# Verification of VantagePoint Predictive Neural Index Accuracy

For the 4 year period April 24, 2006 to April 22, 2010

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This report describes the methods and results of an accuracy assessment I was requested to conduct of the Predicted Neural Index (PNI) in VantagePoint on April 22, 2010. I randomly selected thirty of the over 600 markets for which VantagePoint provides data and calculated the accuracy of the predicted neural index for each of these markets over the four year time period from 4/24/2006 to 4/22/2010.

VantagePoint uses neural networks to combine intermarket analysis with market price data to provide predictive indicators. The PNI is a proprietary indicator computed by VantagePoint that predicts whether or not a three-day simple moving average of price data will be higher or lower two days in the future.

### Markets:

The following thirty markets were randomly selected for testing:

<u>Forex</u>: Australian Dollar/Canadian Dollar, Euro/British Pound, Euro/Japanese Yen, U.S. Dollar/Canadian Dollar, U.S. Dollar/Mexican Peso

<u>Futures</u>: U.S. Dollar IDX, RBOB Gasoline, Corn, FTSE 100, 30 Year U.S. Treasury Bonds, Frozen Pork Bellies, Palladium, Orange Juice

ETFs: iShares S&P Europe 450 IDX, Health Care SPDR

<u>Equities</u>: U.S. Steel, Pulte Homes, 3M, Toyota Motor, Procter & Gamble, Schlumberger, Bank of America, Eli Lilly, Google, Verizon, Southwest Airlines, Consolidated Edison, Cisco, NIKE, Boeing

#### Method:

VantagePoint version 8.2 was installed, along with CRB's DataCenter software. Data was obtained for all VantagePoint markets for the four-year period from 4/24/2006 to 4/22/2010. Thirty VantagePoint markets were randomly selected, and a History report was generated for each. The reports contained the Date, High, Low, Close and Predicted Neural Index values for each day in the four-year test period. Each History report was exported in MS Excel format, and then imported to a separate tab in a data analysis spreadsheet. Each tab was labeled with the symbol and date range for the represented market.

On each market's tab of the data analysis spreadsheet, a new column was added, which computed the 'Typical Price', which is the average of the High, Low and Close prices for a given day. With this column, the 'actual' value of the neural index can be computed by comparing the 3-day simple moving average of the Typical Price for today with its value two days in the future. If the future value is greater than today's value, then the market is trending up and the PNI for today should be 1; if the future value is less, the market is trending down and the PNI for today should be 0. Another column was added to evaluate when the PNI was correct (entry of True) and when it was incorrect (False). By counting the number of correct and incorrect values, a percent correct is determined for the market for the chosen time period of four years.

# Results:

As shown in the table below, the average accuracy over all thirty markets is 78.04%, with a low value of 75.37% for Bank of America stock, and a high value of 80.06% for Cisco stock. See also the detailed data for each market in the data analysis spreadsheet.

