1,040,721	1,041,034	<b>-0.60%</b>	<b>(6,246)</b>	1,034,788	0.03%	<b>-0.57%</b>	<b>-0.57%</b>	<b>OUCH!</b> <b>0.02%</b>
<b>Year</b>						<b>6.00%</b>	<b>3.4788%</b>		<b>3.4788%</b>

Annually 3.4560%

Quarterly 3.4788% ←

Monthly 3.4838%



Quarterly Payment - Monthly Evaluation									
Month	Begin \$	End \$	Fee %	Fee \$	End\$ -Fee	Gross %	Net % using CF	Net % Formula	Net % Formula Smoothed
Mar	988,800	969,024	-0.60%	(5,814)	963,210	-2.00%	-2.59%	-2.59%	-2.20%

<b>A</b>	<b>Annual nominal fee rate</b>	<b>-2.40%</b> Note negative sign
<b>P</b>	<b>Fee Payment Frequency</b> <ul style="list-style-type: none"> <li>1 Yearly</li> <li>4 Quarterly</li> <li>12 Monthly</li> <li>365 Daily</li> </ul>	<b>4</b> <b>Quarterly</b>
<b>F</b>	<b>Performance Evaluation Frequency</b> <ul style="list-style-type: none"> <li>1 Yearly</li> <li>4 Quarterly</li> <li>12 Monthly</li> <li>365 Daily (# or performance periods)</li> </ul>	<b>12</b> <b>Monthly</b>
<b>G<sub>p</sub></b>	<b>Gross return</b> for performance period "p"	<b>-2.00%</b>
<b>N<sub>p</sub></b>	<b>Net return</b> for performance period "p"	<b>-2.20%</b>

## Net Smoothed

$$N_p = (1 + G_p) \times \left(1 + \frac{A}{P}\right)^{P/F} - 1$$

## Example

$$-2.20\% = (1 + -2.00\%) \times \left(1 + \frac{-2.40\%}{4}\right)^{4/12} - 1$$

## Net Un-Smoothed \*On Payment period only

Make F=P

$$-2.59\% = (1 + -2.00\%) \times \left(1 + \frac{-2.40\%}{4}\right)^{4/4} - 1$$

Formula handles fee rate changes

**Annual Fee: -2.40%** (market value)  
**Gross of Fee Return: 6.00%** Yearly  
**Net of Fee Return: ?** Yearly

Fee Payment Frequency	Evaluation Frequency			
	Monthly	Daily	Direct	P
Annually	3.4560%	3.4560%	3.4560%	1
Quarterly	3.4788%	3.4788%	3.4788%	4
Monthly	3.4838%	3.4838%	3.4838%	12

