

Investment Fund 121 (US Bond)

5 Year Review - Jan 2018 to Dec 2022

Just Analytics

Spend Wisely

www.justanalytics.ca

Principles of Investment Management

1. Active Managers get higher fees than a 'pure' track the Index ETF because they are supposed to provide higher net returns.
2. These higher returns should not be purely a result of your Investment Fund (IF) taking on more risk.
3. These higher returns should not be purely a result of 'luck' (random) as this is not sustainable for your Investment Fund.

Our Approach

1. We utilize the science of Analytics.
2. This will tell you if it is 'just luck' or 'skill' (i.e., a better methodology) when your Investment Fund (IF) outperforms the market.
3. I want your pension plan funds to out perform the market!
4. Hire Investment Funds that are most likely to outperform the market & have reasonable fees - Spend Wisely!
5. Custom design a portfolio with Tier 1 Investment Funds, and a low risk, low cost Bond ETF, to achieve a portfolio with both less risk and higher rate of return / greater investment growth.

The Index

The first step in the analytics is to determine the appropriate Index against which to compare your Investment Fund (IF).

The Bloomberg US Aggregate Bond Index is recognized as an excellent broad base index, it had a return of -13.21% in 2022.



Which Analytics?

Excess Return

- ▶ Are you receiving enough return for the level of risk in the portfolio?

Downside Risk

- ▶ How is your Investment Fund performing when the Index is struggling?

Underperformance Ratio

- ▶ How often does your Fund outperform the Index in a 5 year period?

Likelihood to Outperform - the most critical in my opinion

- ▶ Is it random (50% ish) or 'almost science' (85% ish)?
- ▶ Is it sustainable at the 85% level over 5 years?

Growth of \$100 (net of fees)

- ▶ Is your Investment Fund at least 10% ahead of the Index(es) after 5 years?

Excess Return

	IF 121	Bbg US Agg Bond	T.E. Data
Avg. Monthly Returns	1.03	0.01	
Avg. Monthly Std. Dev'n.	4.61	1.45	
Avg. Annual Return	12.35	0.15	
Avg. Annual Std. Dev'n.	15.96	5.02	
Intercept	1.01		
Slope (Beta)	1.24		
Expected Return	-0.52		
Excess Return (Alpha)	12.88		
Tracking Error	14.99		4.33
Information Ratio	0.86		

- This Investment Fund has generated an average annual excess return (risk adjusted) of 12%+ over the past 5 years as of 31 Dec 2022.

Downside Risk

Date	IF 121	Bbg US Agg Bond	Difference
	-5.77	-4.32	-1.45
	-7.18	-3.79	-3.38
	0.67	-2.83	3.50
	1.74	-2.78	4.52
	-8.04	-2.15	-5.89
Sum	-18.58	-15.87	-2.71

- ▶ Stress test - how did the Investment Fund perform when the Index had its worst months (i.e., the Index lost at least 1%).
- ▶ The Tier 1 fund underperformed the Index by 271 basis points during those worst five months.

Outperformance Ratio (5 years)

Annual Return	IF 121	Bmg US Agg Bond
2018	3+	0.01
2019	25+	8.72
2020	55+	7.51
2021	5+	-1.54
2022	-19	-13.01

- ▶ Even the best performing funds will regularly under perform the Index;
- ▶ Quartile 1 fund will typically underperform the Index in 2 of 5 years (Mercer).
- ▶ IF 121 has out performed the Bmg Bond Index for 4 of 5 years - an excellent result. IF 121 results are rounded.

Performance - is it 'Random' or 'Skill'?



1. If your Fund out performs the market, they will tell you it is 'skill'.
2. If your Fund under performs the market, they will tell you it is 'bad luck'.
3. Actually, they will compare themselves to a 'benchmark', and tell you they outperformed (a lie).
4. The reality is that either statement (skill or bad luck) could be true or false.
5. How do you know?
6. The 'science of Analytics' can determine if out performance (or under performance) is random (luck) or skill (better process / meaningful).
7. The analytics looks at the returns, the various risk profiles, the correlation, and then runs a regression analysis to determine the probability of the results being more than just luck.

