

A Method for Measuring Risk-Adjusted Alpha

(or... The benchmark you use when you don't have a benchmark)

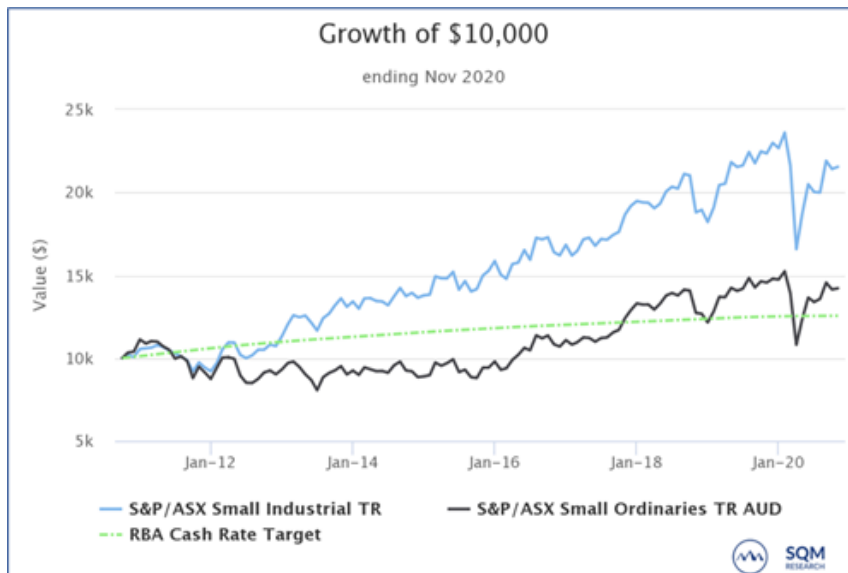
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Assessing a Fund's performance, both nominal and risk-adjusted, has a variety of challenges. This notes briefly opines on one of them – judging performance when there is a significant mismatch between the risk profile of the Fund and the risk profile of the “benchmark” or “performance target”.

Fund Managers choose benchmarks or performance targets that are put forward as a guidepost for investors to judge whether or not the Manager is doing a “good” job. Whether or not there is selection bias in this process is not the subject of this note (although it is an interesting topic).

Difficulties arise with the effectiveness of a benchmark when there are large **structural differences** between it and the Fund being assessed. These differences may arise with the constituents of a benchmark, their weights, sector breakdowns or any number of structural metrics. For example, measuring a large-cap equity fund against a micro-cap index would generally not be seen as valid or meaningful. This is an extreme example that is thankfully not often seen. What is more often seen are differences that range from minor (and not really statistically significant) to more nuanced but meaningful in impact. A common example of the latter is when a small-cap Fund that typically has little or no resource exposure uses the Small Ordinaries Index as its benchmark. There are a large number of small cap funds that consist largely, or entirely, of industrial stocks, not resources. Choosing the Small Ordinaries Index can set the bar pretty low in terms of outperformance degree-of-difficulty. The chart below shows a pretty substantial gap between the Small Ordinaries and the Small Industrials.



Equally, or possibly more, difficult are situations where the risk/return profile of the Fund and its benchmark are far apart. The most common examples of this are risky asset class funds (e.g. equities or property) that are compared to benchmarks or “performance targets” that are virtually risk-free such as cash, banks bills or CPI.

For example, it is not uncommon for an absolute return equity fund to benchmark itself to the RBA Cash Rate. While there are arguments in favour of such an arrangement, the obvious and glaring problem is comparing a fund with say, 10 to 15% volatility to a benchmark with **zero** volatility. Apples and oranges anyone?

One counter to this problem is to put a risk premium on the benchmark to make it more of a level playing field. This swaps one problem for another. The Manager might say that **Cash +4%** is a hurdle that accurately reflects the risk profile of the Fund. Your skeptical answer might be **“says who?”**. Just because the Manager says its right doesn't make it so. You will naturally need to try to figure out for yourself what is the right risk premium that reflects the risks inherent in the Fund.

There are multiple methods to try and triangulate an answer to this question. Here we present one method that is relatively straightforward in its theory and calculation. We don't pretend it's the only, or best method. It is just one more interesting tool.

