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Regressed Profits on Total Trades, Winners, Size, and Intraday Drawdown of Commodities, Equities, Fixed Income, and Trade Duration Exit Days

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Abstract

This paper describes Business Intelligence Systems and Engineering of Profits from trading. This paper discusses a system (The System) that includes regressed profits on Total Trades, Winners, Size, and Intraday drawdown of Commodities, Equities, Fixed Income, and Trade duration Exit Days. The System uses the S&P-500; including a variety of traded securities. The System applies trading portfolio theories, such as asset diversification, and extends these theories to human resource management diversification. The System integrates an Automated Trading System (ATS), of algorithmic trading, with a Simple Moving Average (SMA) trading strategy. This paper also tests several null hypotheses on predictor independent variables and their coefficient of determination; rejecting the null hypotheses that these determinations are equal to zero. Furthermore, this paper links constructs to SMA and Trend-Following Ordinary Least Square (OLS), to the World Wide Web (WWW), and to High Frequency Trading (HTF). Additionally, this paper discusses topping the WWW's Search Engine Results page (SERP) and discusses Search Engine Optimization (SEO).

The System includes Mobile Phones (smart phones and tablets), Audit Counter Party Audio/Video (AV), a surveillance approach to IP (Internet Protocol) both fixed and mobile, and wired and wireless AV cameras. The System also includes wearable cameras; such as Google-Glass. Additionally, The System includes screen-sharing broadcasting, archiving shots, and webcams. The System also implements Google Plus's Hangouts on Air (G+ HOA), as well as Voice over IP (VOIP) phone video conferencing, which is similar to Skype. Software robots (BOTs) and classroom Instructor's Lecture Videos, which are recorded with the instructor's tablet, supplement The System. Furthermore, The System deals with Quantitative Robotic Algorithmic Automated Securities (e.g., Stocks, Equities, Treasuries, Commodities, and Futures). Additionally The System includes Trading System Strategy, internet security, forensic accounting, and expert witness testimony, point of view (POV) surveillance, fraud examination, and web programming. The System helps identify misinformation such as "cooking the books" from Toxic Paper Sub-Prime Mortgages, CDS, and CSOs Material Misstatements of the Financial Services Industry; such as the Crisis Challenges and counterparty surveillance of collateralized debt obligations.

Overview

Business intelligence (BI) is the set of techniques and tools for the transformation of raw data into meaningful and useful information for business analysis purposes.[1] Analyzing Paper Profits of a Simple Moving Average (SMA) using the statistical method of Trend-Following Ordinary Least Square (OLS) is both meaningful and useful. SMA profits from repetitive backtesting analyses allow the trader to better forecast the future. Therefore, the aforementioned type of analysis is very useful in developing Automated Trading System (ATS) apps.

One reason the analysis is useful, is because the developer has to make sure that the software works perfectly well, prior to releasing the ATS into production. This is because such systems may work continuously on multiple cloud servers and on the World Wide Web (WWW). For High Frequency Trading (HTF), there is no time to debug systems in real-time. Multi-million dollar transactions often occur in the "blink of an eye." The other reason the analysis is also useful is because it allows for the forecasting of profits with a high degree of accuracy. Accuracy is important, since less accurate systems can bankrupt the trader very quickly.

BI technologies are capable of handling large amounts of unstructured data to help identify, develop, and otherwise create new strategic business opportunities. The WWW is an example of large amounts of unstructured data. Thus, topping the WWW search engine results page (SERP) with a keyword due to Search Engine Optimization (SEO) is an example of BI. Even though the current paper focuses on

quantitative data, future studies will supplement the current study with unstructured data; such as stock market whisper, changes in management projections, and auditor's footnotes. The System described in this paper implements unstructured data; visual graphics (Smart phone/tablets), audit counterpart AV, and the surveillance approach. Such data include but is not limited to traditional IP, fixed and mobile, wired and wireless AV surveillance cameras, as well as wearable cameras; such as Google-Glass. Unstructured data are also provided by screen-sharing broadcasting, archiving shots, and web-cams; such as Google plus Hangouts on Air (G+HOA), as well as Voice Over IP (VOIP) phone video conferencing systems; such as Skype. Software robots (BOTs) and SEO are other examples of unstructured BI. If ATS bets on a market rise, the system can enlist followers to accelerate the trend by advertising the ATS's strategy through SEO.

