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Computerized Stock Trading System

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An Interactive Qualifying Project Report

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Abstract

The purpose of this project is to improve the portfolio distribution and trading performance of the Limited Investor's Investment Club by investigating various trading strategies and introducing portfolio analysis techniques based on past trading records. The stock selection of the Club was determined mainly on the suggestions provided by Porter Stansberry's monthly newsletter. In addition, Club members' recommendations of fast growing stocks were also considered. After seven weeks of meeting with two members of the Club, Fred Hudson and Christopher Shustak, we found that the Club had poor return on their investments due to the lack of scientific and technology-based approaches. We then evaluated the correlation coefficient among the stocks in the Club's portfolio. Correlations of stocks from different sources such as Porter Stansberry and Breakfast Club Meeting were also evaluated in conjunction with correlations of the stocks in bull and bear markets in order to diversify the portfolio and decrease the risk of investments. By applying a Sector Rotation Model we identified the portfolio's capital movement among different industries and sectors as well as the Club's capital distribution among sectors. After all the research and analysis, we built our own trading strategies on Tradestation. By back-testing selected stocks and profit-optimization, we compared the trading performances of each selected stock relative to the Club's original strategy of "buy and hold". At the end of this project we came up with a list of strategies that could be applied to Limited Investors Investment Club to improve their trading performance.

1. Introduction and Statement of the Problem

The foundation of the Limited Investor's Investment Club can be traced back to the 1950's in Worcester, where it was initiated as a group of young professionals sharing an interest in saving and investing their earnings and discussing preparations and plans for retirement. According to Mr. Frederick Hutson, who is the Lab Manager of the Physics Department for WPI and also a member of the Limited Investor's Club, one of the main purposes of Club is to offer an opportunity for individuals from different backgrounds to communicate, discuss and learn various trading and investment strategies through monthly breakfast meetings.

The current investing strategies accepted by the Club members for major decisions are derived from Porter Stansberry's monthly Newsletter[1] and the Dogs of the Dows trading strategy. As a well-known value investor, Porter Stansberry founded Stansberry & Associates Investment Research in 1999, which releases monthly investing advice in forms of different newsletters each targeted at distinct investor groups. The newsletter subscribed by Limited Investor's Club deals mainly with "safe value investment poised to give subscribers years of exceptional returns".[2] The Dogs of the Dow is a classic investment strategy, in which the investor annually selects the ten Dow Jones Industrial Average stocks whose dividend is the highest fraction of their price. Besides these two outside resources, sparks of innovative thoughts and ideas flash during the monthly breakfast meeting when members share their brilliant opinions and present what they learned from publications or media recently. Trade, as a result of the discussion, eventually occurs after the Club takes all the thoughts and opinions into consideration.

According to the general introduction by Mr. Hutson, members of Limited Investors use their own savings to contribute to the group fund, which covers usual trading cost, monthly dining and activity fees. The driving principal of the Club is to generate more capital for life after retirement through wise investing, and trading decisions are made seriously and cautiously. In this project, we had a weekly meeting with two members of the Club, Fred Hutson and Christopher Shustak, along with our advisor, Professor Michael Radzicki. Thanks to the generous and selfless

[1] The Investment Advisory Newsletter covers various types of investment opportunities with the goal of providing spectacular returns for subscribers.
[2] http://www.stansberryresearch.com/editors.asp

contribution of the two members, we were able to take advantage of the yearlong historical data and trading minutes from Fidelity, which included but not limited to details about deposits, withdrawals and trades. Based on the comprehensive analysis conducted by our group, although the general performance of the Club's portfolio did not reach their expectation, it is certain that opportunities for further improvement exist.

The purpose of this project is to make suggestions to the Club by showing improvement achieved by minor changes and tweaks to their trading strategy that requires a modest amount of work and effort, which they could accomplish during the monthly breakfast meetings. Through an extensive analysis of their current portfolio, advice regarding several aspects is offered. First, we used statistical tools to calculate the correlation coefficient of the Club's portfolio in different sectors, markets and timeframes. Second, we investigated the change in their portfolio from quarter to quarter and correlated the trend of change with the sector rotation model. Finally, we developed a corresponding exit strategy for the stocks in distinctive sectors by comparing the strategy performance report generated by Tradestation, a powerful platform favored by many professional traders.

2. Background Research and Literature Overview

2.1 Charlie Wright

Charlie Wright is a very experienced and successful trader. His involvement in the field of financial services has allowed him to gain a great deal of practical experience in observing how markets move and the potential benefits of using a systematic approach. He was one of the first people who started to trade using Tradestation. His book, "Trading as a Business", captures the essence of strategic trading with the use of Tradestation. In his book, he showed how strategy trading produces better trading performance than non-strategy trading. Automated trading will prevent or decrease the possibility of emotions or anxieties impacting trading decisions. A trader should have his or her own trading system based on his or her own rules that the profit or loss is psychologically acceptable for oneself.

Charlie categorized three types of traders in the market: discretionary traders, technical traders and strategy traders.

Based on the current trading behavior and pattern of the Limited Investor Club, they most resemble the technical trader described in Charlie Wright's book. A technical trader uses technical indicators, hotlines, newsletters and perhaps some personally defined objective rules to enter and exit the market[3] by applying the objective rule of highest dividends and lowest price to the stocks recommended by monthly Porter Stansberry's Investor Advisory. The Limited Investor Club fits the definition of a technical trader by showing their understanding of importance of objective criteria such as indicator confirmation before making a trade. Rules have been developed, but how strict members are about these criteria often depending on the confidence they gained from the monthly performance report from Fidelity. Fortunately, they realize the urge for a more strategic and scientific approach for trading as they start to sense the immense value in historical strategy performance data and the essence of back testing on past data.

[3] Wright, C. Trading as a Business

"A strategy trader trades a strategy—a method of trading that uses objective entry and exit criteria that have been validated by historical testing on quantifiable data."[4] The main purpose of this project is to help the Limited Investor to transit from technical trader to strategy trader.

Strategy traders are restricted by a set of rules known as the strategy. As a strategy trader, you will not deviate from your strategy's rules at all, unless you have decided to use a different strategy altogether. The current trading pattern of the Limited Investor Club, although it includes some aspects of usage of indicators and newsletters, are largely based on emotion and intuition rather than specified and explicit rules. Deviation occurs when the Club member's emotion and intuition overwhelm the designated strategy and rule. Thus, the Club needs an automated and reliable trading system.

2.2 Encyclopedia of Trading Strategies

2.2.1 Data Time Frame

Data may be used in its natural time frame or may need to be processed into a different time frame. There are three general types of data we can collect: intra-day, daily or weekly. Choosing the time frame that is appropriate for the Club is almost as important as the type of market action and strategy the Club will want to trade. However, according to the decision making pattern of Limited Investors, one suitable time frame could be based on a daily chart.

2.2.1 Entry Strategy

What constitutes a good Entry?

By applying a good entry, the investor could initiate a trade at a point of low potential risk and high potential reward. A point of low risk is usually a point from which there is little adverse excursion[5] before the market begins to move in the trade's favor. Entries that yield small adverse excursions on successful trades are desirable because they permit fairly tight stops to be set,

[4] Wright, C. Trading as a Business

[5] loss suffered by a single trade while it is open

thereby minimizing risk. A good entry should also have a high probability of being followed quickly by favorable movement in the market.

2.2.2 Exit Strategy

There are two goals that a good exit strategy attempts to achieve. The first and most important goal is to strictly control losses. The exit strategy must dictate how and when to get out of a trade that has gone wrong so that significant erosion of trading capital can be prevented. This goal is often referred to as money management and is frequently implemented using stop-loss orders (money management stops). The second goal of a good exit strategy is to ride a profitable trade to full maturity. The exit strategy should determine not only when to get out with a loss, but also when and where to get out with a profit.

2.3 Karl Pearson[6]'s Correlation Coefficient

The Karl Person's correlation coefficient was conducted multiple times in our project, it played an important role in analyze the relations between stocks. In statistics, the Karl Pearson's correlation coefficient is a common measure of the correlation between variables.

2.3.1 Statistical hypothesis test

A statistical hypothesis test is a method of making decisions using data from a controlled experiment or an observational study (not controlled). In statistics, a result is called statistically significant if it is unlikely to have occurred by chance alone. A pre-determined parameter called significance level is therefore introduced to test the result.

2.3.2 Significance level

[6] Karl Pearson was an influential English mathematician who has been credited with establishing the discipline of mathematical statistics. -- http://en.wikipedia.org/wiki/Karl_Pearson

The amount of evidence required to accept that an event is unlikely to have arisen by chance is known as the significance level or critical p-value. In traditional Fisherian statistical hypothesis testing, the p-value is the probability of observing data at least as extreme as that observed, given that the null hypothesis is true. If the obtained p-value is small then it can be said either the null hypothesis is false or an unusual event has occurred.

2.3.3 SPSS & Excel

SPSS is a computer program used for survey authoring, deployment, data mining, text analytics, statistical analysis, collaboration and deployment. Most of the correlation analysis in the project is accomplished by using SPSS and Excel.

2.4 Van Tharp, Expectancy and Expectunity

2.4.1 Van Tharp

Van Tharp is a famous trader who has developed a series of trading strategies. In his bestselling book, "Trade Your Way to Financial Freedom",[7] he first mentioned the theory of Expectancy and Expectunity.

2.4.2 Expectancy and Expectunity

Expectancy is defined as the average profit or loss per dollar risked per trade. It is a measurement of profit made during a certain period of time over multiple trades, also known as the essence of successful trading. Expectancy can be mathematically calculated as:

$$E = \sum \frac{[(\text{Profit/Loss on nth trade})/(\text{Money Management Stop Loss on nth trade})]}{\text{N trades}}$$

Expectunity is defined as the total profit or loss per dollar risked over all trades. It is calculated as:

[7] Publication Date: December 1, 1998 ISBN-13: 978-0070647626

Expectunity = Expectancy * Number of trades.

2.5 Sector Rotation Model[8]

2.5.1 Sector Rotation

Sector rotation is an investment strategy involving the movement of money from one industry sector to another in an attempt to beat the market.

2.5.2 Economic Cycles

According to Sector Rotation Theory, Economy Cycles are always divided into four stages known as full recession, early recovery, late recovery and early recession. Each of the four stages has different market characteristics and industry movements.

2.5.3 Sector Rotation Model

The Sector Rotation Model was created to help investors increase profit by following the booming sectors of the market. A trader must conduct review and inspection on the market at a regular time in order to apply the Sector Rotation Model into strategies.

2.6 Tradestation

As one of the mainstream professional electronic trading platforms for financial market traders, Tradestation is used mainly by retail and relatively small investment operations. This powerful tool provides extensive functionality for receiving real-time data, displaying charts and entering investment positions. Besides plenty of pre-defined indicators and strategies, users can even create their own indicators, strategies and functions using the built-in EasyLanguage programming language.

[8] http://blogs.stockcharts.com/chartwatchers/2011/04/the-sector-rotation-model.html

2.7.1 Easy Language

The integration of Easy Language into Tradestation enables the users to create customized indicators and algorithmic trading strategies for the different types of market. Because of the language's relative simplicity, individual investors can form their own strategies without specialized computer training. [9]

3. Portfolio Analyses for Limited Investors

3.1 An Overview

With the historical monthly reports and current portfolio distribution provided by Limited Investors, we applied several of the techniques that were introduced in previous sections to their portfolio. First, we conducted a correlation analysis and looked up the correlation coefficient among different equities. Certain positively or negatively correlated stocks were identified and subsequently investigated. Secondly, we exploited the powerful section rotation model on www.stockcharts.com[10] to compare the portfolio's cash flow from one sector to another. Finally, outcomes generated by using different exit strategies on the historical data of the stocks were compared to the Club's performance over the same period of time.

3.2 Correlation Analysis

In statistics, the Pearson product-moment correlation coefficient is a measure of the correlation, or linear dependence between two variables X and Y, giving a value between +1 and −1. It is widely used in the sciences as a measure of the strength of linear dependence between two variables. In terms of stock trading, variables X and Y could be a pair of stocks in a specific

[9] EasyLanguage is a proprietary programming language that was developed by TradeStation built into its trading platform.
[10] One of the most relied-upon websites for technical traders and chartists

portfolio. The Pearson correlation of +1 means a perfect positive linear relationship whereas −1 means a perfect decreasing linear relationship. Some value between −1 and 1 in all other cases indicate the degree of linear dependence between the variables. A coefficient of zero means that there is no linear relationship between two stocks.

In our project, we used SPSS to perform correlation analysis for the current portfolio in terms of different markets and stock types. One huge advantage of SPSS is its ability to deal with huge chunks of data. In our current portfolio there are a total of 43 different equities and about 10 for each type. However, when we tried to analyze the stocks in terms of clusters, MS Excel provided us with a more accurate and intuitive way to recognize the pattern of how different correlated stocks are distributed in each cluster.

3.2.1 Correlation Analysis for Current Portfolio

First, we downloaded the weekly historical prices for all the stocks in the current portfolio from Yahoo! Finance. We can do the same using Tradestation, but Yahoo was a better choice because it was much more convenient and the data was generated in a neat manner for further manipulation. For the sake of simplicity, we chose close price for the correlation analysis. After the data was downloaded in a CSV file, we then imported the file into Excel, and used the built in CORREL function to calculate the correlation coefficient between different pairs of stocks. Table 1 below illustrates part of the results:

Table 1 Example Correlation

		HSY	COP	WMT	MON	EXC	D
HSY	Pearson Correlation	1	.961**	.673**	.603**	-.357*	.728**
	Sig. (2-tailed)		.000	.000	.000	.017	.000
	N	44	44	44	44	44	44
COP	Pearson Correlation	.961**	1	.692**	.639**	-.349*	.731**
	Sig. (2-tailed)	.000		.000	.000	.020	.000
	N	44	44	44	44	44	44
WMT	Pearson Correlation	.673**	.692**	1	.741**	-.366*	.667**

	Sig. (2-tailed)	.000	.000		.000	.015	.000
	N	44	44	44	44	44	44
MON	Pearson Correlation	.603**	.639**	.741**	1	-.415**	.494**
	Sig. (2-tailed)	.000	.000	.000		.005	.001
	N	44	44	44	44	44	44
EXC	Pearson Correlation	-.357*	-.349*	-.366*	-.415**	1	.127
	Sig. (2-tailed)	.017	.020	.015	.005		.410
	N	44	44	44	44	44	44
D	Pearson Correlation	.728**	.731**	.667**	.494**	.127	1
	Sig. (2-tailed)	.000	.000	.000	.001	.410	
	N	44	44	44	44	44	44
SLV	Pearson Correlation	-.593**	-.591**	-.626**	-.272	.051	-.746**
	Sig. (2-tailed)	.000	.000	.000	.075	.742	.000
	N	44	44	44	44	44	44
ATVI	Pearson Correlation	.460**	.503**	.565**	.534**	.247	.746**
	Sig. (2-tailed)	.002	.001	.000	.000	.106	.000
	N	44	44	44	44	44	44
TGP	Pearson Correlation	.185	.243	.348*	.621**	-.461**	-.101
	Sig. (2-tailed)	.230	.112	.020	.000	.002	.513
	N	44	44	44	44	44	44
CHK	Pearson Correlation	-.726**	-.694**	-.796**	-.497**	.403**	-.708**
	Sig. (2-tailed)	.000	.000	.000	.001	.007	.000
	N	44	44	44	44	44	44
EOG	Pearson Correlation	.028	.031	.526**	.496**	-.431**	-.097
	Sig. (2-tailed)	.857	.839	.000	.001	.004	.529
	N	44	44	44	44	44	44

Although these figures may appear interesting at first, we could not draw any objective conclusions without a test of significance. The correlation coefficient represents the strength of the relationship between two variables in the sample. However, it is the test of significance that tells if the probability of the population correlation is zero.

Figure 1 below shows two pairs of stocks in the current portfolio that have had a strong correlation, either positive or negative, in the past year. Oppenheimer Gold & Special Minerals (OGMCX) and Chesapeake Energy (CHK) had a strong positive correlation, 0.92, while Chesapeake Energy (CHK) and Walmart(WMT) had a very negative correlation, -0.796.

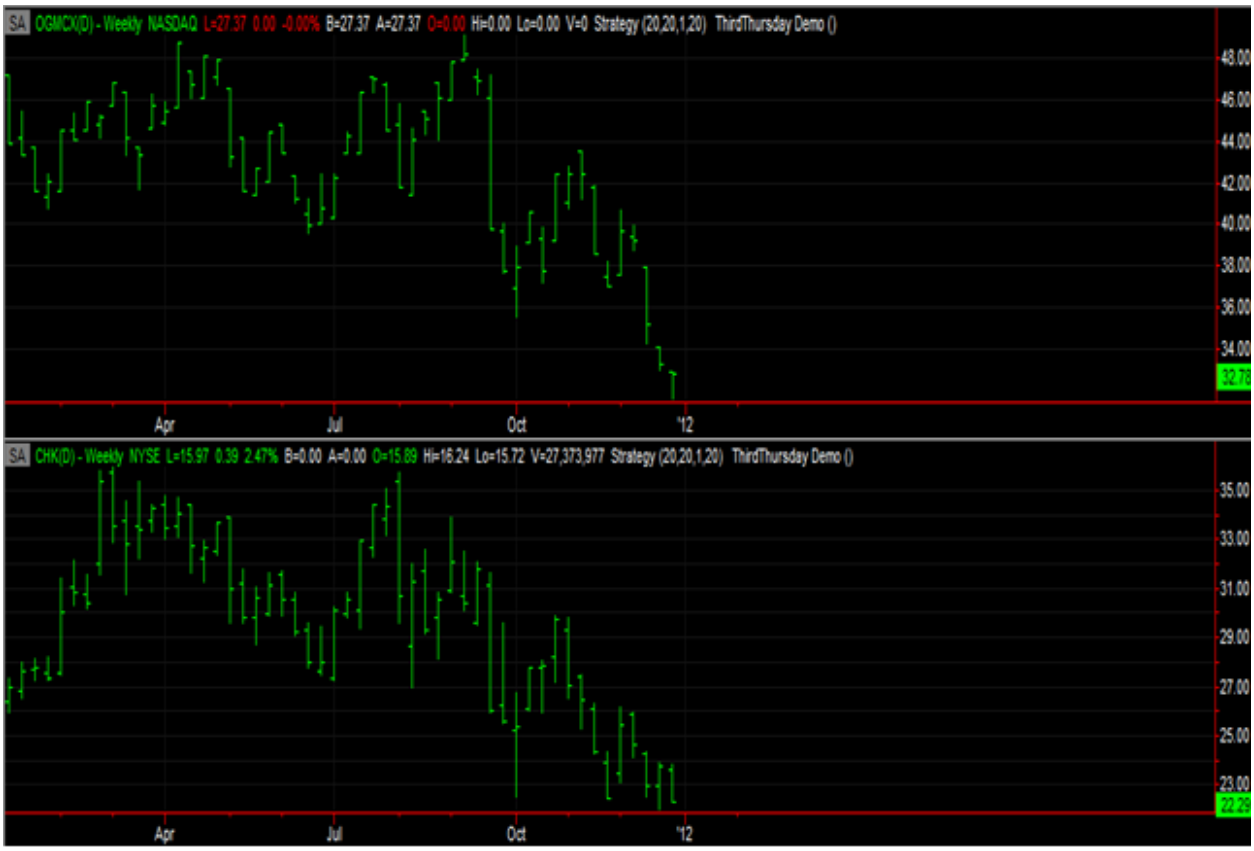

Figure 1 OGMCX V.S CHK price movement chart comparison

As we may see in Figure 1, the price of OGMCX and CHK move up and down in a very similar pattern.