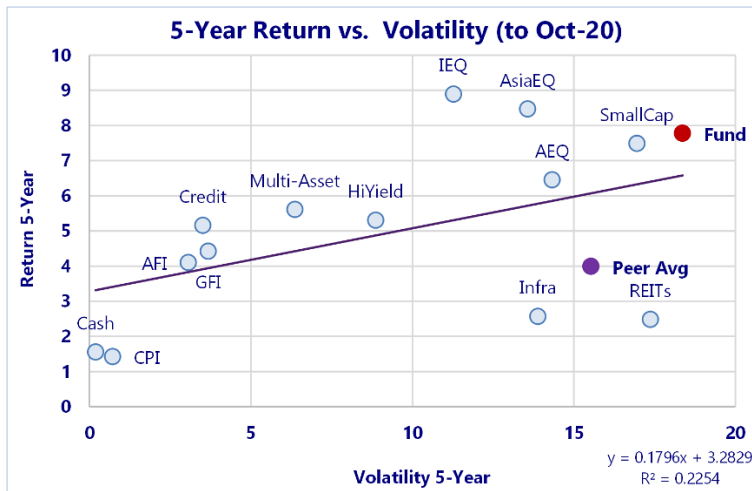
It basically involves comparing the Fund to a statistically regressed line-of-best-fit for “market” risk and return. This “market” risk and return we will call the Capital Market Line (CML). It is a collection of traditional asset classes that span right across the risk spectrum from cash (low risk) to small caps (high risk).

The linear regression lines that fits this collection of risk/return points represents a kind of “market price of risk” i.e. how much return should you expect for a certain amount of risk (volatility).

This means that the **vertical distance** from the Fund's “dot” to the CML represents the risk-adjusted alpha, or value added over and above the risk being taken (as measured by volatility).

Using this method in the chart below shows that the (un-named) Australian equity fund returned 7.78% p.a. against a CML “market” expectation of 6.70% return to compensate for a volatility of 18%. Thus, a risk-adjusted alpha of +1.08% p.a.

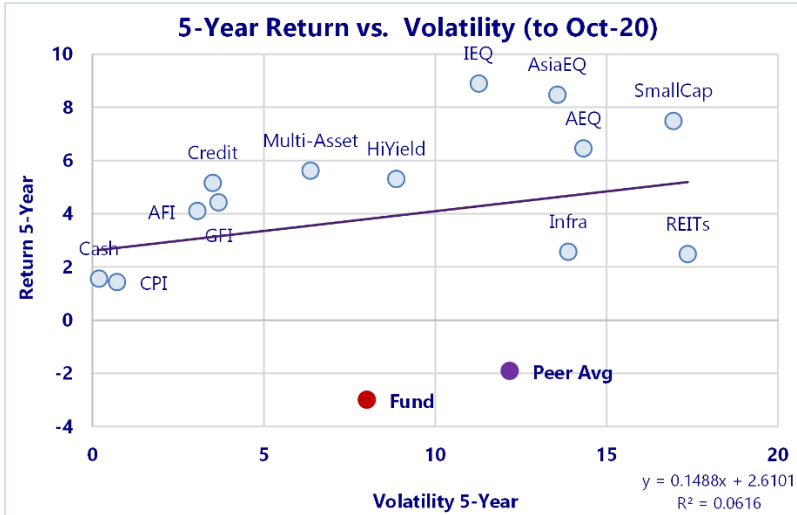
While this method is not perfect, its attraction is that it can be used for any fund in any market or mix of markets as it is benchmark and asset class agnostic.