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[1]http://en.wikipedia.org/wiki/Business_intelligence

Run-Bot-SEO.Info[2], BotSEO.Info[3] and Bot-SEO.Info[4] and its affiliates[5] provide examples of such a website.

Such BI can also be implemented into the traditional classroom. The BI extends the traditional classroom by making it available to students who are not physically present. Automation of the BI system in the classroom would streamline this process and make the BI more useful. Such BI extends **"**Mobile Touch-Screen[6] Lecture Capture Apps Development for Run-Bot-SEO.info Run Rob(Bot) Search Engine Optimizer (SEO) to Max your Page Rank with a Vanity Phone Number that spells the Domain Name like Run-Bot-SEO.info. The legal facets of such systems are another BI example[7].

The Automated Algorithmic Software Trading Robots, Continuous Cloud Sync Video, and SEO Audit are valuable tools in the age of high frequency trading (HFT). Through the use of automated algorithmic software trading robots, consolidated audit trails can be the "watch dog"; monitoring for triggers that may cause massive market fluctuations. These tools can also be used for spying on other traders in the market place. Additionally, one can implement recording, webcasting, and recasting of the data to influence the marketplace. The aforementioned tools are another example of BI. The robots use state of the art hardware and software to show how consolidated audit trails can be used for monitoring purposes. In HFT, general security, spying, and content misappropriation, the use of several commonly available platforms and with an internet connection, all the data (text, audio, video) is continuously cloud sync'd, archived, and readily available at the top of search engine search results.

The authors have used keywords as examples of SEO. Topping the search engines with keyword searches such as Backtesting1[8], Backtesting2[9]. Backtesting3[10]. For the "Backtesting2" key word, the search generated about "6,750,000 results" in "0.47 seconds," pushing them down to a lower position in the SERP. Such examples (backtest1[1],2,3,4,5,6,7,8,9,10,11) with Quant (Quantitative) Robo (Robotic).

Other examples of BI include: algorithmic, automated securities, trading system strategies, Search Engine Optimization (SEO) audit, internet security, forensic accounting, and expert witness testimony, POV surveillance, fraud examination, and web programming. Furthermore Bi applies to forensic and investigative accounting, and particularly applications of "un-cooking" the books from toxic paper sub-prime mortgages CDS and CSOs material misstatements of the financial services industry (e.g., the Crisis Challenges and Surveillance of Collateralized Debt Obligations.)[11]

The goal of BI is to allow for the easy interpretation of large volumes of data. Identifying new opportunities and implementing an effective strategy based on BI's insights can provide businesses with a competitive market advantage and long-term stability [1].

The goal of the present study is similar to the goal of BI. The current study allows for the easy interpretation of large volumes of stock, commodities, currencies, and futures market data.

Much like BI technologies, this study provides historical, current, and predictive views of business operations of ATS strategies. Common functions of BI technologies are reporting, online analytical processing (the eventual ATS Apps (applications) will perform continuous online analytical processing, analytics). The current study includes Ordinary Least Squares (OLS) statistical analysis and Analysis of Variance (ANOVA) together with Residual Analysis. Future studies will focus on data mining, process mining, complex event processing, business performance management, benchmarking, text mining, and predictive analytics. This study focuses on the Predictive Analytics part of BI; and prescriptive analytics.

BI can be used to support a wide range of business decisions ranging from operational to strategic. Basic operating decisions include product positioning or pricing. The present study will support hedge fund business decisions concerning portfolio management. Strategic business decisions include priorities, goals, and directions at the broadest level. In all cases, BI is most effective when it combines data derived from the market (external data such as stock, commodities, currencies, and futures market data), in which the company is traded on with data from company sources internal to the business (e.g., financial and operations data: internal ATS data, or instructor lecture capture for an educational organization such as universities). When combined, external and internal data can provide a more complete picture, which in effect creates an "intelligence" that cannot be derived by any singular set of data [2]. This paper deals with BI Systems engineering[12], which is an interdisciplinary (e.g., math, statistics, computer science, finance, auditing, and accounting) field of engineering. This paper also focuses on businesses that focus on how to design and manage complex engineering systems over their life cycles. An example of such systems is HFT systems running ATS. Issues such as requirements management, reliability, logistics, coordination of different teams, evaluation measurements, and other disciplines become more difficult when dealing with large or complex projects. Systems engineering deals with work-processes, optimization methods (such as SEO) and risk management tools (such as portfolio management and trading). Systems engineering overlaps technical and human-centered disciplines such as control engineering, industrial engineering, organizational studies, and project management. Systems engineering ensures that all likely aspects of a project or system are considered, and integrated into a whole.