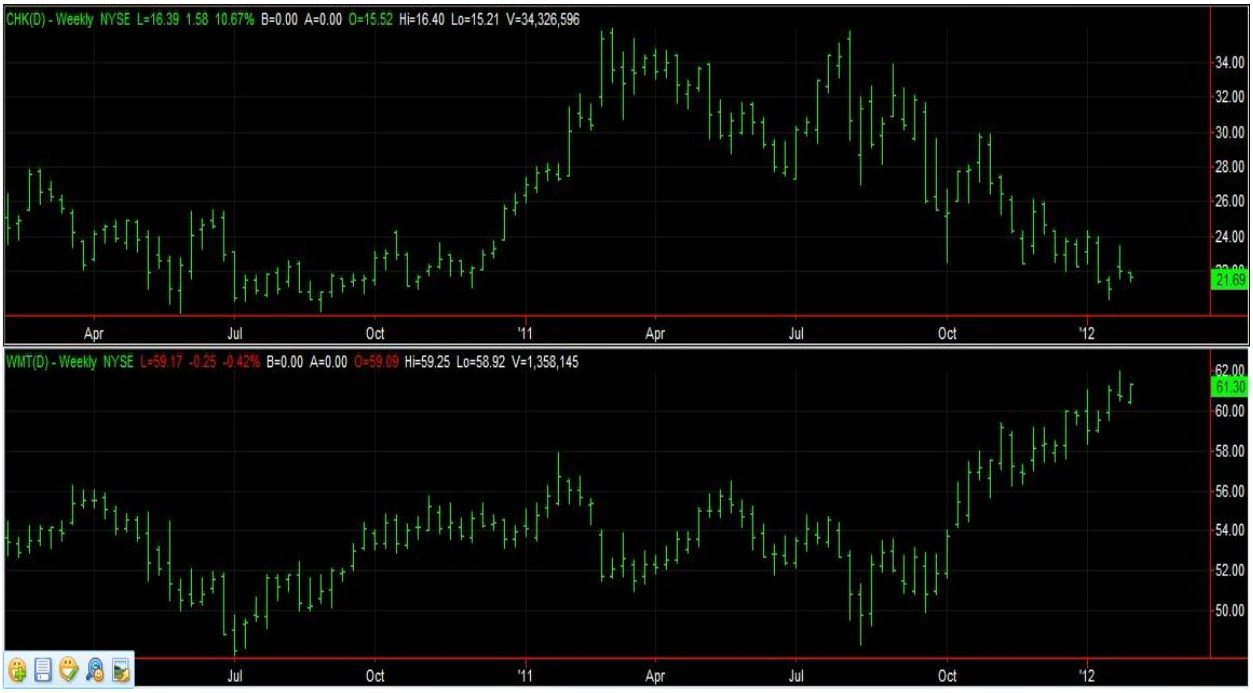

Figure 2 CHK V.S WMT price movement chart comparison

Further, the prices of CHK and WMT went in the opposite direction since the beginning of 2011, which corresponds to a strong negative correlation. As the price of CHK went up in the first season, WMT did exactly the opposite. Figure 2 above demonstrate visually the price movement of CHK and WMT.

3.2.2 Correlations in Bull and Bear Markets

The previous analysis was conducted in a one-year time frame. However, in order to truly confirm the related behavior among different equities, we investigated how the market changes the correlation between stocks. Our conclusion could be strengthened if new evidence is found in Bull Market or Bear Market. In order to do this, we use the Tradestation to identity the recent Bull and Bear Market patterns to settle the time frame for later analysis.

One traditional technique used in identifying the market trend is to observe the cross point of the two simple moving averages (SMA). The most commonly used combination of simple moving averages is 50-day and 200-day. A typical transition to bull market happens after the 50-day

moving average crosses and stays above the 200 day moving average. The intersection is commonly known as “Golden Cross”. On the other hand, if the 50-day moving average crosses and stays below the 200-day moving average, a “Death cross” appears, and a Bear Market emerges subsequently.

Finally we ran the correlation analysis of the current portfolio in a Bull Market from June 2009 to May 2011 and then again in a Bear Market from December 2007 to June 2009.

3.2.2.1 Porter Stansberry Correlation in Bull Market

After importing the CSV downloaded from Yahoo Finance, we used SPSS to calculate the correlation coefficients and the corresponding P-value. Part of the output is showed in Table 2:

Table 2 Correlations Coefficient for Porter Stansberry Stocks in Bull Market

		HSY	COP	WMT	MON	EXC	D
HSY	Pearson Correlation	1	.731**	.153	-.913**	-.864**	.827**
	Sig. (2-tailed)		.000	.533	.000	.000	.000
	N	19	19	19	19	19	19
COP	Pearson Correlation	.731**	1	.623**	-.637**	-.733**	.879**
	Sig. (2-tailed)	.000		.004	.003	.000	.000
	N	19	19	19	19	19	19
WMT	Pearson Correlation	.153	.623**	1	-.027	-.274	.570*
	Sig. (2-tailed)	.533	.004		.913	.256	.011
	N	19	19	19	19	19	19
MON	Pearson Correlation	-.913**	-.637**	-.027	1	.891**	-.784**
	Sig. (2-tailed)	.000	.003	.913		.000	.000
	N	19	19	19	19	19	19
EXC	Pearson Correlation	-.864**	-.733**	-.274	.891**	1	-.811**
	Sig. (2-tailed)	.000	.000	.256	.000		.000
	N	19	19	19	19	19	19

D	Pearson Correlation	.827**	.879**	.570*	-.784**	-.811**	1
	Sig. (2-tailed)	.000	.000	.011	.000	.000	
	N	19	19	19	19	19	19
SLV	Pearson Correlation	.650**	.939**	.534*	-.511*	-.594**	.736**
	Sig. (2-tailed)	.003	.000	.019	.025	.007	.000
	N	19	19	19	19	19	19
ATVI	Pearson Correlation	-.193	-.187	-.297	.406	.457*	-.414
	Sig. (2-tailed)	.429	.445	.216	.084	.049	.078
	N	19	19	19	19	19	19
TGP	Pearson Correlation	.823**	.905**	.499*	-.726**	-.755**	.928**
	Sig. (2-tailed)	.000	.000	.030	.000	.000	.000
	N	19	19	19	19	19	19
CHK	Pearson Correlation	-.502*	-.114	.379	.492*	.335	-.251
	Sig. (2-tailed)	.029	.643	.110	.033	.160	.300
	N	19	19	19	19	19	19
EOG	Pearson Correlation	.628**	.651**	.497*	-.681**	-.815**	.764**
	Sig. (2-tailed)	.004	.003	.030	.001	.000	.000
	N	19	19	19	19	19	19

As we can see from the chart, N represents the sample size, which is 19 in this case. The Pearson Correlation, as introduced before, shows the degree that two sample variables fluctuate correspondingly. The symbol Sig, which is commonly known as the P-value, states for the level of significance. Usually a P-value less than 0.01 indicates a statistically significant correlation coefficient.

3.2.2.2 Porter Stansberry Correlation in Bear Market

With the same method, we also generated the correlation chart for the Bear Market.

Table 3 Correlations Coefficient for Porter Stansberry Stocks in Bear Market

		HSY	COP	WMT	MON	EXC	D
HSY	Pearson Correlation	1	.591**	.249	.473*	.539*	.648**
	Sig. (2-tailed)		.008	.304	.041	.017	.003
	N	19	19	19	19	19	19
COP	Pearson Correlation	.591**	1	.412	.959**	.985**	.972**
	Sig. (2-tailed)	.008		.079	.000	.000	.000
	N	19	19	19	19	19	19
WMT	Pearson Correlation	.249	.412	1	.408	.352	.409
	Sig. (2-tailed)	.304	.079		.083	.140	.082
	N	19	19	19	19	19	19
MON	Pearson Correlation	.473*	.959**	.408	1	.951**	.890**
	Sig. (2-tailed)	.041	.000	.083		.000	.000
	N	19	19	19	19	19	19
EXC	Pearson Correlation	.539*	.985**	.352	.951**	1	.950**
	Sig. (2-tailed)	.017	.000	.140	.000		.000
	N	19	19	19	19	19	19
D	Pearson Correlation	.648**	.972**	.409	.890**	.950**	1
	Sig. (2-tailed)	.003	.000	.082	.000	.000	
	N	19	19	19	19	19	19
SLV	Pearson Correlation	.343	.793**	-.062	.789**	.844**	.707**
	Sig. (2-tailed)	.150	.000	.800	.000	.000	.001
	N	19	19	19	19	19	19
ATVI	Pearson Correlation	.485*	.964**	.410	.979**	.956**	.913**
	Sig. (2-tailed)	.035	.000	.082	.000	.000	.000
	N	19	19	19	19	19	19
TGP	Pearson Correlation	.445	.849**	-.048	.862**	.888**	.769**
	Sig. (2-tailed)	.056	.000	.846	.000	.000	.000
	N	19	19	19	19	19	19

CHK	Pearson Correlation	.424	.945**	.484*	.982**	.942**	.869**
	Sig. (2-tailed)	.070	.000	.036	.000	.000	.000
	N	19	19	19	19	19	19
EOG	Pearson Correlation	.412	.898**	.517*	.910**	.908**	.802**
	Sig. (2-tailed)	.080	.000	.023	.000	.000	.000
	N	19	19	19	19	19	19

One interesting fact that we observed from Table 3 is that a number of stocks are highly, positively correlated in the Bear Market. The Club should therefore pay additional attention to the portfolio, since it may suffer from huge losses if most stocks within the portfolio move in the same direction as the Bear Market. The existence of certain closely correlated stocks will threaten the overall wellness of the portfolio by introducing huge risks.

3.3 Expectancy of Limited Investors

After gathering all the "Limited Investors" monthly reports from Fidelity for January 2011 to February 2012, we calculated the Expectancy of Limited Investors along with some other representative parameters.

Figure 3 is a spreadsheet with all the trades that Limited Investors have made during the inspected time. The Entry Date, Entry Price, Exit Date and Exit Price were extracted from Fidelity Monthly Report. Money Management Stop Price (MMS Price) was set as 75% of the entry price according to one of the Club members. In order to ease the calculation we defined two parameters, Risk per trade = Exit Price – Entry Price and R Multiple = (Profit or Loss) / Risk Per trade.

Symbol	Entry Date	Entry Price	Exit Date	Exit Price	MMS Price	Long/Short	Profit/Loss	Risk Per Trade	R Multiple
TIE	1/24/2011	18.685	7/12/2011	18.692	14.01375	1	0.007	4.671	0.0015628
TIE	1/24/2011	18.685	7/12/2011	18.694	14.01375	1	0.009	4.671	0.0018196
CCF	1/25/2011	14.350	6/22/2011	15.380	10.7625	1	1.030	3.588	0.287108
CVX	1/26/2011	93.837	8/9/2011	97.635	70.377675	1	3.798	23.459	0.1619022
CVX	8/23/2011	92.740	11/30/2011	92.820	69.555	1	0.080	23.185	0.0034505
XOM	1/26/2011	79.037	8/9/2011	76.013	59.277675	1	-3.024	19.759	-0.1530627
XOM	1/26/2011	79.037	8/9/2011	76.010	59.277675	1	-3.027	19.759	-0.1531892
BP	2/23/2011	47.488	9/8/2011	36.070	35.616	1	-11.418	11.872	-0.9617588
EMC	2/23/2011	27.069	6/30/2011	25.453	20.30175	1	-1.617	6.767	-0.238871
EWC	2/23/2011	32.918	8/9/2011	29.392	24.6885	1	-3.526	8.230	-0.4284586
EWZS	2/23/2011	28.510	8/8/2011	27.410	21.3825	1	-1.100	7.128	-0.1543318
KROO	3/23/2011	27.980	6/13/2011	28.080	20.985	1	0.100	6.995	0.0142959
EWA	3/23/2011	24.430	6/13/2011	24.900	18.3225	1	0.470	6.108	0.0769546
PKX	4/14/2011	110.450	7/12/2011	109.620	82.8375	1	-0.830	27.613	-0.0300589
SLW	5/4/2011	40.100	5/19/2011	33.690	30.075	1	-6.410	10.025	-0.6394015
SLW	7/26/2011	38.805	1/3/2012	27.980	29.10375	1	-10.825	9.701	-1.1158356
DYSL	5/11/2011	3.750	8/12/2011	2.510	2.8125	1	-1.240	0.938	-1.3226667
DYSL	5/20/2011	3.500	8/12/2011	2.520	2.625	1	-0.980	0.875	-1.12
EUO	5/19/2011	17.639	1/27/2012	20.062	13.22925	1	2.423	4.410	0.5494643
EUO	5/19/2011	17.638	1/27/2012	20.062	13.228575	1	2.424	4.410	0.5496964
XWES	6/2/2011	4.500	9/6/2011	2.999	3.375	1	-1.501	1.125	-1.3342222
XWES	6/8/2011	4.000	9/6/2011	2.999	3	1	-1.001	1.000	-1.001
TMV	6/21/2011	35.205	11/3/2011	16.790	26.40345	1	-18.415	8.801	-2.0922948
LNG	7/25/2011	9.833	8/9/2011	8.524	7.3746	1	-1.309	2.458	-0.5325848
CVX	8/23/2011	92.740	11/30/2011	92.820	69.555	1	0.080	23.185	0.0034505
EWY	8/23/2011	52.490	11/29/2011	49.831	39.3675	1	-2.659	13.123	-0.2026291
EWY	8/23/2011	52.490	11/29/2011	49.830	39.3675	1	-2.660	13.123	-0.2027053
TOT	8/23/2011	46.408	11/29/2011	47.540	34.80585	1	1.132	11.602	0.097587
WY	8/23/2011	16.030	11/29/2011	15.650	12.02235	1	-0.380	4.007	-0.0947735
WY	8/23/2011	16.030	11/29/2011	15.650	12.0222	1	-0.380	4.007	-0.0947248
TUR	9/20/2011	48.510	11/25/2011	43.628	36.3825	1	-4.882	12.128	-0.4025892
FRO	11/28/2011	3.420	12/12/2011	3.833	2.565	1	0.413	0.855	0.482807

Figure 3 Raw Data for Expectancy Calculation

Calculations were then conducted, as follows:

Expectancy = Sum of R Multiple / Number of Trades

There were a total of 12 winning trades and 20 losing trades, weighing 37.5% and 62.5% respectively. Among the winning trades, the average winning amount was 0.99715 dollar per share while the average losing amount of all losing trades was -3.85917 per share. Figure 4 is the calculation spreadsheet.

Sum of R	-10.04505942
Number of Trades	32
Expected Value	-65.2176
Expectancy	-0.313908107
Expectunity	-10.04505942
Std Dev R	0.60665542
E / StdDev	-0.517440538
Study Days	365
Opportunities	32
System Quality	-16.55809722
Number of Winning Trades	12
Number of Losing Trades	20
Average Winning Trade	0.99715
Average Losing Trade	-3.85917

Figure 4 Expectancy Calculations

According to Van Tharp's Expectancy Theory, the portfolio will lose money over long-term investments. We concluded that for every dollar risked in each trade, Limited Investors would lose 0.31 dollar.

3.4 Sector Rotation Analysis

3.4.1 Market Sector Rotation

Sector Rotation model is a very powerful tool for investors to follow the market trend. We decided to divide the inspection time into 4 periods, each of which lasted for three month. We subsequently applied the S&P Sector PerfChart in www.stockcharts.com to analyze the change in each quarter. Figure 5 is the chart of cash flow movement among different sectors by big institutions from January 2011 to April 2011.

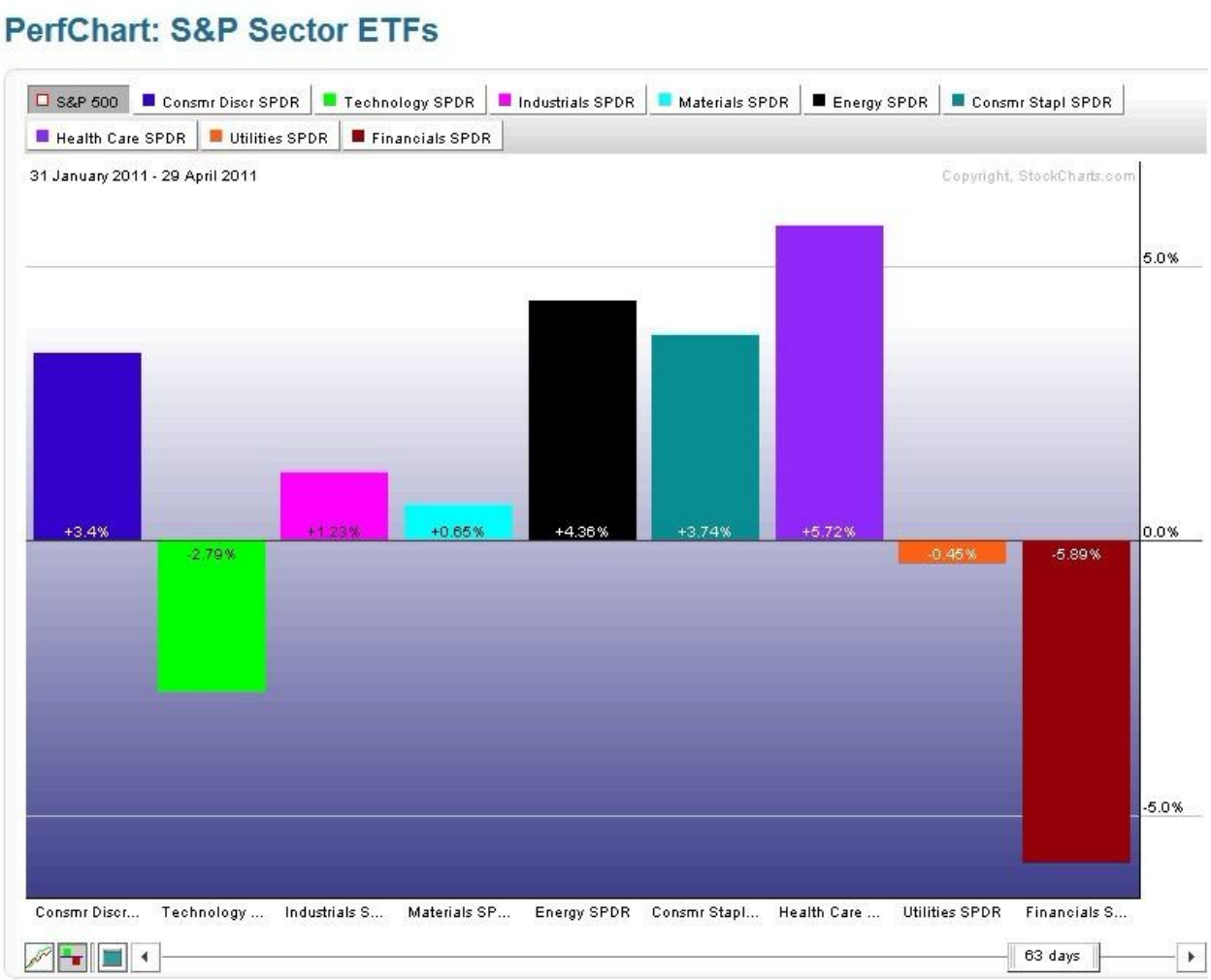

Figure 5 Market Sector Rotation chart

What is this chart telling us?