Mid to Large Cap AEQ Fund

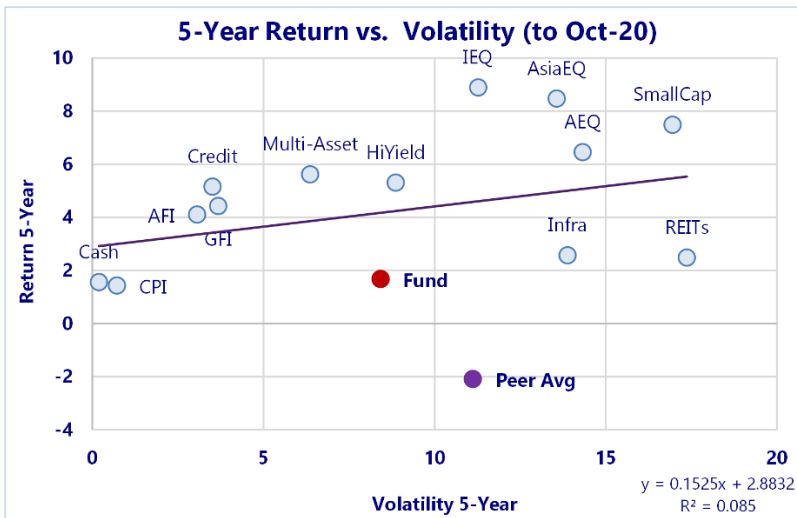
	Capital Market Line	
Intercept	3.3017	
Slope	0.1852	
	Fund	Peer Avg
Actual	7.7834	3.9894
Model	6.7017	6.1768
Alpha to CML	1.0817	-2.1874

The following are a handful of examples across various types and classes of funds to illustrate the point.



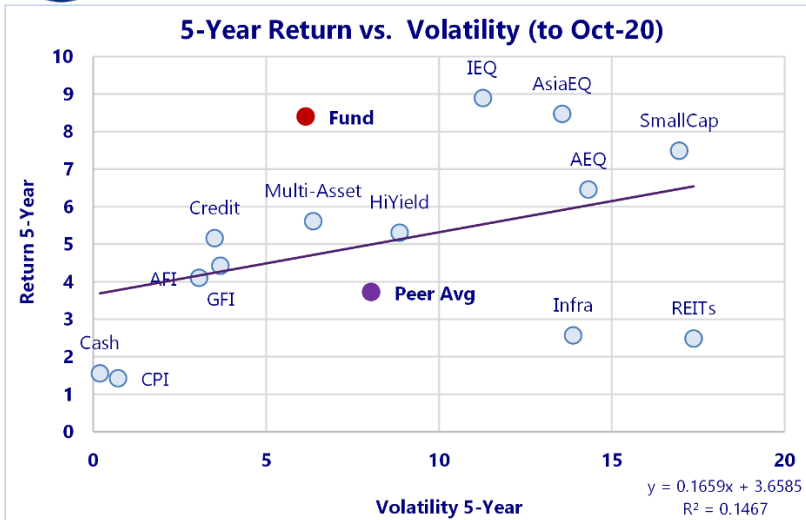
Managed Futures

	<u>Capital Market Line</u>	
Intercept	3.3017	
Slope	0.1852	
	<u>Fund</u>	<u>Peer Avg</u>
Actual	-2.9938	-1.9094
Model	4.7838	5.5553
Alpha to CML	-7.7777	-7.4647



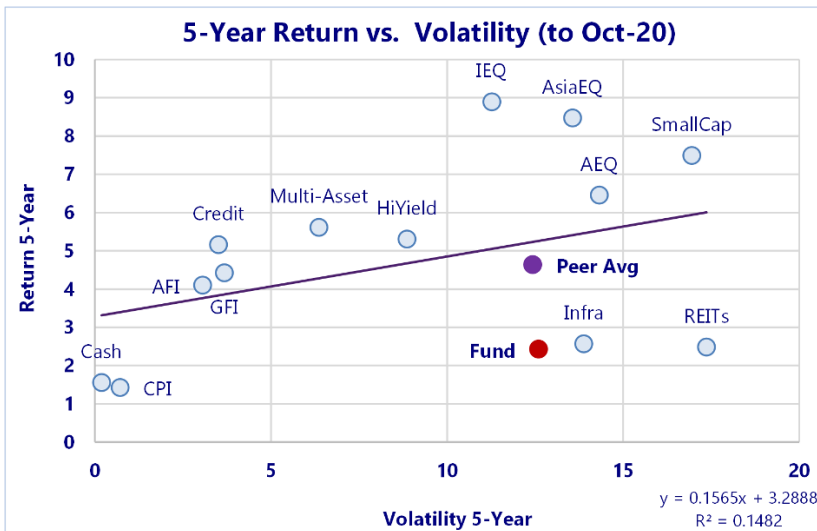
Managed Futures

	<u>Capital Market Line</u>	
Intercept	3.3017	
Slope	0.1852	
	<u>Fund</u>	<u>Peer Avg</u>
Actual	1.6766	-2.0892
Model	4.8606	5.3593
Alpha to CML	-3.1840	-7.4485



