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RETIREMENT CASE STUDY
PORTFOLIO RETURNS

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Average vs Actual Returns

One of the challenges facing investing and retirement is the use of average returns vs the actual experience.

Average return is the easy part it's simple math. Actual return is the money part. The chart below illustrates the difference between average and actual returns. The returns chosen were extreme to illustrate the differences. The key take away from this should be that the average return can hide the bad numbers. Whereas the actual return would give you the money experience. Imagine being told the average return for your account is 25%, yet when you look at your statement it is 0%.

Sequence of returns simply means the order in which your portfolio experiences the returns. In the accumulation years, the sequence of returns does not matter as there is no money being drawn from the account. Where sequence of returns plays a critical role is when you start to draw your money for retirement.

Now that we've looked at the average and actual returns, let's extend the argument to a case study and the sequence of returns.

Average Return vs. Actual Return

Initial Balance				\$50,000
Year	Annual Return	Annual Gain/(Loss)	End of Year Account Balance	
1	100.00%	\$50,000	\$100,000	edit
2	-50.00%	-\$50,000	\$50,000	edit
3	100.00%	\$50,000	\$100,000	edit
4	-50.00%	-\$50,000	\$50,000	edit

Add

Average Return: 25.00%

Actual Return: 0.00%

Retirement Case Study

Accumulation Years

The figure below is taken from a client case study. In this situation the client wanted a retirement account of \$1MM from which they could draw 4% indexed for inflation starting at age 65. These market returns are for the 20-year period 1997-2017 for the S&P 500.

What you want to see in this figure is that on the left-hand side of the chart the first three years from the account were positive. On the left-hand side of the account, all that was done was those first three positive years were shifted the end of the return cycle and the following three negative years were brought forward. The result was in either case the account achieved the \$1MM balance at the end of age 64 regardless in which sequence the returns were received.

Accumulation Years

Historic Return Sequence				Shuffled Return Sequence -3				
Withdrawal	Rate of Return	EOY Balance	Age	Withdrawal	Rate of Return	EOY Balance	Difference	
\$0	31.01%	\$433,494	45	\$0	-10.14%	\$297,334	-\$136,160	
\$0	26.69%	\$549,194	46	\$0	-13.04%	\$258,562	-\$290,632	
\$0	19.51%	\$656,341	47	\$0	-23.37%	\$198,136	-\$458,205	
\$0	-10.14%	\$589,788	48	\$0	26.38%	\$250,404	-\$339,384	
\$0	-13.04%	\$512,880	49	\$0	8.99%	\$272,916	-\$239,964	
\$0	-23.37%	\$393,020	50	\$0	3.00%	\$281,103	-\$111,917	
\$0	26.38%	\$496,699	51	\$0	13.62%	\$319,389	-\$177,309	
\$0	8.99%	\$541,352	52	\$0	3.53%	\$330,664	-\$210,688	
\$0	3.00%	\$557,592	53	\$0	-38.49%	\$203,391	-\$354,201	
\$0	13.62%	\$633,536	54	\$0	23.45%	\$251,087	-\$382,450	
\$0	3.53%	\$655,900	55	\$0	12.78%	\$283,176	-\$372,725	
\$0	-38.49%	\$403,444	56	\$0	0.00%	\$283,176	-\$120,269	
\$0	23.45%	\$498,052	57	\$0	13.41%	\$321,149	-\$176,903	
\$0	12.78%	\$561,703	58	\$0	29.60%	\$416,210	-\$145,493	
\$0	0.00%	\$561,703	59	\$0	11.39%	\$463,616	-\$98,087	
\$0	13.41%	\$637,027	60	\$0	-0.73%	\$460,231	-\$176,796	
\$0	29.60%	\$825,587	61	\$0	9.54%	\$504,138	-\$321,450	
\$0	11.39%	\$919,622	62	\$0	31.01%	\$660,471	-\$259,151	
\$0	-0.73%	\$912,909	63	\$0	26.69%	\$836,750	-\$76,158	
\$0	9.54%	\$1,000,000	64	\$0	19.51%	\$1,000,000	\$0	

Retirement Case Study

Decumulation Years

Now, let's look and see what happens when you need to draw money from the account. Same return sequence as the previous figure, the difference is that there is a 4% withdrawal indexed at 8% to keep pace with the cost of living.