It is telling us that the three key recessionary sectors – i.e. Energy, Consumer Staples and Healthcare – had outperformed the other sectors significantly during the three-month period. Based on this chart and the following Sector Rotation Model graph, we concluded that the economy was still mired in a recession and the stock market can be expected to head lower as a result. Figure 6 below demonstrates a typical recovery and recession cycle.[11]

[11] http://stockcharts.com/school/doku.php?st=sector&id=chart_school:trading_strategies:sector_rotation_roc

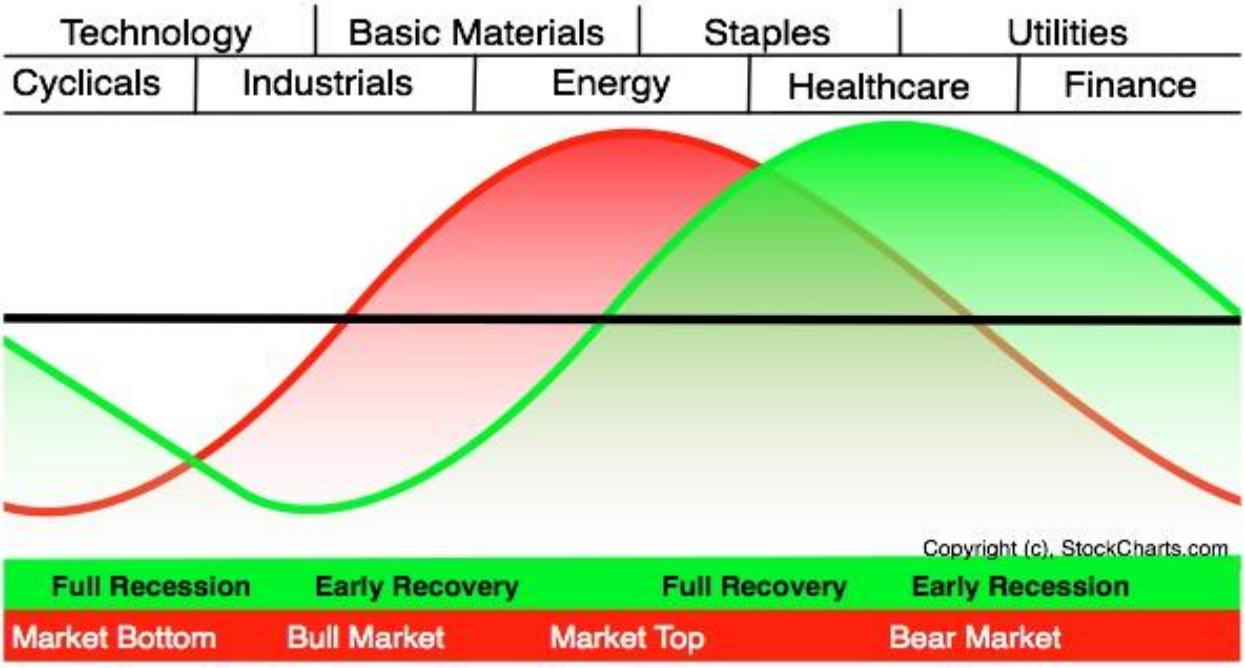

Figure 6 Sector Rotation Model Chart

3.4.2 Limited Investors' Portfolio

After we completed the market's Sector Rotation PerfChart, we created a chart, showing the money movement among sectors for Limited Investors portfolio. We sorted the Club's on-hold stock into different sectors according to Yahoo Finance followed by a calculated percentage weight of each Sector. Figure 7 shows the data of Limited Investors' Approximate Sector Rotation.

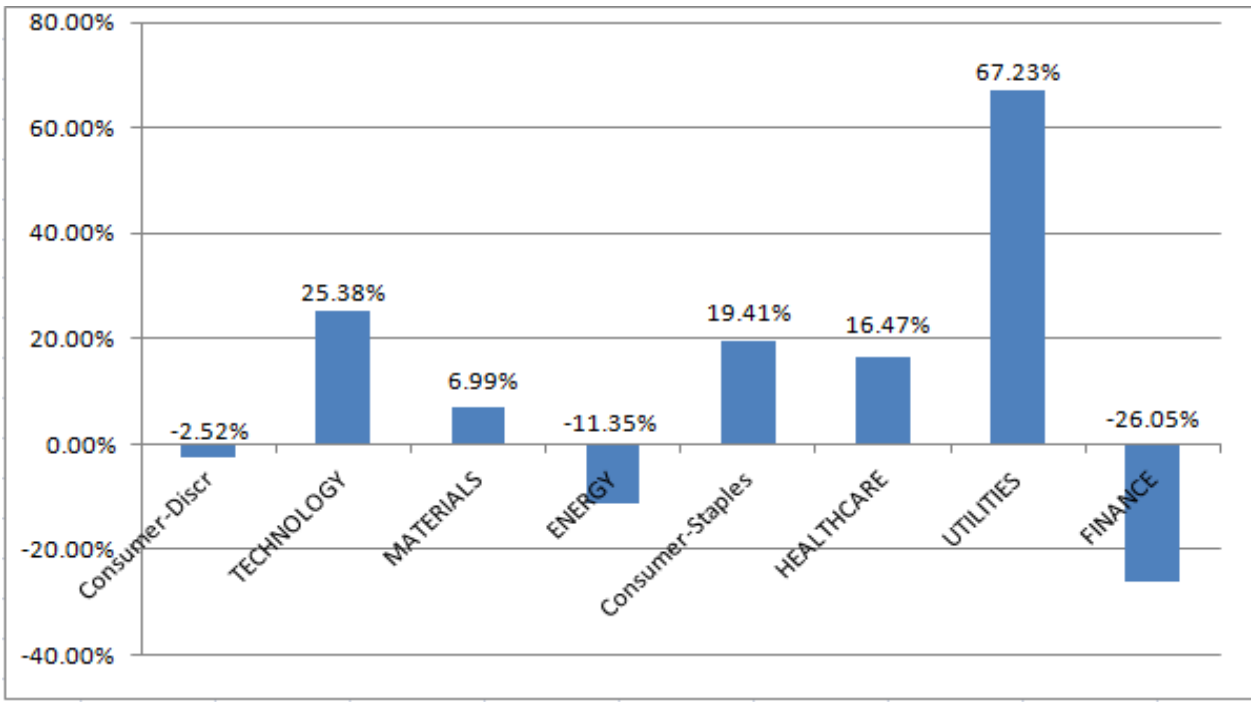

Figure 7 Limited Investor's Approximate Sector Rotation Chart

From Figure 7 we can perceive that Limited Investors had a very high percentage of money movement in Utilities Sector, but according to the Sector Rotation model, the market is in an early recession and is expected to head lower so utilities should not be considered as the major sector to invest in. In addition, the Club had a fairly high percentage in Technology and Materials, which are two sectors that the big institutions were transferring the funds away from.

We consider the comparison between the market's Sector Rotation and Limited Investors Capital movement among sectors as an approximation due to the reason that these two are not directly comparable.

3.4.3 Diversification by Sectors

Another strategy generated by Sector Rotation is to diversify the portfolio by Industries and Sectors. Certainly the more diversified the portfolio is, the less risk Limited Investors will face. Figure 8 is a graph of the Club's money-weighted portfolio distribution in different Sectors.

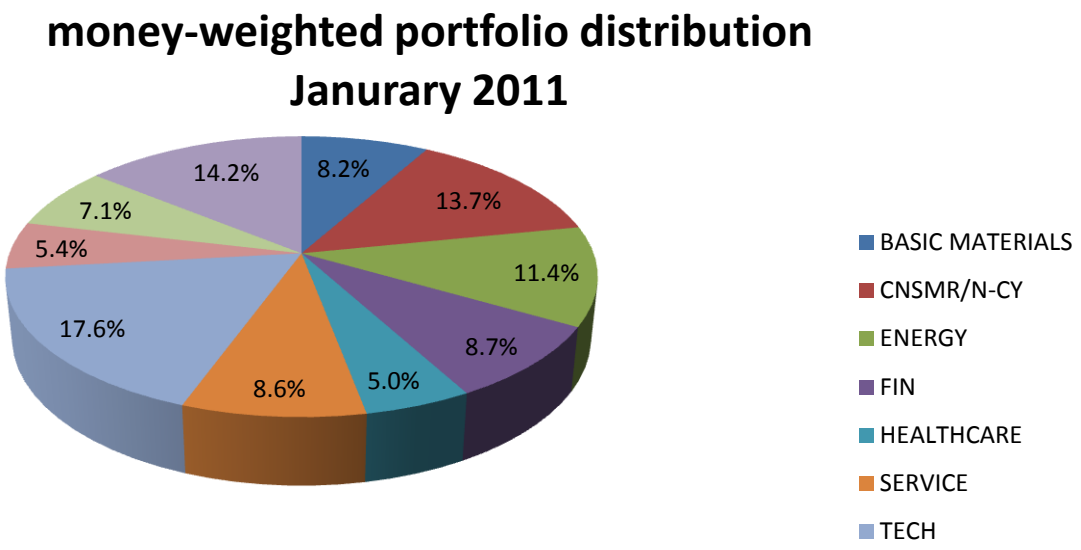

Figure 8 Limited Investor's money-weighted portfolio distribution

The money-weighted portfolio distribution tells us how much money the Club had in each sector. It is clear that the Club had a high percentage of money in Tech and Finance sectors. Technically the portfolio would be the least risky if it is equally distributed. However, it will be biased if we concluded this from only the money-weighted distribution because of some special situations. For instance, the Club had only one stock in Technology whose price is very high and it encounters a high percentage of the whole portfolio.

In this case, Figure 9 is another chart that we created from the Club's symbol-weighted portfolio distribution. If we look at this graph along with Figure 8, Technology and Finance seem to be fairly acceptable and it looks like it is almost equally distributed.

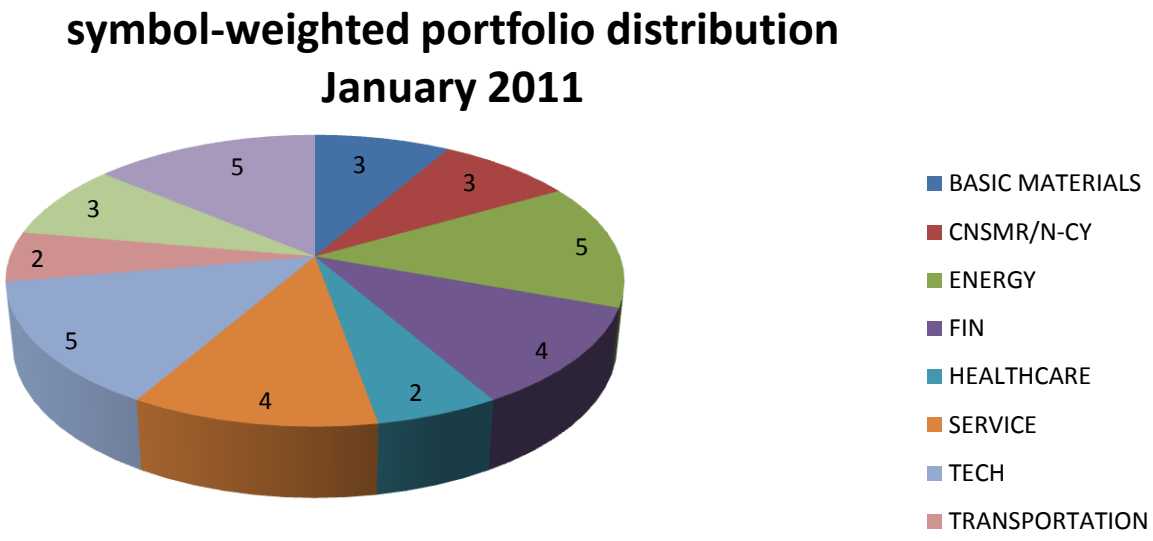

Figure 9 Limited Investor's symbol-weighted portfolio distribution

3.4.4 Calendar Strategy for ETF

After some data analysis of the Club's portfolio for January 2012 we found that the Club had a large amount of ETFs on hold. We then found that the Club occasionally needs income stocks and ETFs for cash and therefore invest in other securities. Figure 10 is a graph of the net value in different sectors of January 2012:

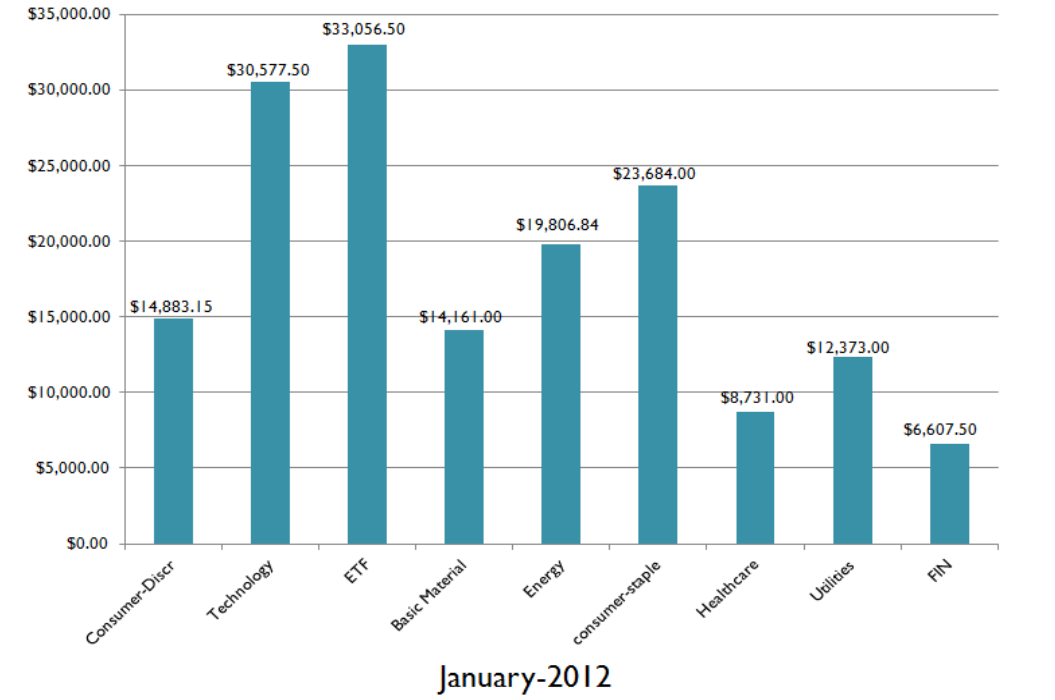

Figure 10 Limited Investor's Net Value in Sectors

According to the Sector Rotation Model, the calendar strategy takes advantage of those sectors that tend to do well during specific times of the year. Retailers always have additional sales opportunities at the time while students are going back to school. Also, the Christmas holiday often provides retailers with additional sales and travel-related opportunities. Stocks with relationship of the retailers should be benefited at the time.

We recommend that Limited Investors apply timely Sector Rotation Analysis to diversify the portfolio and consider reduce the risk of the investments. Also, the Calendar Strategy for ETFs is worth consideration during specific times of the year.

3.5 Comparing Different Exit Strategies with Tradestation

From a conversation with two members of the Limited Investor Club, we analyzed how the stocks are selected after the Club members receive and exchange the information from Porter Stansberry's Newsletter. Usually they choose the stock with the lowest price and highest dividend, and then put a buy limit order when the market opens on the next Monday after they

receive the newsletter. This is done so that they can get the share at a reasonable price with relatively low slippage. Our goal is to enhance their overall performance by introducing a brand new idea of investment and trading, which becomes feasible with Tradestation.
Since we had only one year of historical data from Limited Investors, we decided to use daily bars when we back test our strategies on certain stocks. Several of the main indicators that appeared in the EasyLanguage file are Channel Length, N Bar since Entry, Fraction of Average True Range and Moving Average Length. These indicators are depicted below with their default value in the parenthesis:

```
ChanLen   (20),
NBEnt     (20),
FrATR     (1.0),
MALen     (20);
```

All the default values could be changed to improve the final result. We can apply the built-in optimization tool in Tradestation to measure the appropriate value for each parameter.

First, we developed a basic entry that used the same date and share that the Club used and initiated each succeeding entry only when the channel break out condition is satisfied. With this fixed entry, we then tested and compared different exit strategies, ranging from the most basic N bar exit to more sophisticated exits such as trailing stop and moving average cross. At the end, we generated the summary report for certain stocks selected from the portfolio that are representative and might appear attractive to Limited Investors.

3.5.1 Entry Strategy

The main reason to introduce an entry strategy in our system is to make the outcome comparable to the Limited Investor Club's outcome. Since the entry we applied to equities is simple and primitive the big changes in the final result could be accredited to different exit strategies.

Once the Club receives the monthly Porter Stansberry's newsletter, they usually look for the stocks with the lowest price and highest dividends and then they place a buy limit order the next

Monday when the market opens. Predictably, first part of the entry should be purchasing the stock precisely on the same day as the Club did. However, to ensure the consistency of our investment, we need a second part that enables us to enter the market after the exit strategy is triggered.