Human Diversity Visual Mobile Audio-Video Surveillance Audit Extending Portfolio Diversity Theory

This study extends the concept of portfolio diversity theory; to include human workplace diversity management. In general, the portfolio diversity theory claims that diversifying a portfolio reduces the trading risk. Diversity theory states that diversification[13] in investing, with the aim of selecting a collection of investment assets, results in a lower risk than any individual asset. Additionally, diversity management is the "recognition and valorization of individual differences."[14] The authors extend the portfolio diversity theory and diversity management to visual, mobile A/V surveillance and to an audit of ATS. This extension claims that in addition to the traditional diversification of assets (e.g., stock index, Forex, commodities, and

[2]http://www.run-bot-seo.info/

[3]http://www.botseo.info/

[4]http://www.bot-seo.info/

[5]https://botseoinfo.wordpress.com/

[6]http://itpalooza.com/session/run-bot-seo-info-run-robbot-search-engine-optimizer-seo-to-max-your-page-rank-with-a-vanity-phone-number-that-spells-the-domain-name-like-run-bot-seo-info/

[7]http://robots.law.miami.edu/2014/

[8]https://www.google.com/?gws_rd=ssl#q=Backtesting1.

[9]https://www.google.com/?gws_rd=ssl#q=Backtesting2.

[10]https://www.google.com/?gws_rd=ssl#q=Backtesting3.

[11]http://robots.law.miami.edu/2014/speakers-authors/

[12]http://en.wikipedia.org/wiki/Systems_engineering

[13]http://en.wikipedia.org/wiki/Modern_portfolio_theory

[14]http://en.wikipedia.org/wiki/Multicultural_and_diversity_management

futures) the audit should measure in a parallel model the diversity, recognition, and valorization of individual differences.[15]

There are many benefits to promoting diversity in the workplace. Workers from different backgrounds, with different perspectives can produce higher levels of innovation. For example, a worker with an engineering, computer science, and mobile app programming background, combined with a finance professional, combined with a mathematician statistician to develop the trading algorithms, and auditors to deal with the audit.

Diversity management is becoming more common in the overall strategy of many successful companies today, however, in trading strategies diversity management has completely been ignored. "In finance, a trading strategy is a fixed plan that is designed to achieve a profitable return by going long or short in markets.[16] This study has concluded that one can reject the null hypothesis that states that there are no statistically significant differences among the regression equation coefficients and zero. The null hypothesis has been rejected in favor of the alternate hypothesis stating the coefficient are not zero, and the equation can explain more than 90% of the variability of the expected profits. The weaknesses in this system are that all the sample observations have been used for testing. Therefore, out of sample observations have not been included, which means that when a trader applies the model to additional "out of sample" transactions, the accuracy of the explanations will deteriorate. Therefore, more testing and adjustments will be required, to refine this approach, especially the integration of "workplace diversity management."

The future implications are that more tests are required to further validate this model. Such tests have to be done on a regular basis and apply to "out of sample" observations, or a "hold-out" sub-sample. Such back-testing should be built into trading platforms that use ATS strategies, and should not require programming, as to make them more users friendly. As of now, most of these methods are not built-in and do require some programming, or at least understanding of some programming. Therefore, many users do not explain the profits and do not estimate formally and quantitatively expected future profits, and cash-flows. This is leading to a shortage of resources, liquidity problems, cash-flow shortage, and eventually a premature bankruptcy. To reduce such problems, additional profit projection techniques such as OLS regression models can be deployed to reduce the risk, and be better prepared to handle the "Work Place Diversity" (WPD) scenarios [3].