The average rate of return for both sides of the accounts is 7.36%. However, the experience for the client is quite different due to the withdrawals needed.

The account on the left-hand side has a balance of over \$1MM at age 84 and the other account has been depleted by age 82. At age 82 the difference between the two experiences is \$1.15MM. Return Sequence is a real risk, and you need to have a plan as to how to address it in retirement.

Distribution Years

First Year Withdrawal: \$40,000
Average Return: 7.36%

Historic Return Sequence				Shuffled Return Sequence -3			
Withdrawal	Rate of Return	EOY Balance	Age	Withdrawal	Rate of Return	EOY Balance	Difference
\$40,000	31.01%	\$1,257,696	65	\$40,000	-10.14%	\$862,656	-\$395,040
\$41,200	26.69%	\$1,541,179	66	\$41,200	-13.04%	\$714,338	-\$826,841
\$42,436	19.51%	\$1,791,147	67	\$42,436	-23.37%	\$514,879	-\$1,276,269
\$43,709	-10.14%	\$1,570,248	68	\$43,709	26.38%	\$595,464	-\$974,784
\$45,020	-13.04%	\$1,326,338	69	\$45,020	8.99%	\$599,929	-\$726,410
\$46,371	-23.37%	\$980,839	70	\$46,371	3.00%	\$570,164	-\$410,674
\$47,762	26.38%	\$1,179,222	71	\$47,762	13.62%	\$593,553	-\$585,669
\$49,195	8.99%	\$1,231,617	72	\$49,195	3.53%	\$563,574	-\$668,043
\$50,671	3.00%	\$1,216,374	73	\$50,671	-38.49%	\$315,487	-\$900,887
\$52,191	13.62%	\$1,322,745	74	\$52,191	23.45%	\$325,039	-\$997,706
\$53,757	3.53%	\$1,313,784	75	\$53,757	12.78%	\$305,952	-\$1,007,832
\$55,369	-38.49%	\$774,051	76	\$55,369	0.00%	\$250,583	-\$523,468
\$57,030	23.45%	\$885,162	77	\$57,030	13.41%	\$219,508	-\$665,654
\$58,741	12.78%	\$932,037	78	\$58,741	29.60%	\$208,353	-\$723,684
\$60,504	0.00%	\$871,533	79	\$60,504	11.39%	\$164,690	-\$706,843
\$62,319	13.41%	\$917,730	80	\$62,319	-0.73%	\$101,624	-\$816,106
\$64,188	29.60%	\$1,106,190	81	\$64,188	9.54%	\$41,007	-\$1,065,184
\$66,114	11.39%	\$1,158,541	82	\$41,007	31.01%	\$0	-\$1,158,541
\$68,097	-0.73%	\$1,082,484	83		26.69%	\$0	-\$1,082,484
\$70,140	9.54%	✓ \$1,108,921	84		19.51%	✓ \$0	-\$1,108,921

Summary

When reviewing your retirement plans you should keep in mind the return assumptions made in the plan (average vs actual) as well as the sequence of those returns.

This is where a financial strategy on how to draw income from which sources matter. Rather than relying on a simple spread sheet and some input for returns, a structured income stream may be the solution to keep you sleeping at night.

After looking at how returns can affect your retirement there needs to be serious consideration as to how to manage it

What do you want your financial future to look like? Actually, let's rephrase the question and you can finish the sentence with the choices below:

I want my retirement lifestyle to be...

- 1.Better than it is today.
- 2.At least as good as today.
- 3.Worse than it is today.

If you're like most people, you probably chose #1 or #2, nobody wants to be worse off.

PMWS offers a no obligation free view of your retirement situation. We call it a 20/20 in 20. This means, together we will answer those 4 retirement questions outlined to see what your current GPS position is and how far along you are to your retirement journey.

Unlike our competition, once you have completed to 20/20 in 20 we will not be constantly calling you to become a client. We will let you decide when you are ready to come work together. In the meantime, you will have access to our resources to build your knowledge and confidence when it comes to your finances.



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