The EasyLanguage Code for the first part of entry rule is:

If Date = 1110130 and MarkPos = 0 Then Buy next bar at Market;

Here the date should be changed according to the exact date that the Club bought the stock. The code will first check whether the date matches the date that Club entered the market, and if the Club already had a position in the market, then the stock will be bought at next bar.
The EasyLanguage Code for the second part of the entry rule is:

If Date > 1110130 and MarkPos = 0 Then Buy next bar at Highest(H, ChanLen) {+ 1 point} stop;

At first, the strategy checks whether current date is after the entry date, and whether current market position is empty. Thereafter, it will enter the market when the channel breakout rule is satisfied. By summarizing the previous 20 bars and identifying the highest price that the stock reached, Tradestation will put an order once the current price is 1 point above the historical highest price.
Using this set of entries, we can imitate the entry behavior of the Club; while thoroughly testing the exit strategy by introducing a mechanism that enables us to re-enter the market under certain circumstances.

3.5.2 Exit Strategy

With many different exit strategies, we can analyze the outcome in a more systematic and comprehensive way. Each exit strategy is developed with a specific goal and purpose.

Strategy Performance Report

In order to provide an unbiased view of how our strategy performs, we felt that it was necessary to include a quantitative summary of the final result. A strategy performance report is a built-in trading summary that is automatically generated after strategy has been applied to a given stock.

Certain statistics and figures are crucial in the summary[12]:

Total Net Profit – The amount of money that a strategy win or lose

Profit Factor – The number of dollars (profit) make for every dollar lose

Total Number of Trades - The total number of trades that is generated by the strategy

Percentage Profitable - The percentage of trades that is profitable

Avg. Trade Net Profit - The average amounts of money win or lose over all the trades.

Account Size Required - The minimum amount of money required to trade the strategy

Return on Initial Capital - The percentage return of the Total Net Profit to the initial starting capital, (including commissions and slippage if specified), during the specified period of time. The formula is: Return on Initial Capital = Total Net Profit divided by Initial Capital.

Annual Rate of Return - The percentage return of the strategy during the testing period of time

Buy & Hold Return - The percentage return of holding the security in a long position for the entire testing period of the strategy, as a comparison to the strategy return. Displays for All Trade only.

[12] Jeffrey Owen Katz, The Encyclopedia of Trading Strategies

Return on Account – The amount of money expected to make versus the amount of money required to trade the strategy, taking margin and margin calls into consideration. This value is calculated by dividing the net profit by the account size required.

Exit at N bar since Entry

Introduced as a base-line entry strategy in the system, exit at N bar since entry has the most primitive and simplest idea. The strategy simply sells all the shares after N bars since entry, regardless of profit or loss.

Easy Language code for this strategy is:

If MarketPosition = 1 and BarsSinceEntry = NBEnt then
Sell next bar at market;

Figure 11 Akamai TradeStation Profit Optimization for Exit at N bar

TradeStation Performance Summary Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$4,965.30	$4,965.30	$0.00
Gross Profit	$4,965.30	$4,965.30	$0.00
Gross Loss	$0.00	$0.00	$0.00
Profit Factor	n/a	n/a	n/a
Roll Over Credit	$0.00	$0.00	$0.00
Open Position P/L	$82.05	$82.05	$0.00
Select Total Net Profit	$4,965.30	$4,965.30	$0.00
Select Gross Profit	$4,965.30	$4,965.30	$0.00
Select Gross Loss	$0.00	$0.00	$0.00
Select Profit Factor	n/a	n/a	n/a
Adjusted Total Net Profit	$2,098.58	$2,098.58	$0.00
Adjusted Gross Profit	$2,098.58	$2,098.58	$0.00
Adjusted Gross Loss	$0.00	$0.00	$0.00
Adjusted Profit Factor	n/a	n/a	n/a
Total Number of Trades	3	3	0
Percent Profitable	100.00%	100.00%	0.00%
Winning Trades	3	3	0
Losing Trades	0	0	0
Even Trades	0	0	0
Avg. Trade Net Profit	$1,655.10	$1,655.10	$0.00
Avg. Winning Trade	$1,655.10	$1,655.10	$0.00
Avg. Losing Trade	$0.00	$0.00	$0.00
Ratio Avg. Win:Avg. Loss	n/a	n/a	n/a
Largest Winning Trade	$1,910.10	$1,910.10	$0.00
Largest Losing Trade	$0.00	$0.00	$0.00
Largest Winner as % of Gross Profit	38.47%	38.47%	n/a
Largest Loser as % of Gross Loss	n/a	n/a	n/a
Net Profit as % of Largest Loss	n/a	n/a	n/a
Select Net Profit as % of Largest Loss	n/a	n/a	n/a
Adjusted Net Profit as % of Largest Loss	n/a	n/a	n/a

Figure 12 AKAM Profit Optimization for Exit at N bar Report

Figure 11 and Figure 12 are the performance reports of Exit N bar strategy. The values of parameters after optimization changed, as the system gave us 4 for Channel length and 24 for N. Compared to the result of Limited Investor, which is $2,836, the outcome achieved by our strategy is better. However, this strategy may not perform well on some other equities. The huge success of AKAM relies on the profitable nature of the equity.

Exit with a trailing stop

The Club currently uses its own version of trailing stop, which puts a 15% trailing stop on the previous high as long as the price goes below 15% of the previous high. Once this condition occurs, a trail signal is turned on, and the stock is sold at next bar. The trailing strategy

introduced below is different and it is suggested that the Club should make changes to achieve the best performance of the strategy.

Easy Language code for trailing stop:

If MarketPosition = 1 and TrailOn = FALSE and (Close - EntryPrice) > FrATR * ATR then TrailOn = TRUE;

If Marketposition = 1 and TrailOn then

Sell next bar at (EntryPrice + 0.5 * (C - EntryPrice)) stop;

Above, a trail signal is identified when the close price is above the entry price by some multiples of average true range. A sell stop order is then put at the price above entry price by 0.5 * (C - EntryPrice).

Figure 13 AKAM Profit Optimization for Trailing Stop

TradeStation Performance Summary Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$759.60	$759.60	$0.00
Gross Profit	$905.40	$905.40	$0.00
Gross Loss	($145.80)	($145.80)	$0.00
Profit Factor	6.21	6.21	n/a
Roll Over Credit	$0.00	$0.00	$0.00
Open Position P/L	$0.00	$0.00	$0.00
Select Total Net Profit	$759.60	$759.60	$0.00
Select Gross Profit	$905.40	$905.40	$0.00
Select Gross Loss	($145.80)	($145.80)	$0.00
Select Profit Factor	6.21	6.21	n/a
Adjusted Total Net Profit	$203.80	$203.80	$0.00
Adjusted Gross Profit	$452.70	$452.70	$0.00
Adjusted Gross Loss	($248.90)	($248.90)	$0.00
Adjusted Profit Factor	1.82	1.82	n/a
Total Number of Trades	6	6	0
Percent Profitable	66.67%	66.67%	0.00%
Winning Trades	4	4	0
Losing Trades	2	2	0
Even Trades	0	0	0
Avg. Trade Net Profit	$126.60	$126.60	$0.00
Avg. Winning Trade	$226.35	$226.35	$0.00
Avg. Losing Trade	($72.90)	($72.90)	$0.00
Ratio Avg. Win:Avg. Loss	3.10	3.10	n/a
Largest Winning Trade	$473.10	$473.10	$0.00
Largest Losing Trade	($90.90)	($90.90)	$0.00
Largest Winner as % of Gross Profit	52.25%	52.25%	n/a
Largest Loser as % of Gross Loss	62.35%	62.35%	n/a
Net Profit as % of Largest Loss	835.64%	835.64%	n/a
Select Net Profit as % of Largest Loss	835.64%	835.64%	n/a
Adjusted Net Profit as % of Largest Loss	224.21%	224.21%	n/a

Figure 14 AKAM Profit Optimization for Trailing Stop Summary

As we can see from Figure 13 and Figure 14, although the trailing stop is more sophisticated and complicated than the previous exit strategy, the performance is not as good as the previous one. There is no "Holy Grail" exit for every single stock, and that is the reason we should identify the strategy that works best for given stocks.

Exit at a Profit Target

Securing the profit that has already been made is one way to control the risk. To further secure the profit, we developed the exit at profit target strategy.

Easy Language code for the strategy:

If MarketPosition = 1 then Sell next bar at EntryPrice + FrATR * ATR limit;

This strategy will put a sell limit order every time the market price is higher than entry price by multiples of the average true range. Figure 15 below is the trades generated after applying the strategy.

Figure 15 AKAM Profit Optimization for Profit target

TradeStation Performance Summary Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$3,815.40	$3,815.40	$0.00
Gross Profit	$3,815.40	$3,815.40	$0.00
Gross Loss	$0.00	$0.00	$0.00
Profit Factor	n/a	n/a	n/a
Roll Over Credit	$0.00	$0.00	$0.00
Open Position P/L	($241.95)	($241.95)	$0.00
Select Total Net Profit	$3,815.40	$3,815.40	$0.00
Select Gross Profit	$3,815.40	$3,815.40	$0.00
Select Gross Loss	$0.00	$0.00	$0.00
Select Profit Factor	n/a	n/a	n/a
Adjusted Total Net Profit	$1,907.70	$1,907.70	$0.00
Adjusted Gross Profit	$1,907.70	$1,907.70	$0.00
Adjusted Gross Loss	$0.00	$0.00	$0.00
Adjusted Profit Factor	n/a	n/a	n/a
Total Number of Trades	4	4	0
Percent Profitable	100.00%	100.00%	0.00%
Winning Trades	4	4	0
Losing Trades	0	0	0
Even Trades	0	0	0
Avg. Trade Net Profit	$953.85	$953.85	$0.00
Avg. Winning Trade	$953.85	$953.85	$0.00
Avg. Losing Trade	$0.00	$0.00	$0.00
Ratio Avg. Win:Avg. Loss	n/a	n/a	n/a
Largest Winning Trade	$1,391.10	$1,391.10	$0.00
Largest Losing Trade	$0.00	$0.00	$0.00
Largest Winner as % of Gross Profit	36.46%	36.46%	n/a
Largest Loser as % of Gross Loss	n/a	n/a	n/a
Net Profit as % of Largest Loss	n/a	n/a	n/a
Select Net Profit as % of Largest Loss	n/a	n/a	n/a
Adjusted Net Profit as % of Largest Loss	n/a	n/a	n/a

Figure 16 AKAM Profit Optimization for Profit target Summary

From Figure 16, the exit ends up with a huge net profit, which is what we expected. However, one undesirable aspect is that the strategy leaves a huge negative open position.

Exit at a moving average crossover

Moving average is now widely accepted as a mainstream indicator that reflects the fluctuation and trend in the near future over a certain period of time. Crossover of moving average usually signals approaching up or down trend as we have used the "Golden Cross" and "Death Cross" to identify the Bull and Bear Market respectively.

The Easy Language code for moving average crossover:

If MarketPosition = 1 and C < Average(C, MALen) then

Sell next bar at market;

Once the close price is below the average close price over a period of time that equals the moving average length, usually a downtrend follows up, and the strategy will sell the stock at next bar. Figure 17 and Figure 18 is the outcome after applying the moving average crossover strategy.

Figure 17 AKAM Profit Optimization for Moving average crossover

TradeStation Performance Summary Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$2,204.40	$2,204.40	$0.00
Gross Profit	$2,499.30	$2,499.30	$0.00
Gross Loss	($294.90)	($294.90)	$0.00
Profit Factor	8.48	8.48	n/a
Roll Over Credit	$0.00	$0.00	$0.00
Open Position P/L	($283.95)	($283.95)	$0.00
Select Total Net Profit	$2,204.40	$2,204.40	$0.00
Select Gross Profit	$2,499.30	$2,499.30	$0.00
Select Gross Loss	($294.90)	($294.90)	$0.00
Select Profit Factor	8.48	8.48	n/a
Adjusted Total Net Profit	$466.53	$466.53	$0.00
Adjusted Gross Profit	$1,056.33	$1,056.33	$0.00
Adjusted Gross Loss	($589.80)	($589.80)	$0.00
Adjusted Profit Factor	1.79	1.79	n/a
Total Number of Trades	4	4	0
Percent Profitable	75.00%	75.00%	0.00%
Winning Trades	3	3	0
Losing Trades	1	1	0
Even Trades	0	0	0
Avg. Trade Net Profit	$551.10	$551.10	$0.00
Avg. Winning Trade	$833.10	$833.10	$0.00
Avg. Losing Trade	($294.90)	($294.90)	$0.00
Ratio Avg. Win:Avg. Loss	2.83	2.83	n/a
Largest Winning Trade	$1,355.10	$1,355.10	$0.00
Largest Losing Trade	($294.90)	($294.90)	$0.00
Largest Winner as % of Gross Profit	54.22%	54.22%	n/a
Largest Loser as % of Gross Loss	100.00%	100.00%	n/a

Figure 18 AKAM Profit Optimization for Moving average crossover Summary

The performance of moving average exit in this case was slightly under-performed by the Club's performance. It also left an open position of $283 dollars, which we are trying to avoid by all means.

Exit on RSI movement

Developed by J. Welles Wilder, the Relative Strength Index (RSI) is a momentum oscillator that measures the speed and change of price movements. RSI oscillates between 0 and 100. According to Wilder, RSI is traditionally considered overbought when above 70 and oversold when below 30.

According to the threshold value of RSI, we came up with the following strategy in Easy Language:

If MarketPosition = 1 and RSI(C, 14) crosses above 70 then
Sell next bar at market;

The strategy will sell the stock at next market as long as the relative strength index over 14 bars reaches above 70, which indicates an overbought.

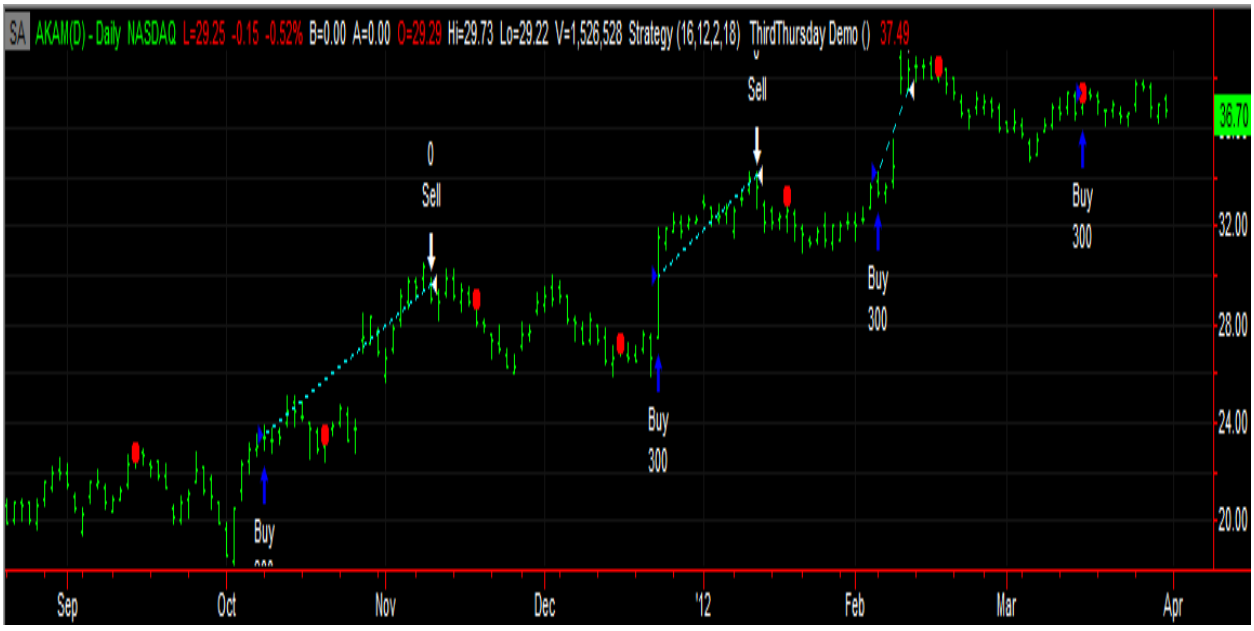

Figure 19 AKAM Profit Optimization for RSI movement

TradeStation Performance Summary Collapse

	All Trades	Long Trades	Short Trades
Total Net Profit	$4,041.30	$4,041.30	$0.00
Gross Profit	$4,041.30	$4,041.30	$0.00
Gross Loss	$0.00	$0.00	$0.00
Profit Factor	n/a	n/a	n/a
Roll Over Credit	$0.00	$0.00	$0.00
Open Position P/L	($241.95)	($241.95)	$0.00
Select Total Net Profit	$4,041.30	$4,041.30	$0.00
Select Gross Profit	$4,041.30	$4,041.30	$0.00
Select Gross Loss	$0.00	$0.00	$0.00
Select Profit Factor	n/a	n/a	n/a
Adjusted Total Net Profit	$1,708.05	$1,708.05	$0.00
Adjusted Gross Profit	$1,708.05	$1,708.05	$0.00
Adjusted Gross Loss	$0.00	$0.00	$0.00
Adjusted Profit Factor	n/a	n/a	n/a
Total Number of Trades	3	3	0
Percent Profitable	100.00%	100.00%	0.00%
Winning Trades	3	3	0
Losing Trades	0	0	0
Even Trades	0	0	0
Avg. Trade Net Profit	$1,347.10	$1,347.10	$0.00
Avg. Winning Trade	$1,347.10	$1,347.10	$0.00
Avg. Losing Trade	$0.00	$0.00	$0.00
Ratio Avg. Win:Avg. Loss	n/a	n/a	n/a
Largest Winning Trade	$1,835.10	$1,835.10	$0.00
Largest Losing Trade	$0.00	$0.00	$0.00
Largest Winner as % of Gross Profit	45.41%	45.41%	n/a
Largest Loser as % of Gross Loss	n/a	n/a	n/a
Net Profit as % of Largest Loss	n/a	n/a	n/a
Select Net Profit as % of Largest Loss	n/a	n/a	n/a
Adjusted Net Profit as % of Largest Loss	n/a	n/a	n/a

Figure 20 AKAM Profit Optimization for RSI movement Summary

The strategy successfully exited the market before every down movement, and thus avoided potentially huge losses on the share.

3.5.3 Comparison of different exit strategy

AKAM	Exit N bar	Trailing Stop	profit target	moving average across	RSI movement
No. of trades	3	6	4	4	3
losing trades	3	4	4	3	3
winning trades	0	2	0	1	0
total loss/profit	4965.3	759.6	3815.4	2204.4	4041.3
Open Position	82.05	0	241.95	283.95	241.95

Figure 21 Comparison report of our strategy's performance and Limited Investor's performance

As we observe from Figure 21, it is surprising to see that the most primitive strategy achieved the best outcome at the end of the experiment. One reasonable explanation could be based on the profitable nature of AKAM over this period. Because of the lucrative property of AKAM, any strategy could end up with a more or less positive result.