The future studies will examine the departure from some regression assumptions. The implications are that more tests are required to further validate this model. Such tests apply to some variables that have not been sufficiently tested and discussed in the present paper. These tests include more plots of variables that have not been plotted in the current paper and a discussion of how they may affect back testing and forward testing. In future studies program will plot other predictor variables to see whether they comply with the WPD, assessing the impact of the departure from such assumptions and how to treat it in a real-time, mobile device trading and audit situations. Most of the activities will apply to "out of sample" observations, or a "hold-out" sub-sample. Such forward testing should be built into trading platforms that use ATS strategies, and should not require programming, as to make them more users friendly. As of now, most of these methods are not built-in and do require some programming, or at least understanding of some programming. Therefore, while the

current variance in the predictor variables explains more than 95% of the variance in the profit, of the current sample data, it may predict much less accurately future samples. Such drop in prediction quality has to increase the risk of forecasting the profits of future events and enable the trading system to deals which such unfavorable surprises effectively and this is where WPD comes in. That is especially true in a mobile environment, running the analysis from a smart cell phone or a tablet that does not have the resources to develop new models, but can remediate and accommodate the higher risk of larger forecasting errors. This study represents simulation that regresses the predicted variable, *Paper Profits of a Simple Moving Average (SMA)* using the statistical method of Trend-Following Ordinary Least Square (OLS) Regression function within an Automated Trading System (ATS). The predictor variables within the predictive model include Total Trades, Winners, Win/Loss Rates, and Trade Size and Intraday Drawdown. The trading portfolio diversifies the asset classes to include *Stock Index (S&P500), Forex, Commodities and Futures Portfolios SMA Profit* models using the predictor variables: Trades, Winners, Win/Loss Rates, Trade Size and Intraday Drawdowns. The simulation model develops analytical mobile audits of Predictive Modeling Residual Analysis Plots of ATS Strategies using a Visual (graphic) Mobile (smart phone/tablet) Audit counter party Audio/Video (AV) Surveillance approach. The result of these combined capabilities is that the trader or auditor will be able to detect and immediately correct any anomalies adversely affecting a subtending counterparty, such as a computer hang-up or an accidental reboot – thereby avoiding an interruption in trade. The portfolio simulations used in this study are as follows: Forex (British Pound, Canadian/Euro Dollar, Japanese Yen, Swiss Franc); Precious Metals (Gold, Comex, Silver) and Commodities (Cocoa, Coffee, Copper, cotton, Crude/heating Oil, live hogs, Orange Juice, Soybeans, sugar, wheat) Treasuries (US Bonds, T-Note_10-Year). Other simulations, however, would have been equally effective. It is also important to emphasize that a trader could use other asset classes such as mutual funds, as well as different statistical methods than the ones used here. The current study aims to develop a visual counterparty surveillance remote audit approach to ATS strategies and indicators of Simple Moving Averages (SMA) and/or Ordinary Least Squares (OLS) Linear regression. Future studies will focus on other statistical regression methods or trading indicators, such as Polynomial, Log, Exponential, Power regression channels, R-Square, Slope, Intercept, P-values, F-Values, Statistical Significance, among others.

Introduction and Literature Review

Counterparty surveillance promotes transparency and clarity of the relevant facts across financial transactions so that systems' users can discover the model's bias which will consist of either certain optimization, or over-optimization. The trader can then devise ways to remediate these biases. Automated Trading Systems (ATS) that are optimized for certain securities such as equities, stocks or stock funds, remain sub optimized for other asset classes such as trading currencies. Thus, the ATS may generate a much higher rate of winning trades in equities, compared to currencies. Likewise, within the same security class, this trading strategies may be optimized or over optimized for a maximum trading period of 5 days, and may be sub optimized for longer holding periods. However, sellers of such systems may falsely promote them as equally effective for all securities and all trading time frameworks to maximize their sales volume and revenues. Such sellers may falsely promote these systems, as "one size fits all," due to the seller's self-interest bias, which again has to be assessed and discounted properly.

