

Methodology

Qi's machine learning process derives fair model value for any security relative to its prevailing macro regime. Qi's Fair Value Gap (FVG) is the difference between spot market price and model value. These FVGs can be used as trading signals to generate alpha. Qi Labs back-tested the efficacy of model's short term FVGs (83d look back) across its rates universe. This universe includes interest rate swaps, spreads, forwards, flies, Govt bonds, asset swaps and cross market spreads in US, Australian, UK, European, Canadian and Japanese markets. The sample period tested runs from 2nd January 2012 to 25th July 2019.

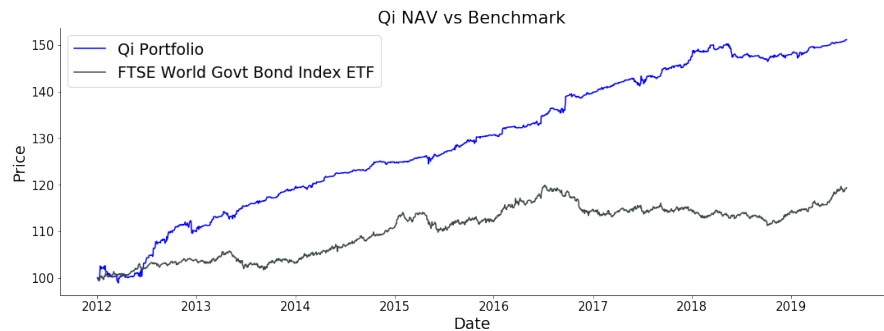
To test these trading signals, Qi ran a portfolio made up of assets with the largest FVGs. Every day, all rates models were filtered for large valuation gaps and high R-Squared. The R-Squared (model confidence) indicates how much of the variance in the asset price is explained by the factor set of 30-35 macro variables over an 83d rolling look back period. It is essentially a measure of confidence in the model price. Qi defines a period where R-Squared is at least 65% as a macro driven regime. An asset can only be traded if it is in a macro regime.

Positions are then opened in the 5 assets with the largest FVGs, equally weighted, and without opening multiple trades in the same currency. The portfolio is then re-balanced daily, in search for the next group of assets with the largest valuation gaps. Positions are closed if the asset either falls out of regime ($R - Squared < 65\%$), or if it no longer has one of the strongest signals. There is no discretionary overlay or risk management employed, purely the reliability of Qi's Fair Value Gaps as trading signals is being tested. Trading costs have also not been considered.

The graph below shows the NAV of Qi's test portfolio, plotted alongside our benchmark: the FTSE World Govt Bond Index ETF. Qi's portfolio grew 51% over the period, compared to 19% for the benchmark.

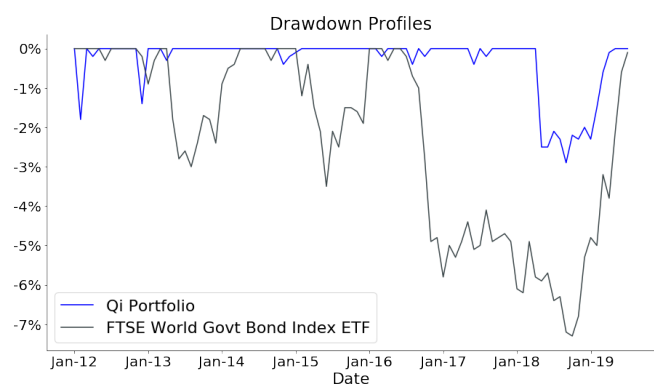
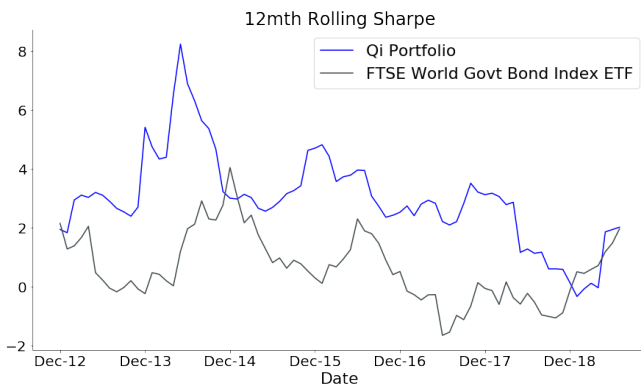
Performance

	Qi	ETF
Return CAGR	6.7%	2.6%
Avg. Monthly Return	0.5%	0.2%
Avg. Monthly Gain	0.6%	0.7%
Avg. Monthly Loss	-0.5%	-0.6%
Avg. Monthly Gain/Loss	1.3	1.3
Max Monthly Gain	2.9%	2.9%
Max Monthly Loss	-1.7%	-1.8%
Average Yearly Sharpe	2.71	0.86
1yr Rolling Sharpe High	8.23	4.05
1yr Rolling Sharpe Low	-0.33	-1.65
Max Drawdown	-2.9%	-7.3%



Monthly Returns

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Qi Yr	ETF Yr
2012	2.03%	-1.74%	0.14%	-0.16%	0.71%	2.86%	2.41%	1.78%	1.58%	1.18%	0.05%	-1.22%	9.6%	3.9%
2013	1.20%	1.17%	0.56%	-0.30%	1.37%	0.85%	0.48%	0.47%	0.75%	0.58%	0.71%	0.45%	8.3%	-0.7%
2014	0.12%	0.18%	0.69%	0.87%	0.68%	0.11%	0.23%	0.16%	0.28%	1.20%	-0.35%	0.17%	4.3%	7.2%
2015	0.10%	0.37%	0.41%	0.09%	0.38%	0.24%	0.61%	0.50%	1.11%	0.55%	0.11%	0.21%	4.7%	1.2%
2016	0.15%	1.17%	-0.15%	0.22%	0.45%	1.21%	1.26%	-0.33%	2.34%	-0.17%	0.25%	0.43%	6.8%	2.3%
2017	0.61%	0.18%	0.59%	0.47%	0.25%	-0.26%	0.68%	-0.16%	1.17%	0.43%	0.01%	1.40%	5.4%	-0.1%
2018	0.78%	0.06%	0.15%	0.66%	-1.67%	0.01%	0.24%	-0.07%	-0.43%	0.43%	-0.03%	0.19%	0.3%	-0.3%
2019	-0.19%	0.57%	0.57%	0.33%	0.45%	0.07%	0.36%	-	-	-	-	-	2.2%	4.6%



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