### Formula – Yearly Direct

Make F=1

$$N_p = (1 + G_p) \times \left(1 + \frac{A}{P}\right)^{P/F} - 1$$

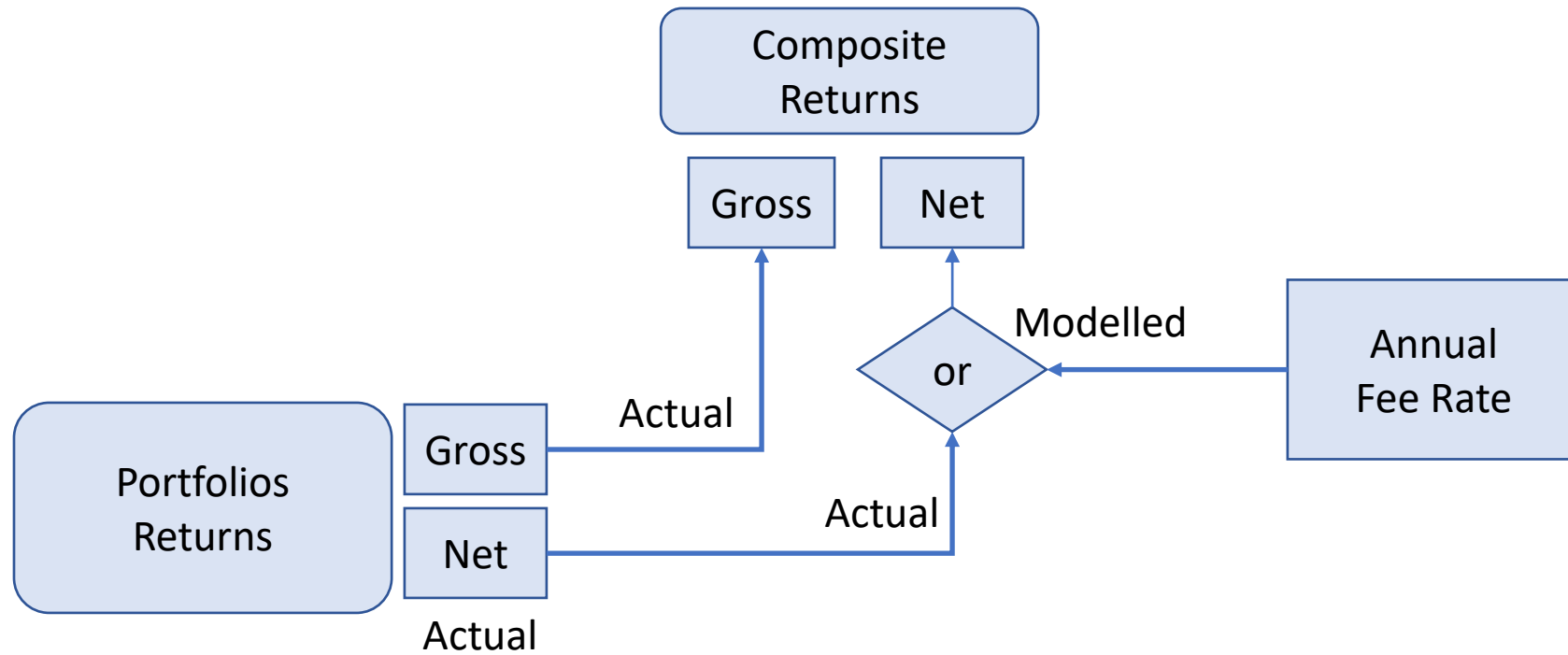
### Example

$$3.4788\% = (1 + 6.00\%) \times \left(1 + \frac{-2.40\%}{4}\right)^{4/1} - 1$$

Be care full of fee rate changes

# Composite Net Fee Returns

Actual vs Modelled



As of 31-Dec-2021



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Portfolio	YTD	2020	2019	2018	2017	2016	1 Year	2 Year	3 Year	4 Year	5 Year	Since Inception	Since Inception (Annualize)
Conservative Large Cap Strategy (Net)	20.19%	-8.24%	10.65%	-9.51%	-2.81%	26.36%	20.19%	5.02%	6.86%	2.51%	1.42%	60.20%	4.34%
Conservative Large Cap Strategy (Gross)	23.12%	-6.00%	13.34%	-7.30%	-0.44%	29.44%	23.12%	7.58%	9.47%	5.01%	3.90%	109.18%	6.88%
Internal Measures													
Return (Gross)	23.12%	-6.00%	13.34%	-7.30%	-0.44%	29.44%	23.12%	7.58%	9.47%	5.01%	3.90%	109.18%	6.88%
Portfolio P1	24.02%	-8.41%	7.75%	-12.98%	-8.05%	33.78%	24.02%	6.58%	6.97%	1.59%	-0.42%	99.09%	6.41%
Portfolio P2	22.30%	-4.68%	18.45%	-5.26%	3.05%	27.68%	22.30%	7.97%	11.35%	6.95%	6.16%	130.48%	7.82%
Portfolio P3	22.44%	-2.39%	12.56%	-2.29%	11.19%	22.17%	22.44%	9.32%	10.39%	7.08%	7.89%	101.66%	6.53%
Portfolio P4	23.41%	-5.41%	8.96%	-9.56%	-2.50%	35.83%	23.41%	8.05%	8.35%	3.56%	2.32%	92.02%	6.06%