The following literature deals with surveillance, testing, and

[15]http://en.wikipedia.org/wiki/Multicultural_and_diversity_management

[16]http://en.wikipedia.org/wiki/Trading_strategy

forecasting method to correctly assess and discount variety of biases. Back testing of securities trades is an area where validity, forensic accounting, and audit testing is very important. This study focuses on employing research methodologies that highlight the importance of forensic accounting, auditing, fraud mitigation, and litigation service issues. These instructional methodologies include multi-media capabilities, data management, and data engineering. Software was developed that analyzes and improves forensic accounting research skills, research tools, and research techniques for all that use the software.

Rushinek and Rushinek (1997, 1998, 1999, 2000a) demonstrate a self-vetting system for 'Rating and Ranking Best Practices of the British Petroleum Oil Company and the Oil and Gas Industry'. As the system runs repeatedly, eventually the 'Sales to Cash Forecasting Univariate Regression Trend Analysis' emerges as the best practice among a large variety of 'Computer Modeling'. Even though, this was done for the Oil and Energy industry, the lessons apply to any search for best practices. This study promotes audio visual (AV) surveillance publications, and their download and viewing rates, ranking and rating publication, as a self-vetting system of best practices of e-learning and educational materials.

IFRS compliant AV HD recording audit of standards of effective learning strategies

Rushinek and Rushinek (2009a, 2009b) have been conducting workshops for the American Accounting Association (AAA) about International Financial Reporting Standards (IFRS). These workshops raised the issue of compliance with multiple sets of unrelated standards into integrated compliance efforts. Course Programmers for E-competences (CPE) for accountants are training programmers and workshops for e-competences, making sure that they can keep their Certified Public Accountant (CPA) or similar certificates current. Automating the process of recording, distributing, making the instructor an instant author of the materials, and rewarding them further with royalties of sales of the videos, the transcripts, the tests and assessments automatically generated from these transcripts will improve their overall competencies and performance.

Cell phone real-time forensic audit on the World Wide Web (WWW)

To complement the traditional after-the-fact auditing, this case study deals with real-time auditing. This means that the auditor watches the activities in while they occur; hence the term 'real-time'. The system is using the World Wide Web instead of limiting the access to the intranet; adding a potentially profitable online distances learning service.

Rushinek and Rushinek (2003c, 2008) demonstrate how surveillance video playback, peer evaluation and discussion of the 'Role Play Forensic Accounting, Auditing and Tax Expert Witness', can be very effective in 'Providing Testimony and Computer Litigation Support Teaching, Services, Research and Development'. It shows that such visual aids, as AV surveillance materials can dramatically enhance existing instructional technologies, while improving the security for the participants.

Counterparty surveillance audit AV improves records what is going on inside and outside the computer

Counterparty surveillance applies to the surveillance of a seller of ATS strategies. The buyer can evaluate the veracity of the seller by testing the claims that it trades equally well for all securities, markets, and time periods. Product/services in the manner of course/lecture blending,

distance instruction and self-study education all add to additional funds generated for all parties involved. If security surveillance equipment is already in place and working, the cost of equipment is already been realized by the institution and only minimum capitalization may be needed to begin revenue generation.

Currencies, Commodities, Equities, Fixed Income Securities Markets Automated Trading Systems (ATS) Holding Periods Wins Audit

This study develops an OLS regression to explain the profit of an ATS example, and illustrates how traders may produce a budget for the expected profits to reduce the chances of running out of capital or cash, and avoid bankruptcy, as a part of proper money management. This will also be part of an audit that should be conducted periodically to ensure proper operational and financial controls.

Hypothesis Testing

This study tests the hypothesis that there is no significant difference among Automated Trading Systems (ATS) regression coefficients. This study tests such a null hypothesis claiming that there is no difference in the values of the predictor independent variables of the OLS regression equation. These trades are dealing with a variety of securities including Currencies, Commodities, Equities, Fixed Income Securities, and Holding Periods in the number of Days of Exits from the trades. These systems have been back-tested in the following markets: S&P-500, 10-year T-note, Wheat, Eurodollar, Corn, Cotton, Crude oil, Sugar, Japanese yen, Live hogs, Soybeans, U.S. bond, British pound, Deutsche mark, Gold, Canadian dollar, Orange juice, Silver, Coffee, Heating oil, Copper, Swiss franc, to generate these paper profits.