4. Conclusions

The primary and most important goal of this Interactive Qualifying Project is to help the Limited Investors' Club to comprehensively understand their current performance, and make constructive suggestions and recommendations that would enlighten the Club of various trading and analysis techniques.

According to the correlation analysis conducted on the overall portfolio, and on the stocks from different sectors and markets, the Limited Investors' Club had a well-diversified portfolio. Stocks with different correlations were scattered over the whole portfolio. This can be seen when we checked EXC (Exelon Corporation) and ATVI (Activision Blizzard, Inc.), two of the stocks that suffered the most loss during last year. Both EXC and ATVI had a zero correlation with other stocks in the portfolio. However, the net change of the overall portfolio was still positive.

As one of the most effective and convenient ways to minimize the potential risk, portfolio diversification may be worth the Club's attention for future trading and investments. Our suggestions may be broken down into the following steps:

1. Carefully check the correlation with the current portfolio when purchasing new stocks.

We recommend that the Club download the weekly prices for each stock from Yahoo Finance, load the CSV file into excel, and use either SPSS or MS Excel to get the correlation coefficient between each pair of stocks. Depending on the specific strategy the Club intends to use when trading, they may confidently modify the portfolio based on the correlation analysis. In a bull market, for instance, when every stocks is performing excellent, a portfolio with relatively high correlation might be perfect, since every stock will move in the same direction as the market does. However, in a bear or a more volatile market, a moderately diversified portfolio should be appropriate, as it lowers the potential risk by mixing stocks with low correlations.

2. Pay attention to the sectors that big institutions are moving their cash to.

It is important to check the Sector Rotation Graph at a regular time basis to see where the big institutions are moving their money. The Club should adjust the portfolio distribution in different industries and sectors based on the foundation of the Sector Rotation Model in order to diversify the portfolio and reduce the risk.

Also, at certain periods of time of the year, we recommend that the Club use the Calendar Strategy of the Sector Rotation model if the Club needs cash to purchase new stocks or ETFs for income.

3. Choose the best exit strategy that works for different kinds of stocks

Although some people still strongly believe in the existence of a "Holy Grail" exit strategy, more and more traders have come to the realization that no simple exit strategy guarantees a good or even mediocre performance. However, due to the flexible nature of the stocks, people are more likely to trust exit strategies that have been tested over substantial historical data and proved to be effective in the future market given that no sudden and unforeseen events occur. We have used AKAM as a sample to introduce some basic feature of Tradestation. The same test and experiment is feasible and convenient for all equities in the portfolio, and the Club could even create their own strategy according to their trading preferences or habits.

5. References

[1] Tharp, V. (2006). Expectancy Report. Van Tharp Institute , 40.

[2] Wright, C. Trading as a Business

[3] Jeffrey Owen Katz, The Encyclopedia of Trading Strategies

[4] Trading Platform. (2011). Retrieved April 26, 2011, from TradeStation Security http://www.tradestation.com/platform/overview.shtm

[5] EasyLanguage. (2011). Retrieved April 26, 2011, from TradeStation Security http://www.tradestation.com/strategy_testing/st_creation.shtm

[6] 8 Different ways to diversity and manage risk. (2011). Retrieved May 15, 2011, from Personal Finance Blog from Silicon Valley: http://www.thedigeratilife.com/blog/index.php/2007/06/01/8-different-ways-to-diversify-and-manage-risk/

[7] Chip Anderson, Sector Rotation Review 2011, Jan 7 2012, from Stockcharts.com http://blogs.stockcharts.com/chartwatchers/2012/01/sector-rotation-review-2011.html?st=sector+rotation+john+murphy+

[8] Stockcharts ChartSchool, Sector Rotation based on Performance, http://stockcharts.com/school/doku.php?st=sector+rotation+john+murphy+&id=chart_school:trading_strategies:sector_rotation_roc

[9] Tips for Diversifying your Portfolio. (2011). Retrieved May 15, 2011, from ivestopedia: http://www.investopedia.com/articles/03/072303.asp

[10] Sector Rotation based on Performance: http://stockcharts.com/school/doku.php?st=sector&id=chart_school:trading_strategies:sector_rotation_roc

[11] The Sector Rotation Model: http://blogs.stockcharts.com/chartwatchers/2011/04/the-sector-rotation-model.html

6. Appendixes

Table 4 Correlation of Limited Investors' Portfolio

		HSY	COP	WMT	MON	EXC	D
HSY	Pearson Correlation	1	.961**	.673**	.603**	-.357*	.728**
	Sig. (2-tailed)		.000	.000	.000	.017	.000
	N	44	44	44	44	44	44
COP	Pearson Correlation	.961**	1	.692**	.639**	-.349*	.731**
	Sig. (2-tailed)	.000		.000	.000	.020	.000
	N	44	44	44	44	44	44
WMT	Pearson Correlation	.673**	.692**	1	.741**	-.366*	.667**
	Sig. (2-tailed)	.000	.000		.000	.015	.000
	N	44	44	44	44	44	44
MON	Pearson Correlation	.603**	.639**	.741**	1	-.415**	.494**
	Sig. (2-tailed)	.000	.000	.000		.005	.001
	N	44	44	44	44	44	44
EXC	Pearson Correlation	-.357*	-.349*	-.366*	-.415**	1	.127
	Sig. (2-tailed)	.017	.020	.015	.005		.410
	N	44	44	44	44	44	44
D	Pearson Correlation	.728**	.731**	.667**	.494**	.127	1
	Sig. (2-tailed)	.000	.000	.000	.001	.410	
	N	44	44	44	44	44	44
SLV	Pearson Correlation	-.593**	-.591**	-.626**	-.272	.051	-.746**
	Sig. (2-tailed)	.000	.000	.000	.075	.742	.000
	N	44	44	44	44	44	44
ATVI	Pearson Correlation	.460**	.503**	.565**	.534**	.247	.746**
	Sig. (2-tailed)	.002	.001	.000	.000	.106	.000
	N	44	44	44	44	44	44
TGP	Pearson Correlation	.185	.243	.348*	.621**	-.461**	-.101
	Sig. (2-tailed)	.230	.112	.020	.000	.002	.513

	N	44	44	44	44	44	44
CHK	Pearson Correlation	-.726**	-.694**	-.796**	-.497**	.403**	-.708**
	Sig. (2-tailed)	.000	.000	.000	.001	.007	.000
	N	44	44	44	44	44	44
EOG	Pearson Correlation	.028	.031	.526**	.496**	-.431**	-.097
	Sig. (2-tailed)	.857	.839	.000	.001	.004	.529
	N	44	44	44	44	44	44

Correlations

		SLV	ATVI	TGP	CHK	EOG	GDX
HSY	Pearson Correlation	-.593	.460**	.185**	-.726**	.028*	-.299**
	Sig. (2-tailed)	.000	.002	.230	.000	.857	.049
	N	44	44	44	44	44	44
COP	Pearson Correlation	-.591**	.503	.243**	-.694**	.031*	-.322**
	Sig. (2-tailed)	.000	.001	.112	.000	.839	.033
	N	44	44	44	44	44	44
WMT	Pearson Correlation	-.626**	.565**	.348	-.796**	.526*	-.419**
	Sig. (2-tailed)	.000	.000	.020	.000	.000	.005
	N	44	44	44	44	44	44
MON	Pearson Correlation	-.272**	.534**	.621**	-.497	.496**	-.198**
	Sig. (2-tailed)	.075	.000	.000	.001	.001	.197
	N	44	44	44	44	44	44
EXC	Pearson Correlation	.051*	.247*	-.461*	.403**	-.431	.338
	Sig. (2-tailed)	.742	.106	.002	.007	.004	.025
	N	44	44	44	44	44	44
D	Pearson Correlation	-.746**	.746**	-.101**	-.708**	-.097	-.244
	Sig. (2-tailed)	.000	.000	.513	.000	.529	.110
	N	44	44	44	44	44	44
SLV	Pearson Correlation	1**	-.550**	.105**	.821	.042	.703**
	Sig. (2-tailed)		.000	.496	.000	.788	.000

	N	44	44	44	44	44	44
ATVI	Pearson Correlation	-.550**	1**	.069**	-.413**	-.057	-.060**
	Sig. (2-tailed)	.000		.655	.005	.711	.700
	N	44	44	44	44	44	44
TGP	Pearson Correlation	.105	.069	1*	.049**	.715**	-.277
	Sig. (2-tailed)	.496	.655		.752	.000	.068
	N	44	44	44	44	44	44
CHK	Pearson Correlation	.821**	-.413**	.049**	1**	-.112**	.529**
	Sig. (2-tailed)	.000	.005	.752		.469	.000
	N	44	44	44	44	44	44
EOG	Pearson Correlation	.042	-.057	.715**	-.112**	1**	-.308
	Sig. (2-tailed)	.788	.711	.000	.469		.042
	N	44	44	44	44	44	44

Correlations							
		UNP	MSFT	GE	INTC	KFT	PFE
HSY	Pearson Correlation	.388	.723**	.079**	.668**	.780*	.389**
	Sig. (2-tailed)	.009	.000	.611	.000	.000	.009
	N	44	44	44	44	44	44
COP	Pearson Correlation	.421**	.747	.148**	.691**	.789*	.423**
	Sig. (2-tailed)	.004	.000	.338	.000	.000	.004
	N	44	44	44	44	44	44
WMT	Pearson Correlation	.800**	.669**	.383	.933**	.885*	.752**
	Sig. (2-tailed)	.000	.000	.010	.000	.000	.000
	N	44	44	44	44	44	44
MON	Pearson Correlation	.760**	.853**	.383**	.795	.825**	.544**
	Sig. (2-tailed)	.000	.000	.010	.000	.000	.000
	N	44	44	44	44	44	44
EXC	Pearson Correlation	-.459*	-.573*	-.449*	-.412**	-.512	-.404
	Sig. (2-tailed)	.002	.000	.002	.005	.000	.006

	N	44	44	44	44	44	44
D	Pearson Correlation	.269**	.441**	-.203**	.627**	.578	.238
	Sig. (2-tailed)	.077	.003	.186	.000	.000	.120
	N	44	44	44	44	44	44
SLV	Pearson Correlation	-.338**	-.197**	-.028**	-.603	-.502	-.427**
	Sig. (2-tailed)	.025	.199	.855	.000	.001	.004
	N	44	44	44	44	44	44
ATVI	Pearson Correlation	.250**	.411**	-.093**	.592**	.379	.177**
	Sig. (2-tailed)	.102	.006	.547	.000	.011	.250
	N	44	44	44	44	44	44
TGP	Pearson Correlation	.715	.630	.819*	.510**	.493**	.598
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.000
	N	44	44	44	44	44	44
CHK	Pearson Correlation	-.476**	-.462**	-.001**	-.711**	-.726**	-.470**
	Sig. (2-tailed)	.001	.002	.993	.000	.000	.001
	N	44	44	44	44	44	44
EOG	Pearson Correlation	.861	.420	.815**	.563**	.548**	.784
	Sig. (2-tailed)	.000	.005	.000	.000	.000	.000
	N	44	44	44	44	44	44

Correlations							
		T	VZ	MCD	THD	AGNC	AKAM
HSY	Pearson Correlation	-.118	.742**	.842**	-.194**	-.086*	.228**
	Sig. (2-tailed)	.445	.000	.000	.208	.580	.137
	N	44	44	44	44	44	44
COP	Pearson Correlation	-.065**	.767	.829**	-.176**	-.138*	.247**
	Sig. (2-tailed)	.674	.000	.000	.254	.372	.107
	N	44	44	44	44	44	44
WMT	Pearson Correlation	.192**	.828**	.822	-.023**	.198*	.684**
	Sig. (2-tailed)	.212	.000	.000	.882	.197	.000

	N	44	44	44	44	44	44
MON	Pearson Correlation	.174**	.537**	.720**	.198	.222**	.526**
	Sig. (2-tailed)	.258	.000	.000	.199	.148	.000
	N	44	44	44	44	44	44
EXC	Pearson Correlation	-.244*	-.160*	-.283*	-.349**	-.500	-.461
	Sig. (2-tailed)	.110	.300	.063	.020	.001	.002
	N	44	44	44	44	44	44
D	Pearson Correlation	-.284**	.685**	.838**	-.492**	-.354	.104
	Sig. (2-tailed)	.062	.000	.000	.001	.018	.501
	N	44	44	44	44	44	44
SLV	Pearson Correlation	.003**	-.687**	-.591**	.626	.192	-.282**
	Sig. (2-tailed)	.984	.000	.000	.000	.212	.064
	N	44	44	44	44	44	44
ATVI	Pearson Correlation	-.133**	.504**	.530**	-.452**	-.335	.140**
	Sig. (2-tailed)	.388	.000	.000	.002	.026	.365
	N	44	44	44	44	44	44
TGP	Pearson Correlation	.711	.332	.102*	.650**	.658**	.719
	Sig. (2-tailed)	.000	.028	.509	.000	.000	.000
	N	44	44	44	44	44	44
CHK	Pearson Correlation	.144**	-.652**	-.823**	.433**	.051**	-.331**
	Sig. (2-tailed)	.351	.000	.000	.003	.741	.028
	N	44	44	44	44	44	44
EOG	Pearson Correlation	.703	.383	.184**	.696**	.787**	.893
	Sig. (2-tailed)	.000	.010	.232	.000	.000	.000
	N	44	44	44	44	44	44

Correlations							
		BAC	CAG	CHKM	CPNO	GLD	IBM
HSY	Pearson Correlation	-.578	.625**	.661**	.341**	.252*	.730**
	Sig. (2-tailed)	.000	.000	.000	.023	.100	.000

	N	44	44	44	44	44	44
COP	Pearson Correlation	-.529**	.683	.704**	.341**	.196*	.733**
	Sig. (2-tailed)	.000	.000	.000	.023	.202	.000
	N	44	44	44	44	44	44
WMT	Pearson Correlation	-.331**	.776**	.495	.558**	.071*	.825**
	Sig. (2-tailed)	.028	.000	.001	.000	.649	.000
	N	44	44	44	44	44	44
MON	Pearson Correlation	-.202**	.788**	.653**	.633	.212**	.760**
	Sig. (2-tailed)	.189	.000	.000	.000	.166	.000
	N	44	44	44	44	44	44
EXC	Pearson Correlation	-.131*	-.345*	-.517*	-.410**	-.069	-.183
	Sig. (2-tailed)	.398	.022	.000	.006	.656	.235
	N	44	44	44	44	44	44
D	Pearson Correlation	-.770**	.439**	.260**	.121**	.271	.780
	Sig. (2-tailed)	.000	.003	.088	.435	.075	.000
	N	44	44	44	44	44	44
SLV	Pearson Correlation	.505**	-.457**	-.225**	-.080	.237	-.575**
	Sig. (2-tailed)	.000	.002	.143	.606	.122	.000
	N	44	44	44	44	44	44
ATVI	Pearson Correlation	-.465**	.433**	.082**	.027**	.169	.691**
	Sig. (2-tailed)	.001	.003	.596	.864	.272	.000
	N	44	44	44	44	44	44
TGP	Pearson Correlation	.540	.705	.498*	.801**	-.306**	.314
	Sig. (2-tailed)	.000	.000	.001	.000	.043	.038
	N	44	44	44	44	44	44
CHK	Pearson Correlation	.624**	-.475**	-.410**	-.209**	-.155**	-.675**
	Sig. (2-tailed)	.000	.001	.006	.174	.315	.000
	N	44	44	44	44	44	44
EOG	Pearson Correlation	.478	.596	.331**	.843**	-.283**	.298
	Sig. (2-tailed)	.001	.000	.028	.000	.063	.049

	N	44	44	44	44	44	44

Correlations							
		JNJ	MCHFX	NEM	OGMCX	PGP	PHK
HSY	Pearson Correlation	-.107	-.773**	.442**	-.707**	-.509*	-.492**
	Sig. (2-tailed)	.490	.000	.003	.000	.000	.001
	N	44	44	44	44	44	44
COP	Pearson Correlation	-.051**	-.742	.404**	-.704**	-.473*	-.443**
	Sig. (2-tailed)	.742	.000	.006	.000	.001	.003
	N	44	44	44	44	44	44
WMT	Pearson Correlation	.149**	-.524**	.325	-.767**	-.075*	-.045**
	Sig. (2-tailed)	.333	.000	.031	.000	.629	.770
	N	44	44	44	44	44	44
MON	Pearson Correlation	.238**	-.323**	.213**	-.464	-.061**	-.051**
	Sig. (2-tailed)	.120	.033	.166	.002	.694	.743
	N	44	44	44	44	44	44
EXC	Pearson Correlation	-.063*	.168*	.282*	.396**	-.177	-.115
	Sig. (2-tailed)	.685	.277	.063	.008	.251	.456
	N	44	44	44	44	44	44
D	Pearson Correlation	-.244**	-.797**	.703**	-.703**	-.633	-.574
	Sig. (2-tailed)	.111	.000	.000	.000	.000	.000
	N	44	44	44	44	44	44
SLV	Pearson Correlation	.092**	.677**	-.327**	.893	.398	.355**
	Sig. (2-tailed)	.554	.000	.031	.000	.007	.018
	N	44	44	44	44	44	44
ATVI	Pearson Correlation	-.059**	-.430**	.651**	-.396**	-.357	-.278**
	Sig. (2-tailed)	.706	.004	.000	.008	.018	.068
	N	44	44	44	44	44	44
TGP	Pearson Correlation	.681	.349	-.462*	-.082**	.586**	.544
	Sig. (2-tailed)	.000	.020	.002	.596	.000	.000

	N	44	44	44	44	44	44
CHK	Pearson Correlation	.215**	.823**	-.425**	.920**	.462**	.445**
	Sig. (2-tailed)	.161	.000	.004	.000	.002	.002
	N	44	44	44	44	44	44
EOG	Pearson Correlation	.595	.315	-.413**	-.190**	.688**	.659
	Sig. (2-tailed)	.000	.037	.005	.216	.000	.000
	N	44	44	44	44	44	44