Portfolio P5	22.94%	-7.15%	17.13%	-6.20%	-0.95%	29.76%	22.94%	6.84%	10.16%	5.82%	4.43%	112.75%	7.05%
Portfolio P6	23.97%	-7.97%	13.84%	-6.82%	3.80%	24.67%	23.97%	6.81%	9.10%	4.88%	4.67%	95.80%	6.25%
Portfolio P7					-5.06%	31.01%							
Market Value (Begin)	92,839,381	98,767,338	87,138,825	93,968,789	110,717,496	85,533,877	92,839,381	98,767,338	87,138,825	93,968,789	93,585,395	55,471,273	
Market Value (End)	114,299,401	92,839,381	98,767,338	87,138,825	110,233,409	110,717,496	114,299,401	114,299,401	114,299,401	114,299,401	114,299,401	114,299,401	
Weight	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
XYZ Firm													
Dispersion Measures													
External Measures													
Benchmark B1	24.39%	-9.07%	7.27%	-12.33%	-9.45%	35.48%	24.39%	6.36%	6.66%	1.56%	-0.75%	125.82%	7.63%
Excess Return (Gross)	-1.28%	3.06%	6.08%	5.02%	9.01%	-6.04%	-1.28%	2.61%	9.83%	15.21%	24.73%	-16.64%	
Months	12	12	12	12	12	12	12	24	36	48	60	133	
Average of monthly excess returns	-0.09%	0.24%	0.43%	0.47%	0.74%	-0.43%	-0.09%	0.07%	0.19%	0.26%	0.36%	-0.08%	
Tracking Error	0.84%	1.09%	1.51%	1.46%	1.69%	1.68%	0.84%	0.99%	1.20%	1.28%	1.38%	1.40%	
Annualized tracking error	2.93%	3.79%	5.24%	5.05%	5.85%	5.83%	2.93%	3.43%	4.16%	4.42%	4.79%	4.84%	
Information Ratio	-0.10	0.22	0.28	0.32	0.44	-0.25	-0.10	0.08	0.16	0.21	0.26	-0.05	