Data Collection

The data collected by the Automated Trading System (ATS) include Securities Traded Currencies % Wins, and Holding Periods in the number of Days of Exits for Commodities, Equities, Fixed Income, with the duration of 5, 10, 15 Exit Days. These systems have been back tested in the following markets: S&P-500, 10-year T-note, Wheat, Eurodollar, Corn, Cotton, Crude oil, Sugar, Japanese Yen, Live hogs, Soybeans, U.S. bond, British pound, Deutsche mark, Gold, Canadian dollar, Orange juice, Silver, Coffee, Heating oil, Copper, Swiss franc.

Total Trades, Winners, Size and Intraday Drawdown Explain Paper Profit - Simple Moving Average (SMA) Trend-Following OLS Regression Automated Trading System (ATS) Model.

Appendix 1 shows the Test results for 65sma-3cc trend-following system in columns 1-7. Appendix 1 includes the Market Date, Start, and End of Trade. Paper Profit ($) is the predicted or dependent variable of this multiple linear regression model using the Ordinary Least Square (OLS) method. The remainder variables are the independent or the Predictor Variables. They include the Total Trades, Winning Trades (%), Average Win/Loss, Average Trade (S), Maximum Intraday Drawdown (S), Days, and the number of trades or observations. For example, the British pound, the range of dates was 7/75-7/95, starting at the 7/1/1975, and ending at the 7/1/1995, with paper profits of 125,344, due to a total of 105 trades, 34% of them are Winning Trades, 3.72 Average Win/Loss, 1,193 average trade, and Maximum Intraday Draw-down of -25,431, for a total holding period of 7305 days, which is observation number 1. In a regression equation form it will look like this:

Paper Profit ($)=f (Total Trades+Winning Trades (%)+Average Win/Loss+Average Trade(S)+Maximum Intraday Drawdown (S)+Days)

This Automated Trading System (ATS) is the Three Consecutive Closes (3cc) above or below the sixty-five day SMA (65sma) (Chande, 1995)

This section discusses how to formulate and test a simple, non-optimized, trend-following system that makes as few assumptions as possible about price action. This section arbitrarily uses a sixty-five day simple moving average of the daily close to measure the trend. Sixty-five days is simply the daily equivalent of a 13-week SMA (13 × 5=65); which represents one-quarter of the year. Sixty-five day analysis is an intermediate length moving average that will consistently follow a market's major trend. As the daily data show, "when the market is trending up, prices are above the 65-day SMA, and vice versa. In sideways markets, this SMA flattens out and prices fluctuate on either side. Clearly, the trading system picks up and sticks with the prevailing trend (Chande, 1995).

Many aspects of this study allow for the conclusion that the trend has turned up. The usual way is to use a shorter moving average of, say, 10 days, and decide that the trend has changed when the shorter average crosses over or under the longer moving average. If you decide to use a short moving average, its "length" will be crucial to your results. Another weakness is that often prices will move faster than the shorter moving average, so that the entries can seem rather slow. September 1995 Japanese yen contract showing the 65-day SMA and the signals generated by the system. The 65sma-3cc system stayed long throughout this major uptrend in the S&P-500 index in 1995.

Hence, the 65sma-3cc system will require three consecutive closes (3cc) above or below the 65-day SMA (65sma) to determine that the trend has changed. For example, the trend will be said to have turned up after three consecutive closes above the 65-day SMA. Similarly, the trend will have turned down after three consecutive closes below the 65sma. Once again, the requirement of three consecutive closes is arbitrary. It could be ten consecutive closes or any other number. Clearly, the results will vary with the number of confirming closes (Table 1).

Data Analysis

Table 1 shows the SUMMARY OUTPUT of the Regression Statistics

- Displaying the Multiple R of 0.987426251

- R Square of 0.975010602,

- Adjusted R Square of 0.965639578,

- These results indicate that the independent variables explain almost 100% of the variability of the dependent variable.

- The results show the observations of 23 trades, which represents the total number of trades that the system generates.