Correlations				
		RDS-B	WMB	WPX
HSY	Pearson Correlation	.370	-.057**	.479**
	Sig. (2-tailed)	.013	.715	.115
	N	44	44	12
COP	Pearson Correlation	.437**	-.043	.743**
	Sig. (2-tailed)	.003	.782	.006
	N	44	44	12
WMT	Pearson Correlation	.747**	.458**	.630
	Sig. (2-tailed)	.000	.002	.028
	N	44	44	12
MON	Pearson Correlation	.653**	.229**	.202**
	Sig. (2-tailed)	.000	.135	.528
	N	44	44	12
EXC	Pearson Correlation	-.079*	.239*	.444*
	Sig. (2-tailed)	.608	.118	.148
	N	44	44	12
D	Pearson Correlation	.417**	.169**	.193**
	Sig. (2-tailed)	.005	.273	.548
	N	44	44	12
SLV	Pearson Correlation	-.371**	-.212**	.524**
	Sig. (2-tailed)	.013	.166	.080

	N	44	44	12
ATVI	Pearson Correlation	.446**	.275**	.323**
	Sig. (2-tailed)	.002	.071	.306
	N	44	44	12
TGP	Pearson Correlation	.611	.363	.629*
	Sig. (2-tailed)	.000	.015	.028
	N	44	44	12
CHK	Pearson Correlation	-.330**	-.066**	.671**
	Sig. (2-tailed)	.028	.671	.017
	N	44	44	12
EOG	Pearson Correlation	.723	.644	-.032**
	Sig. (2-tailed)	.000	.000	.922
	N	44	44	12

Correlations							
		HSY	COP	WMT	MON	EXC	D
GDX	Pearson Correlation	-.299	-.322**	-.419**	-.198**	.338*	-.244**
	Sig. (2-tailed)	.049	.033	.005	.197	.025	.110
	N	44	44	44	44	44	44
UNP	Pearson Correlation	.388**	.421	.800**	.760**	-.459*	.269**
	Sig. (2-tailed)	.009	.004	.000	.000	.002	.077
	N	44	44	44	44	44	44
MSFT	Pearson Correlation	.723**	.747**	.669	.853**	-.573*	.441**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.003
	N	44	44	44	44	44	44
GE	Pearson Correlation	.079**	.148**	.383**	.383	-.449**	-.203**
	Sig. (2-tailed)	.611	.338	.010	.010	.002	.186
	N	44	44	44	44	44	44
INTC	Pearson Correlation	.668*	.691*	.933*	.795**	-.412	.627
	Sig. (2-tailed)	.000	.000	.000	.000	.005	.000

	N	44	44	44	44	44	44
KFT	Pearson Correlation	.780**	.789**	.885**	.825**	-.512	.578
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	44	44	44	44	44	44
PFE	Pearson Correlation	.389**	.423**	.752**	.544	-.404	.238**
	Sig. (2-tailed)	.009	.004	.000	.000	.006	.120
	N	44	44	44	44	44	44
T	Pearson Correlation	-.118**	-.065**	.192**	.174**	-.244	-.284**
	Sig. (2-tailed)	.445	.674	.212	.258	.110	.062
	N	44	44	44	44	44	44
VZ	Pearson Correlation	.742	.767	.828*	.537**	-.160**	.685
	Sig. (2-tailed)	.000	.000	.000	.000	.300	.000
	N	44	44	44	44	44	44
MCD	Pearson Correlation	.842**	.829**	.822**	.720**	-.283**	.838**
	Sig. (2-tailed)	.000	.000	.000	.000	.063	.000
	N	44	44	44	44	44	44
THD	Pearson Correlation	-.194	-.176	-.023**	.198**	-.349**	-.492
	Sig. (2-tailed)	.208	.254	.882	.199	.020	.001
	N	44	44	44	44	44	44

Correlations							
		SLV	ATVI	TGP	CHK	EOG	GDX
GDX	Pearson Correlation	.703	-.060**	-.277**	.529**	-.308*	1**
	Sig. (2-tailed)	.000	.700	.068	.000	.042	
	N	44	44	44	44	44	44
UNP	Pearson Correlation	-.338**	.250	.715**	-.476**	.861*	-.516**
	Sig. (2-tailed)	.025	.102	.000	.001	.000	.000
	N	44	44	44	44	44	44
MSFT	Pearson Correlation	-.197**	.411**	.630	-.462**	.420*	-.123**
	Sig. (2-tailed)	.199	.006	.000	.002	.005	.427

	N	44	44	44	44	44	44
GE	Pearson Correlation	-.028**	-.093**	.819**	-.001	.815**	-.491**
	Sig. (2-tailed)	.855	.547	.000	.993	.000	.001
	N	44	44	44	44	44	44
INTC	Pearson Correlation	-.603*	.592*	.510*	-.711**	.563	-.438
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.003
	N	44	44	44	44	44	44
KFT	Pearson Correlation	-.502**	.379**	.493**	-.726**	.548	-.425
	Sig. (2-tailed)	.001	.011	.001	.000	.000	.004
	N	44	44	44	44	44	44
PFE	Pearson Correlation	-.427**	.177**	.598**	-.470	.784	-.609**
	Sig. (2-tailed)	.004	.250	.000	.001	.000	.000
	N	44	44	44	44	44	44
T	Pearson Correlation	.003**	-.133**	.711**	.144**	.703	-.478**
	Sig. (2-tailed)	.984	.388	.000	.351	.000	.001
	N	44	44	44	44	44	44
VZ	Pearson Correlation	-.687	.504	.332*	-.652**	.383**	-.507
	Sig. (2-tailed)	.000	.000	.028	.000	.010	.000
	N	44	44	44	44	44	44
MCD	Pearson Correlation	-.591**	.530**	.102**	-.823**	.184**	-.231**
	Sig. (2-tailed)	.000	.000	.509	.000	.232	.131
	N	44	44	44	44	44	44
THD	Pearson Correlation	.626	-.452	.650**	.433**	.696**	.147
	Sig. (2-tailed)	.000	.002	.000	.003	.000	.342
	N	44	44	44	44	44	44

Correlations							
		UNP	MSFT	GE	INTC	KFT	PFE
GDX	Pearson Correlation	-.516	-.123**	-.491**	-.438**	-.425*	-.609**
	Sig. (2-tailed)	.000	.427	.001	.003	.004	.000

	N	44	44	44	44	44	44
UNP	Pearson Correlation	1**	.625	.772**	.825**	.823*	.903**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	44	44	44	44	44	44
MSFT	Pearson Correlation	.625**	1**	.362	.777**	.801*	.433**
	Sig. (2-tailed)	.000		.016	.000	.000	.003
	N	44	44	44	44	44	44
GE	Pearson Correlation	.772**	.362**	1**	.465	.455**	.815**
	Sig. (2-tailed)	.000	.016		.001	.002	.000
	N	44	44	44	44	44	44
INTC	Pearson Correlation	.825*	.777*	.465*	1**	.864	.709
	Sig. (2-tailed)	.000	.000	.001		.000	.000
	N	44	44	44	44	44	44
KFT	Pearson Correlation	.823**	.801**	.455**	.864**	1	.745
	Sig. (2-tailed)	.000	.000	.002	.000		.000
	N	44	44	44	44	44	44
PFE	Pearson Correlation	.903**	.433**	.815**	.709	.745	1**
	Sig. (2-tailed)	.000	.003	.000	.000	.000	
	N	44	44	44	44	44	44
T	Pearson Correlation	.612**	.103**	.923**	.265**	.216	.708**
	Sig. (2-tailed)	.000	.508	.000	.082	.160	.000
	N	44	44	44	44	44	44
VZ	Pearson Correlation	.667	.523	.453*	.782**	.783**	.774
	Sig. (2-tailed)	.000	.000	.002	.000	.000	.000
	N	44	44	44	44	44	44
MCD	Pearson Correlation	.516**	.699**	-.020**	.750**	.857**	.426**
	Sig. (2-tailed)	.000	.000	.897	.000	.000	.004
	N	44	44	44	44	44	44
THD	Pearson Correlation	.393	.299	.610**	.054**	.170**	.284
	Sig. (2-tailed)	.008	.048	.000	.729	.269	.062

	N	44	44	44	44	44	44

Correlations							
		T	VZ	MCD	THD	AGNC	AKAM
GDX	Pearson Correlation	-.478	-.507**	-.231**	.147**	-.245*	-.517**
	Sig. (2-tailed)	.001	.000	.131	.342	.109	.000
	N	44	44	44	44	44	44
UNP	Pearson Correlation	.612**	.667	.516**	.393**	.562*	.903**
	Sig. (2-tailed)	.000	.000	.000	.008	.000	.000
	N	44	44	44	44	44	44
MSFT	Pearson Correlation	.103**	.523**	.699	.299**	.230*	.488**
	Sig. (2-tailed)	.508	.000	.000	.048	.133	.001
	N	44	44	44	44	44	44
GE	Pearson Correlation	.923**	.453**	-.020**	.610	.713**	.864**
	Sig. (2-tailed)	.000	.002	.897	.000	.000	.000
	N	44	44	44	44	44	44
INTC	Pearson Correlation	.265*	.782*	.750*	.054**	.266	.733
	Sig. (2-tailed)	.082	.000	.000	.729	.081	.000
	N	44	44	44	44	44	44
KFT	Pearson Correlation	.216**	.783**	.857**	.170**	.316	.640
	Sig. (2-tailed)	.160	.000	.000	.269	.037	.000
	N	44	44	44	44	44	44
PFE	Pearson Correlation	.708**	.774**	.426**	.284	.556	.893**
	Sig. (2-tailed)	.000	.000	.004	.062	.000	.000
	N	44	44	44	44	44	44
T	Pearson Correlation	1**	.357**	-.234**	.496**	.682	.771**
	Sig. (2-tailed)		.018	.127	.001	.000	.000
	N	44	44	44	44	44	44
VZ	Pearson Correlation	.357	1	.701*	-.077**	.146**	.621
	Sig. (2-tailed)	.018		.000	.619	.344	.000

	N	44	44	44	44	44	44
MCD	Pearson Correlation	-.234**	.701**	1**	-.171**	-.086**	.278**
	Sig. (2-tailed)	.127	.000		.267	.580	.068
	N	44	44	44	44	44	44
THD	Pearson Correlation	.496	-.077	-.171**	1**	.671**	.443
	Sig. (2-tailed)	.001	.619	.267		.000	.003
	N	44	44	44	44	44	44

Correlations							
		BAC	CAG	CHKM	CPNO	GLD	IBM
GDX	Pearson Correlation	-.079	-.528**	-.276**	-.322**	.660*	-.260**
	Sig. (2-tailed)	.612	.000	.070	.033	.000	.088
	N	44	44	44	44	44	44
UNP	Pearson Correlation	.180**	.865	.581**	.842**	-.260*	.598**
	Sig. (2-tailed)	.242	.000	.000	.000	.089	.000
	N	44	44	44	44	44	44
MSFT	Pearson Correlation	-.197**	.713**	.667	.609**	.312*	.765**
	Sig. (2-tailed)	.200	.000	.000	.000	.039	.000
	N	44	44	44	44	44	44
GE	Pearson Correlation	.686**	.693**	.483**	.741	-.627**	.123**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.425
	N	44	44	44	44	44	44
INTC	Pearson Correlation	-.223*	.808*	.521*	.633**	.001	.878
	Sig. (2-tailed)	.145	.000	.000	.000	.997	.000
	N	44	44	44	44	44	44
KFT	Pearson Correlation	-.283**	.849**	.714**	.697**	.108	.770
	Sig. (2-tailed)	.063	.000	.000	.000	.486	.000
	N	44	44	44	44	44	44
PFE	Pearson Correlation	.226**	.826**	.570**	.757	-.437	.428**
	Sig. (2-tailed)	.141	.000	.000	.000	.003	.004

	N	44	44	44	44	44	44
T	Pearson Correlation	.786**	.535**	.269**	.597**	-.755	-.065**
	Sig. (2-tailed)	.000	.000	.077	.000	.000	.676
	N	44	44	44	44	44	44
VZ	Pearson Correlation	-.248	.805	.567*	.564**	-.198**	.689
	Sig. (2-tailed)	.104	.000	.000	.000	.198	.000
	N	44	44	44	44	44	44
MCD	Pearson Correlation	-.709**	.593**	.536**	.391**	.429**	.838**
	Sig. (2-tailed)	.000	.000	.000	.009	.004	.000
	N	44	44	44	44	44	44
THD	Pearson Correlation	.628	.236	.200**	.602**	-.073**	-.070
	Sig. (2-tailed)	.000	.123	.193	.000	.638	.650
	N	44	44	44	44	44	44

Correlations							
		JNJ	MCHFX	NEM	OGMCX	PGP	PHK
GDX	Pearson Correlation	-.289	.209**	.400**	.765**	-.099*	-.066**
	Sig. (2-tailed)	.057	.173	.007	.000	.522	.672
	N	44	44	44	44	44	44
UNP	Pearson Correlation	.549**	-.042	-.196**	-.537**	.389*	.385**
	Sig. (2-tailed)	.000	.789	.201	.000	.009	.010
	N	44	44	44	44	44	44
MSFT	Pearson Correlation	.075**	-.376**	.219	-.446**	-.088*	-.108**
	Sig. (2-tailed)	.626	.012	.153	.002	.569	.484
	N	44	44	44	44	44	44
GE	Pearson Correlation	.811**	.413**	-.647**	-.180	.761**	.742**
	Sig. (2-tailed)	.000	.005	.000	.242	.000	.000
	N	44	44	44	44	44	44
INTC	Pearson Correlation	.165*	-.427*	.257*	-.729**	.008	.020
	Sig. (2-tailed)	.284	.004	.092	.000	.960	.900

	N	44	44	44	44	44	44
KFT	Pearson Correlation	.215**	-.510**	.163**	-.718**	-.085	-.077
	Sig. (2-tailed)	.160	.000	.290	.000	.583	.621
	N	44	44	44	44	44	44
PFE	Pearson Correlation	.654**	-.050**	-.256**	-.568	.405	.430**
	Sig. (2-tailed)	.000	.745	.093	.000	.006	.004
	N	44	44	44	44	44	44
T	Pearson Correlation	.878**	.568**	-.710**	-.046**	.822	.817**
	Sig. (2-tailed)	.000	.000	.000	.767	.000	.000
	N	44	44	44	44	44	44
VZ	Pearson Correlation	.311	-.471	.221*	-.724**	-.073**	-.013
	Sig. (2-tailed)	.040	.001	.150	.000	.639	.934
	N	44	44	44	44	44	44
MCD	Pearson Correlation	-.197**	-.821**	.580**	-.746**	-.525**	-.492**
	Sig. (2-tailed)	.199	.000	.000	.000	.000	.001
	N	44	44	44	44	44	44
THD	Pearson Correlation	.450	.573	-.559**	.361**	.697**	.631
	Sig. (2-tailed)	.002	.000	.000	.016	.000	.000
	N	44	44	44	44	44	44

Correlations				
		RDS-B	WMB	WPX
GDX	Pearson Correlation	-.429	-.293**	.676**
	Sig. (2-tailed)	.004	.054	.016
	N	44	44	12
UNP	Pearson Correlation	.856**	.605	.452**
	Sig. (2-tailed)	.000	.000	.140
	N	44	44	12
MSFT	Pearson Correlation	.494**	.044**	.755
	Sig. (2-tailed)	.001	.776	.004

	N	44	44	12
GE	Pearson Correlation	.674**	.495**	.639**
	Sig. (2-tailed)	.000	.001	.025
	N	44	44	12
INTC	Pearson Correlation	.756*	.462*	.813*
	Sig. (2-tailed)	.000	.002	.001
	N	44	44	12
KFT	Pearson Correlation	.681**	.292**	.326**
	Sig. (2-tailed)	.000	.054	.301
	N	44	44	12
PFE	Pearson Correlation	.836**	.593**	-.057**
	Sig. (2-tailed)	.000	.000	.859
	N	44	44	12
T	Pearson Correlation	.563**	.495**	.475**
	Sig. (2-tailed)	.000	.001	.118
	N	44	44	12
VZ	Pearson Correlation	.766	.467	.906*
	Sig. (2-tailed)	.000	.001	.000
	N	44	44	12
MCD	Pearson Correlation	.472**	.112**	.146**
	Sig. (2-tailed)	.001	.467	.650
	N	44	44	12
THD	Pearson Correlation	.275	.260	.747**
	Sig. (2-tailed)	.070	.089	.005
	N	44	44	12

Correlations							
		HSY	COP	WMT	MON	EXC	D
AGNC	Pearson Correlation	-.086	-.138**	.198**	.222**	-.500*	-.354**
	Sig. (2-tailed)	.580	.372	.197	.148	.001	.018

	N	44	44	44	44	44	44
AKAM	Pearson Correlation	.228**	.247	.684**	.526**	-.461*	.104**
	Sig. (2-tailed)	.137	.107	.000	.000	.002	.501
	N	44	44	44	44	44	44
BAC	Pearson Correlation	-.578**	-.529**	-.331	-.202**	-.131*	-.770**
	Sig. (2-tailed)	.000	.000	.028	.189	.398	.000
	N	44	44	44	44	44	44
CAG	Pearson Correlation	.625**	.683**	.776**	.788	-.345**	.439**
	Sig. (2-tailed)	.000	.000	.000	.000	.022	.003
	N	44	44	44	44	44	44
CHKM	Pearson Correlation	.661*	.704*	.495*	.653**	-.517	.260
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.088
	N	44	44	44	44	44	44
CPNO	Pearson Correlation	.341**	.341**	.558**	.633**	-.410	.121
	Sig. (2-tailed)	.023	.023	.000	.000	.006	.435
	N	44	44	44	44	44	44
GLD	Pearson Correlation	.252**	.196**	.071**	.212	-.069	.271**
	Sig. (2-tailed)	.100	.202	.649	.166	.656	.075
	N	44	44	44	44	44	44
IBM	Pearson Correlation	.730**	.733**	.825**	.760**	-.183	.780**
	Sig. (2-tailed)	.000	.000	.000	.000	.235	.000
	N	44	44	44	44	44	44
JNJ	Pearson Correlation	-.107	-.051	.149*	.238**	-.063**	-.244
	Sig. (2-tailed)	.490	.742	.333	.120	.685	.111
	N	44	44	44	44	44	44
MCHFX	Pearson Correlation	-.773**	-.742**	-.524**	-.323**	.168**	-.797**
	Sig. (2-tailed)	.000	.000	.000	.033	.277	.000
	N	44	44	44	44	44	44
NEM	Pearson Correlation	.442	.404	.325**	.213**	.282**	.703
	Sig. (2-tailed)	.003	.006	.031	.166	.063	.000