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01-Jan-21 to 31-Dec-21

Powered by Robust Technologies

Portfolio	2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Conservative Large Cap Strategy (Net)	20.19%	2.72%	7.76%	4.89%	4.70%	-1.59%	1.45%	-0.46%	-2.99%	3.74%	-5.42%	5.13%	-0.58%
Conservative Large Cap Strategy (Gross)	23.12%	2.93%	7.98%	5.10%	4.91%	-1.39%	1.66%	-0.26%	-2.80%	3.95%	-5.23%	5.34%	-0.38%
<b>Portfolios - Return</b>													
Portfolio P1	24.02%	5.17%	7.21%	4.19%	6.23%	-1.44%	1.42%	0.39%	-1.68%	2.40%	-5.41%	5.06%	-1.01%
Portfolio P2	22.30%	2.55%	7.14%	5.63%	3.99%	-1.45%	1.73%	-0.38%	-3.20%	5.60%	-6.01%	5.69%	-0.08%
Portfolio P3	22.44%	1.99%	8.05%	5.11%	4.11%	-0.78%	0.96%	-0.01%	-3.80%	4.18%	-4.75%	5.55%	0.60%
Portfolio P4	23.41%	1.81%	8.18%	5.23%	5.52%	-2.02%	1.28%	0.19%	-2.79%	3.80%	-4.08%	5.02%	-0.13%
Portfolio P5	22.94%	2.81%	8.88%	5.48%	4.96%	-1.34%	2.63%	-1.26%	-2.69%	4.03%	-5.32%	4.50%	-0.94%
Portfolio P6	23.97%	3.11%	8.49%	4.82%	4.88%	-1.51%	1.65%	-0.15%	-2.57%	3.42%	-5.43%	6.49%	-0.63%
<b>Portfolios - Market Value (Begin)</b>													
<b>Portfolios - Market Value (End)</b>													
<b>Internal Dispersion Measures</b>													
Num. Portfolios - Entire Period	6												
Num. Portfolios - Period End	6	6	6	6	6	6	6	6	6	6	6	6	6
Market Value - Period End		95,557,134	103,180,580	108,442,782	113,762,739	112,179,067	114,039,391	113,743,609	110,560,574	114,926,460	108,920,592	114,736,341	114,299,401
Minimum	22.30%	1.81%	7.14%	4.19%	3.99%	-2.02%	0.96%	-1.26%	-3.80%	2.40%	-6.01%	4.50%	-1.01%
Maximum	24.02%	5.17%	8.88%	5.63%	6.23%	-0.78%	2.63%	0.39%	-1.68%	5.60%	-4.08%	6.49%	0.60%
Average	23.18%	2.90%	7.99%	5.08%	4.95%	-1.42%	1.61%	-0.20%	-2.79%	3.90%	-5.17%	5.38%	-0.37%
Variance	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%
Standard Deviation	0.68%	1.11%	0.64%	0.47%	0.77%	0.36%	0.52%	0.53%	0.64%	0.96%	0.61%	0.63%	0.56%
<b>Firm Assets</b>													
<b>Benchmark</b>													
Benchmark B1	24.39%	4.52%	7.82%	4.53%	6.14%	-1.06%	1.49%	0.57%	-2.38%	2.30%	-5.22%	5.25%	-1.11%
Excess Return	-1.28%	-1.59%	0.16%	0.57%	-1.23%	-0.34%	0.17%	-0.83%	-0.41%	1.65%	-0.01%	0.09%	0.73%



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Base: CAD

Year	Gross-Fee Return	Net-Fee Return	End Market Value	Bench. Return	No. of Port.	Standard Deviation	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2011	-2.05%	-4.38%	61,904,291	2.08%	7	2.18%	6.39%	-5.08%	-3.90%	0.93%
2012	12.09%	9.42%	69,387,357	12.07%	7	1.78%	1.48%	-2.58%	8.58%	4.42%
2013	3.68%	1.21%	71,938,781	6.79%	7	1.34%	-1.14%	-0.24%	5.41%	-0.27%
2014	10.51%	7.88%	79,500,969	16.43%	7	2.45%	6.89%	3.89%	-0.34%	-0.14%
2015	7.59%	5.03%	85,533,877	24.20%	7	7.90%	3.65%	-3.02%	-0.37%	7.43%
2016	29.44%	26.36%	110,717,496	35.48%	7	4.49%	12.82%	5.98%	-1.37%	9.76%
2017	-0.44%	-2.81%	110,233,409	-9.45%	7	5.93%	0.89%	-0.06%	-2.86%	1.65%
2018	-7.30%	-9.51%	87,138,825	-12.33%	6	3.37%	-3.25%	3.41%	-9.00%	1.81%
2019	13.34%	10.65%	98,767,338	7.27%	6	3.90%	3.83%	0.33%	2.41%	6.24%
2020	-6.00%	-8.24%	92,839,381	-9.07%	6	2.09%	-17.57%	7.96%	-3.67%	9.65%
2021	23.12%	20.19%	114,299,401	24.39%	6	0.68%	16.81%	5.16%	0.78%	-0.55%
2022	4.54%	3.91%	119,487,822	4.51%	6	1.10%	4.54%	-	-	-

Model fee rate can change over time

### Compliance Statement

XYZ Asset Management Company has prepared and presented this report in compliance with the Glocal Investment Performance Standards (GIPS)

### Definition of the Firm

### GIPS Disclaimer

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XYZ Asset management Company is an independent investment management firm established in 1997.

# Questions ? Comments !

Feel free to contact me

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