Likewise, the decimal places have been rounded to most significant four characters, to improve the readability. Notice, that this system output sometime an image of a report, rather than just text. Therefore, it cannot easily be modified by a word processor, to make it more difficult

to alter and falsify it. The "fit to page" process, leads to the missing characters. Thus, the authors have appended another ASCII versions of the tables that may be used for easy reformatting, typesetting, reformatting, while keeping the original, image version of the tables, for authenticity purposes. As this is designed primarily for A Programming Interface (API) of program to program communication automation, rather than human readability. Such API enable Excel to communicate directly with trading platforms such as NinjaTrader, Trade Station etc., without human interference, even for speedy real-time analysis of High Frequency Trading (HFT) tick level time intervals. The residual output included enables the reader, auditor, or trader to assess the departure from the normality of the residuals? While it "may not meet the standard of an empirical article in any discipline[1]", "cooking and uncooking the books," is not a standard empirical article as well. However, it is the focus of this article. This article focuses in distortions and manipulations of analytical results, where a high R-Square may result from departure from the basic regression assumptions rather than the high level of predictability of the results.

As Rushinek and Rushinek illustrates "Managerial auditors mixed cost forecasting assumption departure error estimates for litigation and professional liability risk reduction" lead to misunderstanding of the predictability of financial models. Especially, among managerial auditors that unlike, rocket scientists and professional algorithmic programmers, are not trained statisticians and may think that the high R-Square, like in this case, is due to a highly predictable environment, when in fact it is just an anomaly of a significant departure from the linear regression models' assumptions.

Like auditors, and traders, as well as auditing and trading software, all use regression models frequently since they are available (Regression and R-Square are built-in functions). Yet, almost none of the auditing and trading software provides multiple reliable statistical measures of compliance and/or departure from the basic regression model assumptions, resulting in misinterpretation of the results and ultimately regrettable decisions. Such error risk measures are included in some of the more sophisticated auditing (Type I and II Errors), econometric and statistical analysis software (such as SPSS and SAS), which is usually beyond the scope of standard auditing and trading environments, especially in the mobile visual categories of mobile touch screen devices, such as smart phones, tablet and Personal Digital Assistants (PDAs) as well as other consumer electronic devices such as "stand-alone" WIFI cameras, and camcorder that can stream directly to the WWW sites, without any additional computers (Table 2).

Table 2 describes the ANOVA with its parameters of DF, SS, MS, F, Significance F, Difference, and

Regression. It rejects the null hypothesis claiming the regression coefficients are zero by the positive difference between the F and the F Significant of=104.045254- 6.5426E-12= 104.045254, >0, at the .05 of statistical significance level.

Summary, Conclusions and Implications

Summary

For the development of Automated Trading System (ATS) strategies, this study proposes an OLS regression model. The OLS regression model will estimate the profits that the trades may generate as part of more effective money management subsystem. Such subsystem may help in correctly assessing the risk of running out of resources and cash. The paper shows how abnormally distributed Maximum Intraday Drawdown (S) residuals (not a normally distributed bell shape curve) tend to be skewed and therefore, may deserve additional attention;

Regression Statistics	
Multiple R	98.7426%
R Square	97.5011%
Adjusted R Square	96.5640%
Standard Error	12363.53
Observations	23

Table 1: Summary output.

ANOVA	Df	SS		MS	F	Significance F	Difference	
Regression	6	9.542E+10		1.590E+10	1.040E+02	6.543E-12	1.040E+02	>0
Residual	16	2.446E+09		1.529E+08				
Total	22	9.787E+10						

Table 2: ANOVA.

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-63259.1047	23852.7341	-2.6521	0.0174	-113824.6418	-12693.5675	-113824.6418	-12693.5675
Total Trades	186.4035	184.3675	1.0110	0.3270	-204.4381	577.2451	-204.4381	577.2451
Winning Trades (%)	403.5797	608.9582	0.6627	0.5169	-887.3541	1694.5134	-887.3541	1694.5134
Average Win/Loss	11543.9825	4786.8507	2.4116	0.0283	1396.3125	21691.6525	1396.3125	21691.6525
Average Trade (S)	89.9587	9.4418	9.5277	0.0000	69.9430	109.9744	69.9430	109.9744
Maximum Intraday Draw down (S)	-0.0948	0.1598	-0.5932	0.5613	-0.4336	0.2440	-0.4336	0.2440
Days	-0.0461	1.0517	-0.0438	0.9656	-2.2756	2.1835	-2.2756	2.1835

