Hull TACTICAL

DAILY REPORT

Date	2016-11-15
Time (Eastern)	03:50 PM
Next Refit in	14 days
Last Refit Date	2016-11-07

EQUITY RISK PREMIUM MODEL INDICATORS

Variables in Order of Frequency of Inclusion	Value [1]
Proprietary Variable X	-0.04
Variance Risk Premium (VRP)	-0.11
Default Spread (DEF) *	0.5
New Orders/Shipments (NOS)	0.23
Baltic Dry Index (BDI)	1.44
Implied Correlation (IC) *	-1.15
Proprietary Variable Y *	-0.64
Short Interest (SI) *	0.65
Consumption vs Wealth and Income (CAY)	-2.64
PCA of Price Indicators (PCA.price) *	0
Moving Average (MA) *	0

EQUITY RISK PREMIUM CALCULATION (ANNUALIZED)

	Estimate	Historical [2]
Total Return	2.44%	10.96%
3-Month Treasury Bill Rate	0.49%	4.64%
Equity Risk Premium	1.96%	6.32%

MODEL CONCLUSIONS

Equity Risk Premium Model Exposure:	-1%
Contribution of All Other Models Combined:	32%
Current Optimal Equity Exposure:	31%

When the strategy was launched in June 2015, stock market exposure was determined based on the output of a single equity risk premium (ERP) model described in our paper "A Practitioner's Defense of Return Predictability." In November 2015 we introduced shorter term models and a short term adjustment to the ERP allocation. Now strategy holdings are based on an ensemble methodology that combines models with different horizons, sources of information and statistical approaches to the problem forecasting financial markets.

The models use economic, fundamental, technical, event based, seasonal and sentiment data as inputs. They use statistical techniques ranging from OLS, and kNN all the way to sophisticated machine learning methods.

Strategy exposure to the U.S. stock market can range from short 100% to long 200%. The mix of models will continue to evolve and investment vehicles in addition to those that mimic the performance of the S&P 500 Index may be introduced in the future.

A glossary of terms used in this report appears on the following page.

---

[1]Bullish indicators are denoted by positive signs and bearish indicators by negative signs. Variables marked with * are currently not in the model.

[2]Calculated using S&P 500 and 3-Month Treasury Bill Rate between 1954 and present.

GLOSSARY

(Terms listed in order of appearance in the Daily Report)

- **Refit** – estimating the relationship between model indicators and future stock returns with the benefit of new data.

- **Proprietary variable** – a model indicator developed internally that is not disclosed to the public.

- **Variance Risk Premium** – the difference between volatility estimates observed in markets and recent realized volatility.

- **PCA** – abbreviation for Principal Components Analysis. A statistical process that takes a large number of variables and produces a smaller number of variables that contain much or most of the information in the original large set of variables.

- **Default Spread** – the difference between the low quality and high quality corporate bond yields.

- **New Orders / Shipments** – new orders for and shipments of manufactured durable goods, as published by the U.S. Department of Commerce.

- **Baltic Dry Index (BDI)** – an assessment of the price of moving raw materials by sea, published daily in London by the Baltic Exchange.

- **Implied Correlation** – average pairwise correlation inferred from the relationship between the implied volatility of an index of stocks and the individual implied volatilities of the stocks that make up the index.

- **Implied Volatility** – an estimate of the future volatility of a stock based on prices of options on the stock.

- **Short Interest** – a measure of aggregate stock market short interest based on a weighted sum of short interest of individual stocks. A market participant sells a stock short by borrowing it from a broker and selling it, hoping to buy it back at a lower price.

- **Consumption versus Wealth and Income (CAY)** – deviations from the equilibrium relationship among these three variables can predict future stock returns, according to a 2001 paper by Lettau and Ludvigson. Consumption and income are published by the U.S. Bureau of Economic Analysis; wealth is published by the Federal Reserve.

- **Equity Risk Premium (ERP)** – the excess return that investing in the stock market provides over the return on a riskfree asset like U.S. Treasury bills. To report an annual forecast of the ERP, the 6 month forecast is taken and the historical mean ERP is added for the remaining 6 months.