	N	44	44	44	44	44	44

Correlations							
		SLV	ATVI	TGP	CHK	EOG	GDX
AGNC	Pearson Correlation	.192	-.335**	.658**	.051**	.787*	-.245**
	Sig. (2-tailed)	.212	.026	.000	.741	.000	.109
	N	44	44	44	44	44	44
AKAM	Pearson Correlation	-.282**	.140	.719**	-.331**	.893*	-.517**
	Sig. (2-tailed)	.064	.365	.000	.028	.000	.000
	N	44	44	44	44	44	44
BAC	Pearson Correlation	.505**	-.465**	.540	.624**	.478*	-.079**
	Sig. (2-tailed)	.000	.001	.000	.000	.001	.612
	N	44	44	44	44	44	44
CAG	Pearson Correlation	-.457**	.433**	.705**	-.475	.596**	-.528**
	Sig. (2-tailed)	.002	.003	.000	.001	.000	.000
	N	44	44	44	44	44	44
CHKM	Pearson Correlation	-.225*	.082*	.498*	-.410**	.331	-.276
	Sig. (2-tailed)	.143	.596	.001	.006	.028	.070
	N	44	44	44	44	44	44
CPNO	Pearson Correlation	-.080**	.027**	.801**	-.209**	.843	-.322
	Sig. (2-tailed)	.606	.864	.000	.174	.000	.033
	N	44	44	44	44	44	44
GLD	Pearson Correlation	.237**	.169**	-.306**	-.155	-.283	.660**
	Sig. (2-tailed)	.122	.272	.043	.315	.063	.000
	N	44	44	44	44	44	44
IBM	Pearson Correlation	-.575**	.691**	.314**	-.675**	.298	-.260**
	Sig. (2-tailed)	.000	.000	.038	.000	.049	.088
	N	44	44	44	44	44	44
JNJ	Pearson Correlation	.092	-.059	.681*	.215**	.595**	-.289
	Sig. (2-tailed)	.554	.706	.000	.161	.000	.057

	N	44	44	44	44	44	44
MCHFX	Pearson Correlation	.677**	-.430**	.349**	.823**	.315**	.209**
	Sig. (2-tailed)	.000	.004	.020	.000	.037	.173
	N	44	44	44	44	44	44
NEM	Pearson Correlation	-.327	.651	-.462**	-.425**	-.413**	.400
	Sig. (2-tailed)	.031	.000	.002	.004	.005	.007
	N	44	44	44	44	44	44

Correlations							
		UNP	MSFT	GE	INTC	KFT	PFE
AGNC	Pearson Correlation	.562	.230**	.713**	.266**	.316*	.556**
	Sig. (2-tailed)	.000	.133	.000	.081	.037	.000
	N	44	44	44	44	44	44
AKAM	Pearson Correlation	.903**	.488	.864**	.733**	.640*	.893**
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.000
	N	44	44	44	44	44	44
BAC	Pearson Correlation	.180**	-.197**	.686	-.223**	-.283*	.226**
	Sig. (2-tailed)	.242	.200	.000	.145	.063	.141
	N	44	44	44	44	44	44
CAG	Pearson Correlation	.865**	.713**	.693**	.808	.849**	.826**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	44	44	44	44	44	44
CHKM	Pearson Correlation	.581*	.667*	.483*	.521**	.714	.570
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000
	N	44	44	44	44	44	44
CPNO	Pearson Correlation	.842**	.609**	.741**	.633**	.697	.757
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	44	44	44	44	44	44
GLD	Pearson Correlation	-.260**	.312**	-.627**	.001	.108	-.437**
	Sig. (2-tailed)	.089	.039	.000	.997	.486	.003

	N	44	44	44	44	44	44
IBM	Pearson Correlation	.598**	.765**	.123**	.878**	.770	.428**
	Sig. (2-tailed)	.000	.000	.425	.000	.000	.004
	N	44	44	44	44	44	44
JNJ	Pearson Correlation	.549	.075	.811*	.165**	.215**	.654
	Sig. (2-tailed)	.000	.626	.000	.284	.160	.000
	N	44	44	44	44	44	44
MCHFX	Pearson Correlation	-.042**	-.376**	.413**	-.427**	-.510**	-.050**
	Sig. (2-tailed)	.789	.012	.005	.004	.000	.745
	N	44	44	44	44	44	44
NEM	Pearson Correlation	-.196	.219	-.647**	.257**	.163**	-.256
	Sig. (2-tailed)	.201	.153	.000	.092	.290	.093
	N	44	44	44	44	44	44

Correlations							
		T	VZ	MCD	THD	AGNC	AKAM
AGNC	Pearson Correlation	.682	.146**	-.086**	.671**	1*	.698**
	Sig. (2-tailed)	.000	.344	.580	.000		.000
	N	44	44	44	44	44	44
AKAM	Pearson Correlation	.771**	.621	.278**	.443**	.698*	1**
	Sig. (2-tailed)	.000	.000	.068	.003	.000	
	N	44	44	44	44	44	44
BAC	Pearson Correlation	.786**	-.248**	-.709	.628**	.609*	.396**
	Sig. (2-tailed)	.000	.104	.000	.000	.000	.008
	N	44	44	44	44	44	44
CAG	Pearson Correlation	.535**	.805**	.593**	.236	.303**	.746**
	Sig. (2-tailed)	.000	.000	.000	.123	.045	.000
	N	44	44	44	44	44	44
CHKM	Pearson Correlation	.269*	.567*	.536*	.200**	.202	.427
	Sig. (2-tailed)	.077	.000	.000	.193	.189	.004

	N	44	44	44	44	44	44
CPNO	Pearson Correlation	.597**	.564**	.391**	.602**	.693	.811
	Sig. (2-tailed)	.000	.000	.009	.000	.000	.000
	N	44	44	44	44	44	44
GLD	Pearson Correlation	-.755**	-.198**	.429**	-.073	-.310	-.432**
	Sig. (2-tailed)	.000	.198	.004	.638	.041	.003
	N	44	44	44	44	44	44
IBM	Pearson Correlation	-.065**	.689**	.838**	-.070**	-.036	.424**
	Sig. (2-tailed)	.676	.000	.000	.650	.819	.004
	N	44	44	44	44	44	44
JNJ	Pearson Correlation	.878	.311	-.197*	.450**	.594**	.632
	Sig. (2-tailed)	.000	.040	.199	.002	.000	.000
	N	44	44	44	44	44	44
MCHFX	Pearson Correlation	.568**	-.471**	-.821**	.573**	.426**	.148**
	Sig. (2-tailed)	.000	.001	.000	.000	.004	.339
	N	44	44	44	44	44	44
NEM	Pearson Correlation	-.710	.221	.580**	-.559**	-.576**	-.332
	Sig. (2-tailed)	.000	.150	.000	.000	.000	.028
	N	44	44	44	44	44	44

Correlations							
		BAC	CAG	CHKM	CPNO	GLD	IBM
AGNC	Pearson Correlation	.609	.303**	.202**	.693**	-.310*	-.036**
	Sig. (2-tailed)	.000	.045	.189	.000	.041	.819
	N	44	44	44	44	44	44
AKAM	Pearson Correlation	.396**	.746	.427**	.811**	-.432*	.424**
	Sig. (2-tailed)	.008	.000	.004	.000	.003	.004
	N	44	44	44	44	44	44
BAC	Pearson Correlation	1**	.042**	-.059	.274**	-.633*	-.506**
	Sig. (2-tailed)		.788	.702	.071	.000	.000

	N	44	44	44	44	44	44
CAG	Pearson Correlation	.042**	1**	.699**	.735	-.269**	.691**
	Sig. (2-tailed)	.788		.000	.000	.077	.000
	N	44	44	44	44	44	44
CHKM	Pearson Correlation	-.059*	.699*	1*	.602**	-.021	.375
	Sig. (2-tailed)	.702	.000		.000	.894	.012
	N	44	44	44	44	44	44
CPNO	Pearson Correlation	.274**	.735**	.602**	1**	-.209	.450
	Sig. (2-tailed)	.071	.000	.000		.173	.002
	N	44	44	44	44	44	44
GLD	Pearson Correlation	-.633**	-.269**	-.021**	-.209	1	.241**
	Sig. (2-tailed)	.000	.077	.894	.173		.114
	N	44	44	44	44	44	44
IBM	Pearson Correlation	-.506**	.691**	.375**	.450**	.241	1**
	Sig. (2-tailed)	.000	.000	.012	.002	.114	
	N	44	44	44	44	44	44
JNJ	Pearson Correlation	.704	.541	.322*	.549**	-.627**	-.095
	Sig. (2-tailed)	.000	.000	.033	.000	.000	.538
	N	44	44	44	44	44	44
MCHFX	Pearson Correlation	.914**	-.193**	-.295**	.093**	-.459**	-.595**
	Sig. (2-tailed)	.000	.211	.052	.549	.002	.000
	N	44	44	44	44	44	44
NEM	Pearson Correlation	-.850	-.080	-.051**	-.269**	.704**	.508
	Sig. (2-tailed)	.000	.605	.744	.077	.000	.000
	N	44	44	44	44	44	44

Correlations							
		JNJ	MCHFX	NEM	OGMCX	PGP	PHK
AGNC	Pearson Correlation	.594	.426**	-.576**	-.002**	.724*	.672**
	Sig. (2-tailed)	.000	.004	.000	.991	.000	.000

	N	44	44	44	44	44	44
AKAM	Pearson Correlation	.632**	.148	-.332**	-.435**	.606*	.594**
	Sig. (2-tailed)	.000	.339	.028	.003	.000	.000
	N	44	44	44	44	44	44
BAC	Pearson Correlation	.704**	.914**	-.850	.481**	.930*	.889**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	44	44	44	44	44	44
CAG	Pearson Correlation	.541**	-.193**	-.080**	-.578	.172**	.182**
	Sig. (2-tailed)	.000	.211	.605	.000	.264	.238
	N	44	44	44	44	44	44
CHKM	Pearson Correlation	.322*	-.295*	-.051*	-.411**	-.047	-.030
	Sig. (2-tailed)	.033	.052	.744	.006	.764	.844
	N	44	44	44	44	44	44
CPNO	Pearson Correlation	.549**	.093**	-.269**	-.297**	.440	.422
	Sig. (2-tailed)	.000	.549	.077	.050	.003	.004
	N	44	44	44	44	44	44
GLD	Pearson Correlation	-.627**	-.459**	.704**	.115	-.574	-.569**
	Sig. (2-tailed)	.000	.002	.000	.458	.000	.000
	N	44	44	44	44	44	44
IBM	Pearson Correlation	-.095**	-.595**	.508**	-.668**	-.307	-.302**
	Sig. (2-tailed)	.538	.000	.000	.000	.043	.046
	N	44	44	44	44	44	44
JNJ	Pearson Correlation	1	.556	-.604*	.093**	.707**	.713
	Sig. (2-tailed)		.000	.000	.550	.000	.000
	N	44	44	44	44	44	44
MCHFX	Pearson Correlation	.556**	1**	-.694**	.734**	.843**	.813**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	44	44	44	44	44	44
NEM	Pearson Correlation	-.604	-.694	1**	-.214**	-.741**	-.660
	Sig. (2-tailed)	.000	.000		.163	.000	.000

	N	44	44	44	44	44	44

Correlations				
		RDS-B	WMB	WPX
AGNC	Pearson Correlation	.347	.344**	-.591**
	Sig. (2-tailed)	.021	.022	.043
	N	44	44	12
AKAM	Pearson Correlation	.783**	.622	.448**
	Sig. (2-tailed)	.000	.000	.144
	N	44	44	12
BAC	Pearson Correlation	.097**	.237**	.278
	Sig. (2-tailed)	.530	.121	.381
	N	44	44	12
CAG	Pearson Correlation	.827**	.457**	.630**
	Sig. (2-tailed)	.000	.002	.028
	N	44	44	12
CHKM	Pearson Correlation	.446*	-.064*	.533*
	Sig. (2-tailed)	.002	.682	.074
	N	44	44	12
CPNO	Pearson Correlation	.770**	.527**	.613**
	Sig. (2-tailed)	.000	.000	.034
	N	44	44	12
GLD	Pearson Correlation	-.324**	-.425**	.093**
	Sig. (2-tailed)	.032	.004	.774
	N	44	44	12
IBM	Pearson Correlation	.624**	.357**	.711**
	Sig. (2-tailed)	.000	.017	.010
	N	44	44	12
JNJ	Pearson Correlation	.546	.446	.105*
	Sig. (2-tailed)	.000	.002	.745

	N	44	44	12
MCHFX	Pearson Correlation	-.048**	.237**	.563**
	Sig. (2-tailed)	.757	.121	.057
	N	44	44	12
NEM	Pearson Correlation	-.039	-.117	.624**
	Sig. (2-tailed)	.800	.450	.030
	N	44	44	12

Correlations

		HSY	COP	WMT	MON	EXC	D
OGMCX	Pearson Correlation	-.707	-.704**	-.767**	-.464**	.396*	-.703**
	Sig. (2-tailed)	.000	.000	.000	.002	.008	.000
	N	44	44	44	44	44	44
PGP	Pearson Correlation	-.509**	-.473	-.075**	-.061**	-.177*	-.633**
	Sig. (2-tailed)	.000	.001	.629	.694	.251	.000
	N	44	44	44	44	44	44
PHK	Pearson Correlation	-.492**	-.443**	-.045	-.051**	-.115*	-.574**
	Sig. (2-tailed)	.001	.003	.770	.743	.456	.000
	N	44	44	44	44	44	44
RDS-B	Pearson Correlation	.370**	.437**	.747**	.653	-.079**	.417**
	Sig. (2-tailed)	.013	.003	.000	.000	.608	.005
	N	44	44	44	44	44	44
WMB	Pearson Correlation	-.057*	-.043*	.458*	.229**	.239	.169
	Sig. (2-tailed)	.715	.782	.002	.135	.118	.273
	N	44	44	44	44	44	44
WPX	Pearson Correlation	.479**	.743**	.630**	.202**	.444	.193
	Sig. (2-tailed)	.115	.006	.028	.528	.148	.548
	N	12	12	12	12	12	12

Correlations

		SLV	ATVI	TGP	CHK	EOG	GDX
OGMCX	Pearson Correlation	.893	-.396**	-.082**	.920**	-.190*	.765**
	Sig. (2-tailed)	.000	.008	.596	.000	.216	.000
	N	44	44	44	44	44	44
PGP	Pearson Correlation	.398**	-.357	.586**	.462**	.688*	-.099**
	Sig. (2-tailed)	.007	.018	.000	.002	.000	.522
	N	44	44	44	44	44	44
PHK	Pearson Correlation	.355**	-.278**	.544	.445**	.659*	-.066**
	Sig. (2-tailed)	.018	.068	.000	.002	.000	.672
	N	44	44	44	44	44	44
RDS-B	Pearson Correlation	-.371**	.446**	.611**	-.330	.723**	-.429**
	Sig. (2-tailed)	.013	.002	.000	.028	.000	.004
	N	44	44	44	44	44	44
WMB	Pearson Correlation	-.212*	.275*	.363*	-.066**	.644	-.293
	Sig. (2-tailed)	.166	.071	.015	.671	.000	.054
	N	44	44	44	44	44	44
WPX	Pearson Correlation	.524**	.323**	.629**	.671**	-.032	.676
	Sig. (2-tailed)	.080	.306	.028	.017	.922	.016
	N	12	12	12	12	12	12

Correlations							
		UNP	MSFT	GE	INTC	KFT	PFE
OGMCX	Pearson Correlation	-.537	-.446**	-.180**	-.729**	-.718*	-.568**
	Sig. (2-tailed)	.000	.002	.242	.000	.000	.000
	N	44	44	44	44	44	44
PGP	Pearson Correlation	.389**	-.088	.761**	.008**	-.085*	.405**
	Sig. (2-tailed)	.009	.569	.000	.960	.583	.006
	N	44	44	44	44	44	44
PHK	Pearson Correlation	.385**	-.108**	.742	.020**	-.077*	.430**
	Sig. (2-tailed)	.010	.484	.000	.900	.621	.004

	N	44	44	44	44	44	44
RDS-B	Pearson Correlation	.856**	.494**	.674**	.756	.681**	.836**
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.000
	N	44	44	44	44	44	44
WMB	Pearson Correlation	.605*	.044*	.495*	.462**	.292	.593
	Sig. (2-tailed)	.000	.776	.001	.002	.054	.000
	N	44	44	44	44	44	44
WPX	Pearson Correlation	.452**	.755**	.639**	.813**	.326	-.057
	Sig. (2-tailed)	.140	.004	.025	.001	.301	.859
	N	12	12	12	12	12	12

Correlations							
		T	VZ	MCD	THD	AGNC	AKAM
OGMCX	Pearson Correlation	-.046	-.724**	-.746**	.361**	-.002*	-.435**
	Sig. (2-tailed)	.767	.000	.000	.016	.991	.003
	N	44	44	44	44	44	44
PGP	Pearson Correlation	.822**	-.073	-.525**	.697**	.724*	.606**
	Sig. (2-tailed)	.000	.639	.000	.000	.000	.000
	N	44	44	44	44	44	44
PHK	Pearson Correlation	.817**	-.013**	-.492	.631**	.672*	.594**
	Sig. (2-tailed)	.000	.934	.001	.000	.000	.000
	N	44	44	44	44	44	44
RDS-B	Pearson Correlation	.563**	.766**	.472**	.275	.347**	.783**
	Sig. (2-tailed)	.000	.000	.001	.070	.021	.000
	N	44	44	44	44	44	44
WMB	Pearson Correlation	.495*	.467*	.112*	.260**	.344	.622
	Sig. (2-tailed)	.001	.001	.467	.089	.022	.000
	N	44	44	44	44	44	44
WPX	Pearson Correlation	.475**	.906**	.146**	.747**	-.591	.448
	Sig. (2-tailed)	.118	.000	.650	.005	.043	.144

	N	12	12	12	12	12	12

Correlations							
		BAC	CAG	CHKM	CPNO	GLD	IBM
OGMCX	Pearson Correlation	.481	-.578**	-.411**	-.297**	.115*	-.668**
	Sig. (2-tailed)	.001	.000	.006	.050	.458	.000
	N	44	44	44	44	44	44
PGP	Pearson Correlation	.930**	.172	-.047**	.440**	-.574*	-.307**
	Sig. (2-tailed)	.000	.264	.764	.003	.000	.043
	N	44	44	44	44	44	44
PHK	Pearson Correlation	.889**	.182**	-.030	.422**	-.569*	-.302**
	Sig. (2-tailed)	.000	.238	.844	.004	.000	.046
	N	44	44	44	44	44	44
RDS-B	Pearson Correlation	.097**	.827**	.446**	.770	-.324**	.624**
	Sig. (2-tailed)	.530	.000	.002	.000	.032	.000
	N	44	44	44	44	44	44
WMB	Pearson Correlation	.237*	.457*	-.064*	.527**	-.425	.357
	Sig. (2-tailed)	.121	.002	.682	.000	.004	.017
	N	44	44	44	44	44	44
WPX	Pearson Correlation	.278**	.630**	.533**	.613**	.093	.711
	Sig. (2-tailed)	.381	.028	.074	.034	.774	.010
	N	12	12	12	12	12	12