		antagePoint PNI			Juits		F	_
Category	Sub-category	Market	Symbol	Start date	End date	Correct	Incorrect	Percen
Forex	Cross Pairs	Australian Dollar/Canadian Dollar	AUD-CAD	4/24/2006	4/22/2010	812	221	78.61%
Forex	Cross Pairs	Euro/British Pound	EUR-GBP	4/24/2006	4/22/2010	812	221	78.619
Forex	Cross Pairs	Euro/Japanese Yen	EUR-JPY	4/24/2006	4/22/2010	812	221	78.619
Forex	Major Pairs	U.S. Dollar/Canadian Dollar	USD-CAD	4/24/2006	4/22/2010	817	216	79.099
Forex	Major Pairs	U.S. Dollar/Mexican Peso	USD-MXN	4/24/2006	4/22/2010	812	221	78.61%
Futures	Currencies	U.S. Dollar IDX	DX	4/24/2006	4/22/2010	808	205	79.76%
Futures	Energies	RBOB Gasoline	RB	4/24/2006	4/22/2010	779	223	77.74%
Futures	Grains	Corn	С	4/24/2006	4/22/2010	775	228	77.279
Futures	Indices	FTSE 100	Х	4/24/2006	4/22/2010	789	219	78.27%
Futures	Interest Rates	30 Year U.S. Treasury Bonds	US	4/24/2006	4/22/2010	787	214	78.62%
Futures	Meats	Frozen Pork Bellies	РВ	4/24/2006	4/22/2010	789	214	78.66%
Futures	Metals	Palladium	PA	4/24/2006	4/22/2010	775	227	77.35%
Futures	Softs	Orange Juice	JO	4/24/2006	4/22/2010	780	220	78.00%
Stocks	Basic Materials	U.S. Steel	Х	4/24/2006	4/22/2010	770	233	76.77%
Stocks	Capital Goods	Pulte Homes	PHM	4/24/2006	4/22/2010	778	225	77.57%
Stocks	Conglomerates	ЗМ	MMM	4/24/2006	4/22/2010	779	224	77.67%
Stocks	Consumer/Cyclical	Toyota Motor	TM	4/24/2006	4/22/2010	779	224	77.67%
Stocks	Consumer/Non-Cyclical	Procter & Gamble	PG	4/24/2006	4/22/2010	775	228	77.27%
Stocks	Energy	Schlumberger	SLB	4/24/2006	4/22/2010	777	226	77.47%
Stocks	ETFs-International	iShares S&P Europe 450 IDX	IEV	4/24/2006	4/22/2010	770	233	76.77%
Stocks	ETFs-US	Health Care SPDR	XLV	4/24/2006	4/22/2010	784	219	78.17%
Stocks	Financial	Bank of America	BAC	4/24/2006	4/22/2010	756	247	75.37%
Stocks	Healthcare	Eli Lilly	LLY	4/24/2006	4/22/2010	798	205	79.56%
Stocks	Services	Google	GOOG	4/24/2006	4/22/2010	787	216	78.46%
Stocks	Technology	Verizon	VZ	4/24/2006	4/22/2010	787	216	78.46%
Stocks	Transportation	Southwest Airlines	LUV	4/24/2006	4/22/2010	777	226	77.47%
Stocks	Utilities	Consolidated Edison	ED	4/24/2006	4/22/2010	774	229	77.17%
Stocks	Technology	Cisco	csco	4/24/2006	4/22/2010	803	200	80.06%
Stocks	Services	NIKE	NKE	4/24/2006	4/22/2010	785	218	78.27%
Stocks	Capital Goods	Boeing	BA	4/24/2006	4/22/2010	782	221	77.97%

Overall Average Accuracy 78.04%

# **Conclusions:**

The results displayed in the table above show the overall accuracy of the Predicted Neural Indicator in VantagePoint is nearly 80%. In all cases, the accuracy is better than 75%; and in 27 of the 30 markets the results are better than 77.0%.

#### About the Author:

Dr. Phillip A. Arcuri has worked in areas of advanced technology for over 30 years, including modeling of neutral beam injectors for tokamaks at Oak Ridge National Laboratory, MATLAB model development at AERE Harwell, MUMPS programming at the John Radcliffe Hospital, Oxfordshire, development of largescale personnel dispatch systems for Verizon, and Public Key Infrastructure security products for bTrade. He holds an A.B. degree from Wabash College and both an M.Sc. and PhD. in mathematics from Oxford University, England

#### Certificate

I. Phillip A. Arcuri, certify that, based on the methodology described above, VantagePoint Software produced predictive results which are nearly 80% accurate for the four-year period from 4/24/2006 to 4/22/2010. The sample of thirty markets produced an average accuracy of 78.04% over that time period. The methodology used ensures that the results obtained should be representative of the results that could be expected from testing any of the VantagePoint markets.

State of Texas, County of January

On this day, personally appeared before me

Phillip A. Arcuri,

to me known to be the person(s) described in and who executed the within and foregoing instrument, and acknowledged that he/she signed the same as his/her voluntary act and deed, for the uses and purposes therein mentioned.

Witness my hand and official seal hereto affixed

this 26 day of April 2010.

Notary Public in and for the State of Texas.

My commission expires 11/08/13

CLINT ASHBURN Notary Public