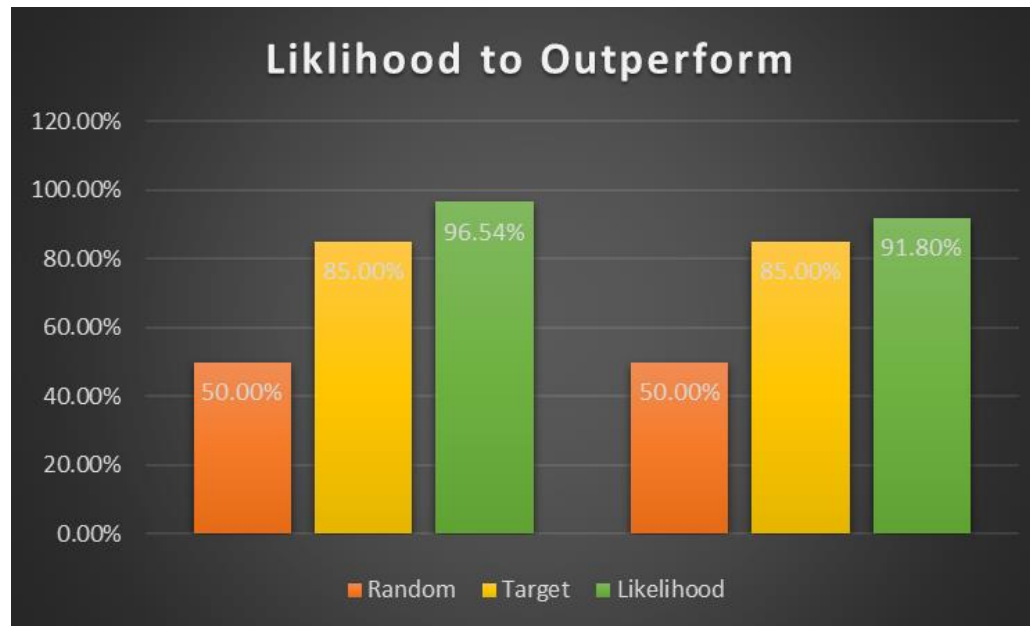


‘Random’ or ‘Skill’ – What is the Threshold?

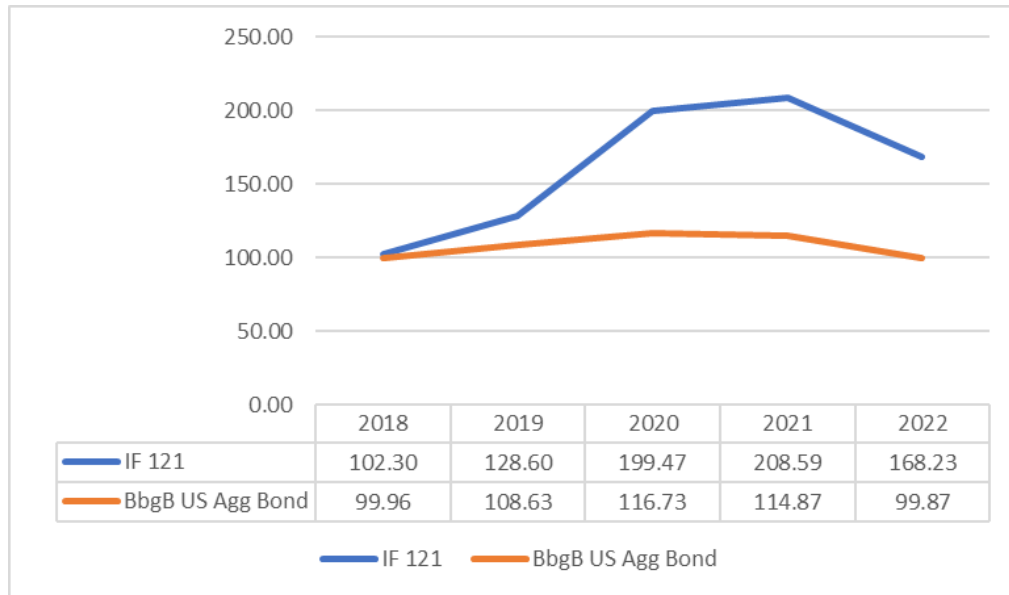
1. Scientists expect a 95% confidence level, it is a very rigorous standard.
2. I look for a 85% confidence level over 3 and 5 years, and 80% over 10 years.
3. I believe it is worth reviewing if the results are within 5% of target (e.g., 76% confidence level over 10 years).
4. We know that Investment Fund 121 outperformed the Index over the past 5 years based on having generated excess return. Was it luck or skill? That is the critical question...

Repeatability - 3 and 5 years

- We are very confident (91%+ for 3 years and 96% for 5 years) that IF 121 results are statistically significant - likelihood to outperform.



Value of \$100 (net of fees) - 5 years



- ▶ The Bond Index was flat, the IF 121 grew to \$168

- ▶ What are the respective CAGR? (next slide)

Compound Annual Growth Rate

- ▶ The Tier 1 fund had a CAGR that was 10% per annum higher.

Annual Return	Value IF 121	Value BbgB
5 year return	68.23%	-0.13%
CAGR	10.96	-0.03

- ▶ This is how you make money and reduce your risk at the same time!



Exec Summary - Update

1. Investment Fund 121 generated an average of 1200+ bp of excess return per annum, on a risk adjusted basis, over the 5 year period.
2. The Value at Risk results were negative by 271 basis points.
3. Fund 121 out performed the Index in 4 of 5 years.
4. There is better than a 91% likelihood that the outperformance is not random (i.e., a better methodology).
5. IF 121 generated a net return that was much better than the Bond Index.
6. A very good US Bond Investment Fund - it is Tier One.

Review Meeting

- ▶ Please call me at 403 818 0671 or email me at greg@justanalytics.ca to book our review meeting.
- ▶ Please let me know if you have any questions.
- ▶ Thank you for choosing Just Analytics.ca!





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