Correlations							
		JNJ	MCHFX	NEM	OGMCX	PGP	PHK
OGMCX	Pearson Correlation	.093	.734**	-.214**	1**	.351*	.347**
	Sig. (2-tailed)	.550	.000	.163		.019	.021
	N	44	44	44	44	44	44
PGP	Pearson Correlation	.707**	.843	-.741**	.351**	1*	.978**
	Sig. (2-tailed)	.000	.000	.000	.019		.000

	N	44	44	44	44	44	44
PHK	Pearson Correlation	.713**	.813**	-.660	.347**	.978*	1**
	Sig. (2-tailed)	.000	.000	.000	.021	.000	
	N	44	44	44	44	44	44
RDS-B	Pearson Correlation	.546**	-.048**	-.039**	-.460	.285**	.313**
	Sig. (2-tailed)	.000	.757	.800	.002	.061	.039
	N	44	44	44	44	44	44
WMB	Pearson Correlation	.446*	.237*	-.117*	-.186**	.457	.481
	Sig. (2-tailed)	.002	.121	.450	.227	.002	.001
	N	44	44	44	44	44	44
WPX	Pearson Correlation	.105**	.563**	.624**	.684**	.339	.310
	Sig. (2-tailed)	.745	.057	.030	.014	.281	.328
	N	12	12	12	12	12	12

Correlations				
		RDS-B	WMB	WPX
OGMCX	Pearson Correlation	-.460	-.186**	.684**
	Sig. (2-tailed)	.002	.227	.014
	N	44	44	12
PGP	Pearson Correlation	.285**	.457	.339**
	Sig. (2-tailed)	.061	.002	.281
	N	44	44	12
PHK	Pearson Correlation	.313**	.481**	.310
	Sig. (2-tailed)	.039	.001	.328
	N	44	44	12
RDS-B	Pearson Correlation	1**	.769**	.754**
	Sig. (2-tailed)		.000	.005
	N	44	44	12
WMB	Pearson Correlation	.769*	1*	.653*
	Sig. (2-tailed)	.000		.021

	N	44	44	12
WPX	Pearson Correlation	.754**	.653**	1**
	Sig. (2-tailed)	.005	.021	
	N	12	12	12

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Porter Stansberry Correlation in Bull Market

Correlations							
		HSY	COP	WMT	MON	EXC	D
HSY	Pearson Correlation	1	.731**	.153	-.913**	-.864**	.827**
	Sig. (2-tailed)		.000	.533	.000	.000	.000
	N	19	19	19	19	19	19
COP	Pearson Correlation	.731**	1	.623**	-.637**	-.733**	.879**
	Sig. (2-tailed)	.000		.004	.003	.000	.000
	N	19	19	19	19	19	19
WMT	Pearson Correlation	.153	.623**	1	-.027	-.274	.570*
	Sig. (2-tailed)	.533	.004		.913	.256	.011
	N	19	19	19	19	19	19
MON	Pearson Correlation	-.913**	-.637**	-.027	1	.891**	-.784**
	Sig. (2-tailed)	.000	.003	.913		.000	.000
	N	19	19	19	19	19	19
EXC	Pearson Correlation	-.864**	-.733**	-.274	.891**	1	-.811**
	Sig. (2-tailed)	.000	.000	.256	.000		.000

	N	19	19	19	19	19	19
D	Pearson Correlation	.827**	.879**	.570*	-.784**	-.811**	1
	Sig. (2-tailed)	.000	.000	.011	.000	.000	
	N	19	19	19	19	19	19
SLV	Pearson Correlation	.650**	.939**	.534*	-.511*	-.594**	.736**
	Sig. (2-tailed)	.003	.000	.019	.025	.007	.000
	N	19	19	19	19	19	19
ATVI	Pearson Correlation	-.193	-.187	-.297	.406	.457*	-.414
	Sig. (2-tailed)	.429	.445	.216	.084	.049	.078
	N	19	19	19	19	19	19
TGP	Pearson Correlation	.823**	.905**	.499*	-.726**	-.755**	.928**
	Sig. (2-tailed)	.000	.000	.030	.000	.000	.000
	N	19	19	19	19	19	19
CHK	Pearson Correlation	-.502*	-.114	.379	.492*	.335	-.251
	Sig. (2-tailed)	.029	.643	.110	.033	.160	.300
	N	19	19	19	19	19	19
EOG	Pearson Correlation	.628**	.651**	.497*	-.681**	-.815**	.764**
	Sig. (2-tailed)	.004	.003	.030	.001	.000	.000
	N	19	19	19	19	19	19

Correlations

		SLV	ATVI	TGP	CHK	EOG	GDX
HSY	Pearson Correlation	.650	-.193**	.823	-.502**	.628**	.756**
	Sig. (2-tailed)	.003	.429	.000	.029	.004	.000
	N	19	19	19	19	19	19
COP	Pearson Correlation	.939**	-.187	.905**	-.114**	.651**	.961**
	Sig. (2-tailed)	.000	.445	.000	.643	.003	.000
	N	19	19	19	19	19	19
WMT	Pearson Correlation	.534	-.297**	.499	.379	.497	.478*
	Sig. (2-tailed)	.019	.216	.030	.110	.030	.038

	N	19	19	19	19	19	19
MON	Pearson Correlation	-.511**	.406**	-.726	.492	-.681**	-.700**
	Sig. (2-tailed)	.025	.084	.000	.033	.001	.001
	N	19	19	19	19	19	19
EXC	Pearson Correlation	-.594**	.457**	-.755	.335**	-.815	-.725**
	Sig. (2-tailed)	.007	.049	.000	.160	.000	.000
	N	19	19	19	19	19	19
D	Pearson Correlation	.736**	-.414**	.928*	-.251**	.764**	.851
	Sig. (2-tailed)	.000	.078	.000	.300	.000	.000
	N	19	19	19	19	19	19
SLV	Pearson Correlation	1**	.017**	.855*	-.114*	.416**	.942**
	Sig. (2-tailed)		.944	.000	.642	.076	.000
	N	19	19	19	19	19	19
ATVI	Pearson Correlation	.017	1	-.250	-.196	-.673*	-.182
	Sig. (2-tailed)	.944		.302	.421	.002	.455
	N	19	19	19	19	19	19
TGP	Pearson Correlation	.855**	-.250**	1*	-.179**	.647**	.894**
	Sig. (2-tailed)	.000	.302		.462	.003	.000
	N	19	19	19	19	19	19
CHK	Pearson Correlation	-.114*	-.196	-.179	1*	.073	-.201
	Sig. (2-tailed)	.642	.421	.462		.767	.410
	N	19	19	19	19	19	19
EOG	Pearson Correlation	.416**	-.673**	.647*	.073**	1**	.590**
	Sig. (2-tailed)	.076	.002	.003	.767		.008
	N	19	19	19	19	19	19

Correlations			
		UNP	MSFT
HSY	Pearson Correlation	.837	-.199**
	Sig. (2-tailed)	.000	.415

	N	19	19
COP	Pearson Correlation	.947**	.264
	Sig. (2-tailed)	.000	.275
	N	19	19
WMT	Pearson Correlation	.580	.764**
	Sig. (2-tailed)	.009	.000
	N	19	19
MON	Pearson Correlation	-.684**	.217**
	Sig. (2-tailed)	.001	.373
	N	19	19
EXC	Pearson Correlation	-.761**	-.048**
	Sig. (2-tailed)	.000	.845
	N	19	19
D	Pearson Correlation	.907**	.191**
	Sig. (2-tailed)	.000	.434
	N	19	19
SLV	Pearson Correlation	.922**	.109**
	Sig. (2-tailed)	.000	.657
	N	19	19
ATVI	Pearson Correlation	-.159	-.428
	Sig. (2-tailed)	.517	.068
	N	19	19
TGP	Pearson Correlation	.951**	.119**
	Sig. (2-tailed)	.000	.629
	N	19	19
CHK	Pearson Correlation	-.219*	.678
	Sig. (2-tailed)	.368	.001
	N	19	19
EOG	Pearson Correlation	.611**	.495**
	Sig. (2-tailed)	.005	.031

	N	19	19

Correlations							
		HSY	COP	WMT	MON	EXC	D
GDX	Pearson Correlation	.756	.961**	.478	-.700**	-.725**	.851**
	Sig. (2-tailed)	.000	.000	.038	.001	.000	.000
	N	19	19	19	19	19	19
UNP	Pearson Correlation	.837**	.947	.580**	-.684**	-.761**	.907**
	Sig. (2-tailed)	.000	.000	.009	.001	.000	.000
	N	19	19	19	19	19	19
MSFT	Pearson Correlation	-.199	.264**	.764	.217	-.048	.191*
	Sig. (2-tailed)	.415	.275	.000	.373	.845	.434
	N	19	19	19	19	19	19

Correlations							
		SLV	ATVI	TGP	CHK	EOG	GDX
GDX	Pearson Correlation	.942	-.182**	.894	-.201**	.590**	1**
	Sig. (2-tailed)	.000	.455	.000	.410	.008	
	N	19	19	19	19	19	19
UNP	Pearson Correlation	.922**	-.159	.951**	-.219**	.611**	.928**
	Sig. (2-tailed)	.000	.517	.000	.368	.005	.000
	N	19	19	19	19	19	19
MSFT	Pearson Correlation	.109	-.428**	.119	.678	.495	.104*
	Sig. (2-tailed)	.657	.068	.629	.001	.031	.673
	N	19	19	19	19	19	19

Correlations			
		UNP	MSFT
GDX	Pearson Correlation	.928	.104**
	Sig. (2-tailed)	.000	.673

	N	19	19
UNP	Pearson Correlation	1**	.129
	Sig. (2-tailed)		.598
	N	19	19
MSFT	Pearson Correlation	.129	1**
	Sig. (2-tailed)	.598	
	N	19	19

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Porter Stansberry Correlation in Bear Market

Correlations							
		HSY	COP	WMT	MON	EXC	D
HSY	Pearson Correlation	1	.591**	.249	.473*	.539*	.648**
	Sig. (2-tailed)		.008	.304	.041	.017	.003
	N	19	19	19	19	19	19
COP	Pearson Correlation	.591**	1	.412	.959**	.985**	.972**
	Sig. (2-tailed)	.008		.079	.000	.000	.000
	N	19	19	19	19	19	19
WMT	Pearson Correlation	.249	.412	1	.408	.352	.409
	Sig. (2-tailed)	.304	.079		.083	.140	.082
	N	19	19	19	19	19	19
MON	Pearson Correlation	.473*	.959**	.408	1	.951**	.890**
	Sig. (2-tailed)	.041	.000	.083		.000	.000
	N	19	19	19	19	19	19
EXC	Pearson Correlation	.539*	.985**	.352	.951**	1	.950**
	Sig. (2-tailed)	.017	.000	.140	.000		.000
	N	19	19	19	19	19	19

D	Pearson Correlation	.648**	.972**	.409	.890**	.950**	1
	Sig. (2-tailed)	.003	.000	.082	.000	.000	
	N	19	19	19	19	19	19
SLV	Pearson Correlation	.343	.793**	-.062	.789**	.844**	.707**
	Sig. (2-tailed)	.150	.000	.800	.000	.000	.001
	N	19	19	19	19	19	19
ATVI	Pearson Correlation	.485*	.964**	.410	.979**	.956**	.913**
	Sig. (2-tailed)	.035	.000	.082	.000	.000	.000
	N	19	19	19	19	19	19
TGP	Pearson Correlation	.445	.849**	-.048	.862**	.888**	.769**
	Sig. (2-tailed)	.056	.000	.846	.000	.000	.000
	N	19	19	19	19	19	19
CHK	Pearson Correlation	.424	.945**	.484*	.982**	.942**	.869**
	Sig. (2-tailed)	.070	.000	.036	.000	.000	.000
	N	19	19	19	19	19	19
EOG	Pearson Correlation	.412	.898**	.517*	.910**	.908**	.802**
	Sig. (2-tailed)	.080	.000	.023	.000	.000	.000
	N	19	19	19	19	19	19

Correlations							
		SLV	ATVI	TGP	CHK	EOG	GDX
HSY	Pearson Correlation	.343	.485**	.445	.424*	.412*	.203**
	Sig. (2-tailed)	.150	.035	.056	.070	.080	.404
	N	19	19	19	19	19	19
COP	Pearson Correlation	.793**	.964	.849	.945**	.898**	.673**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.002
	N	19	19	19	19	19	19
WMT	Pearson Correlation	-.062	.410	-.048	.484	.517	-.199
	Sig. (2-tailed)	.800	.082	.846	.036	.023	.414
	N	19	19	19	19	19	19

MON	Pearson Correlation	.789*	.979**	.862	.982	.910**	.731**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	19	19	19	19	19	19
EXC	Pearson Correlation	.844*	.956**	.888	.942**	.908	.713**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001
	N	19	19	19	19	19	19
D	Pearson Correlation	.707**	.913**	.769	.869**	.802**	.545
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.016
	N	19	19	19	19	19	19
SLV	Pearson Correlation	1	.741**	.940	.750**	.788**	.836**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	19	19	19	19	19	19
ATVI	Pearson Correlation	.741*	1**	.849	.971**	.875**	.720**
	Sig. (2-tailed)	.000		.000	.000	.000	.001
	N	19	19	19	19	19	19
TGP	Pearson Correlation	.940	.849**	1	.817**	.778**	.907**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	19	19	19	19	19	19
CHK	Pearson Correlation	.750	.971**	.817*	1**	.941**	.707**
	Sig. (2-tailed)	.000	.000	.000		.000	.001
	N	19	19	19	19	19	19
EOG	Pearson Correlation	.788	.875**	.778*	.941**	1**	.644**
	Sig. (2-tailed)	.000	.000	.000	.000		.003
	N	19	19	19	19	19	19

Correlations			
		UNP	MSFT
HSY	Pearson Correlation	.643	.705**
	Sig. (2-tailed)	.003	.001
	N	19	19

COP	Pearson Correlation	.818**	.895
	Sig. (2-tailed)	.000	.000
	N	19	19
WMT	Pearson Correlation	.018	.099
	Sig. (2-tailed)	.942	.686
	N	19	19
MON	Pearson Correlation	.764*	.833**
	Sig. (2-tailed)	.000	.000
	N	19	19
EXC	Pearson Correlation	.839*	.877**
	Sig. (2-tailed)	.000	.000
	N	19	19
D	Pearson Correlation	.769**	.897**
	Sig. (2-tailed)	.000	.000
	N	19	19
SLV	Pearson Correlation	.889	.808**
	Sig. (2-tailed)	.000	.000
	N	19	19
ATVI	Pearson Correlation	.752*	.838**
	Sig. (2-tailed)	.000	.000
	N	19	19
TGP	Pearson Correlation	.904	.869**
	Sig. (2-tailed)	.000	.000
	N	19	19
CHK	Pearson Correlation	.710	.767**
	Sig. (2-tailed)	.001	.000
	N	19	19
EOG	Pearson Correlation	.743	.708**
	Sig. (2-tailed)	.000	.001
	N	19	19

Correlations							
		HSY	COP	WMT	MON	EXC	D
GDX	Pearson Correlation	.203	.673**	-.199	.731*	.713*	.545**
	Sig. (2-tailed)	.404	.002	.414	.000	.001	.016
	N	19	19	19	19	19	19
UNP	Pearson Correlation	.643**	.818	.018	.764**	.839**	.769**
	Sig. (2-tailed)	.003	.000	.942	.000	.000	.000
	N	19	19	19	19	19	19
MSFT	Pearson Correlation	.705	.895	.099	.833	.877	.897
	Sig. (2-tailed)	.001	.000	.686	.000	.000	.000
	N	19	19	19	19	19	19

Correlations							
		SLV	ATVI	TGP	CHK	EOG	GDX
GDX	Pearson Correlation	.836	.720**	.907	.707*	.644*	1**
	Sig. (2-tailed)	.000	.001	.000	.001	.003	
	N	19	19	19	19	19	19
UNP	Pearson Correlation	.889**	.752	.904	.710**	.743**	.730**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	19	19	19	19	19	19
MSFT	Pearson Correlation	.808	.838	.869	.767	.708	.693
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.001
	N	19	19	19	19	19	19

Correlations			
		UNP	MSFT
GDX	Pearson Correlation	.730	.693**
	Sig. (2-tailed)	.000	.001
	N	19	19

UNP	Pearson Correlation	1**	.918
	Sig. (2-tailed)		.000
	N	19	19
MSFT	Pearson Correlation	.918	1
	Sig. (2-tailed)	.000	
	N	19	19

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Dogs of the Dow Correlation in Bull Market

Correlations							
		GE	INTC	KFT	PFE	T	VZ
GE	Pearson Correlation	1	.886**	.617**	.431	.315	.038
	Sig. (2-tailed)		.000	.005	.066	.189	.876
	N	19	19	19	19	19	19
INTC	Pearson Correlation	.886**	1	.520*	.273	.133	-.065
	Sig. (2-tailed)	.000		.023	.258	.588	.792
	N	19	19	19	19	19	19
KFT	Pearson Correlation	.617**	.520*	1	.092	.594**	.319
	Sig. (2-tailed)	.005	.023		.707	.007	.183
	N	19	19	19	19	19	19
PFE	Pearson Correlation	.431	.273	.092	1	.498*	.494*
	Sig. (2-tailed)	.066	.258	.707		.030	.032
	N	19	19	19	19	19	19
T	Pearson Correlation	.315	.133	.594**	.498*	1	.845**
	Sig. (2-tailed)	.189	.588	.007	.030		.000
	N	19	19	19	19	19	19
VZ	Pearson Correlation	.038	-.065	.319	.494*	.845**	1

	Sig. (2-tailed)	.876	.792	.183	.032	.000	
	N	19	19	19	19	19	19

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Dogs of the Dow in Bear Market

Correlations							
		GE	INTC	KFT	PFE	T	VZ
GE	Pearson Correlation	1	.919**	.891**	.967**	.950**	.894**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	19	19	19	19	19	19
INTC	Pearson Correlation	.919**	1	.842**	.842**	.896**	.890**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	19	19	19	19	19	19
KFT	Pearson Correlation	.891**	.842**	1	.865**	.790**	.754**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	19	19	19	19	19	19
PFE	Pearson Correlation	.967**	.842**	.865**	1	.911**	.894**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	19	19	19	19	19	19
T	Pearson Correlation	.950**	.896**	.790**	.911**	1	.954**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	19	19	19	19	19	19
VZ	Pearson Correlation	.894**	.890**	.754**	.894**	.954**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	19	19	19	19	19	19

**. Correlation is significant at the 0.01 level (2-tailed).