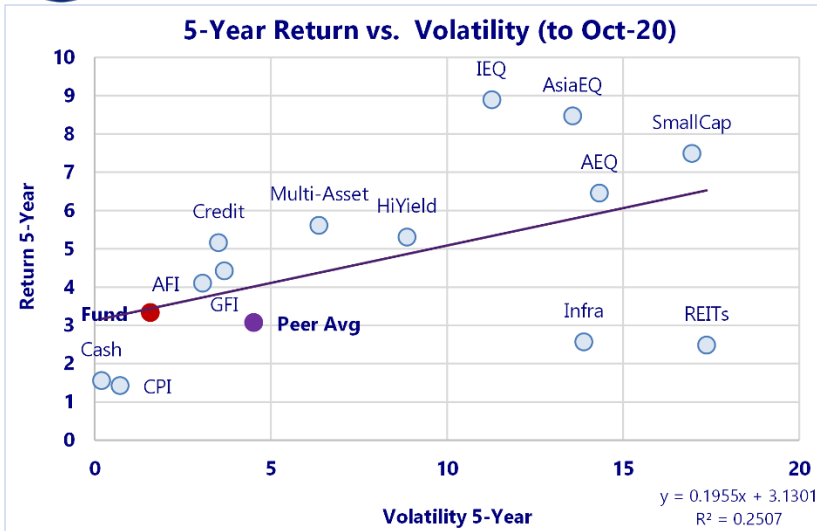
High Yield Credit

	<u>Capital Market Line</u>	
Intercept	3.3017	
Slope	0.1852	
	<u>Fund</u>	<u>Peer Avg</u>
Actual	8.4004	3.7226
Model	4.4392	4.7909
Alpha to CML	3.9612	-1.0683



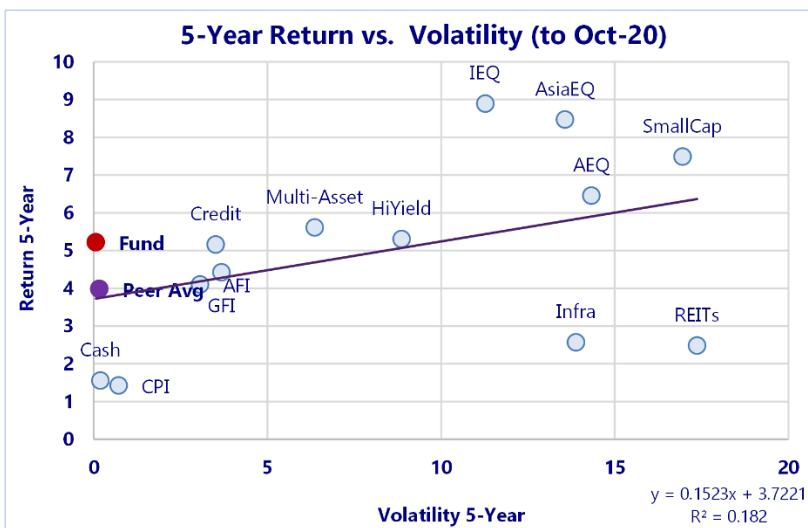
Event-Driven Hedge Fund

	<u>Capital Market Line</u>	
Intercept	3.3017	
Slope	0.1852	
	<u>Fund</u>	<u>Peer Avg</u>
Actual	2.4274	4.6376
Model	5.6353	5.6043
Alpha to CML	-3.2079	-0.9667



Australian Fixed Income

	<u>Capital Market Line</u>	
Intercept	3.3017	
Slope	0.1852	
	<u>Fund</u>	<u>Peer Avg</u>
Actual	3.3305	3.0711
Model	3.5930	4.1370
Alpha to CML	-0.2625	-1.0658



Mortgage Trust (low volatility but not zero risk)

	<u>Capital Market Line</u>	
Intercept	3.3017	
Slope	0.1852	
	<u>Fund</u>	<u>Peer Avg</u>
Actual	5.2214	3.9882
Model	3.3127	3.3318
Alpha to CML	1.9087	0.6565



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