Table 3: The coefficients are not zero and the equation can explain more than 90% of the variability of the expected profits.

based on the principle of performance evaluation review of the largest abnormalities. In cases of automated Business Intelligent Stock Market Matching Engine for the Oil and Gas Industry this paper may violate materially the Normality Assumption of Linear Regression and may lead to shortages of cash and liquidity crunches, which lead to poor Control Analysis and out of control decisions; followed by out of control cash flow problems. ATS with such out of control decisions may result in excessive drawdown. For example, companies that reach the maximum drawdown frequently may collapse during uncertain market conditions. Uncertain market conditions could be a nuclear war in the Middle East, which would have a drastic impact on oil prices.

Conclusions

In conclusion this study states that one can reject the null hypothesis, which had asserted that there are no statistically significant differences among the regression equation coefficients and zero. The null hypothesis has been rejected in favor of the alternate hypothesis, which states that the coefficients are not zero and the equation can explain more than 90% of the variability of the expected profits.

The weaknesses in this system are that all sample observations have been used for testing. Therefore, out of sample observations have not been included, which means that when a trader applies the model to additional "out of sample" transactions, the accuracy of the explanations will deteriorate. Therefore, more testing and adjustments will be required, to refine this approach (Table 3).

Implications

The current study implies that more tests are required to further validate this model. Such tests have to be done on a regular basis and apply to "out of sample" observations, or a "hold-out" sub-sample (Table 4).

Future studies

Future studies will examine the departure from regression assumptions. Based on current research, the conclusion is that more tests are required to validate this model. Such tests apply to some variables that have not been examined or discussed in the present paper. Future tests would include the plotting of variables that have not been examined in this paper. Furthermore future studies would discuss how these other variables might affect back testing and forward testing. Future studies will plot other predictor variables to see whether these variables comply with the regression assumption. Then the study will assess the impact of the departure from such assumptions and how to treat it in a real-time, mobile device trading, and audit situations. Most

Residual Output				Probability Output	
Observation	Predicted Paper	Residuals	Standard	Percentile	Paper Profit ($)
	Profit ($)		Standard		
1	122373.6699	2970.3301	0.2817	2.1739	-15370.0000
2	-10573.4642	-2176.5358	-0.2064	6.5217	-12750.0000
3	-26161.3709	10791.3709	1.0235	10.8696	-7890.0000
4	220969.8881	18126.1119	1.7191	15.2174	-7260.0000
5	-35896.9568	28006.9568	2.6563	19.5652	6263.0000
6	28437.9273	-2356.9273	-0.2235	23.9130	13018.0000
7	114274.7490	-1784.7490	-0.1693	28.2609	17570.0000
8	16761.4419	808.5581	0.0767	32.6087	26081.0000
9	66029.4641	2545.5359	0.2414	36.9565	31971.0000
10	46137.8266	-11962.8266	-1.1346	41.3043	34175.0000
11	54623.6185	-853.6185	-0.0810	45.6522	34219.0000
12	64227.7886	-8029.7886	-0.7616	50.0000	49493.0000
13	165623.7598	-22198.7598	-2.1054	54.3478	50143.0000
14	28949.7475	3021.2525	0.2865	58.6957	53770.0000
15	17330.9754	-4312.9754	-0.4091	63.0435	56198.0000
16	185565.2504	11739.7496	1.1134	67.3913	62406.0000
17	57274.4337	5131.5663	0.4867	71.7391	68575.0000
18	3933.3567	-11193.3567	-1.0616	76.0870	108475.0000
19	56113.9224	-6620.9224	-0.6280	80.4348	112490.0000
20	107850.6496	624.3504	0.0592	84.7826	125344.0000
21	43790.3649	-9571.3649	-0.9078	89.1304	143425.0000
22	47679.9624	2463.0376	0.2336	93.4783	197305.0000
23	11429.9952	-5166.9952	-0.4901	97.8261	239096.0000

Table 4: Out of sample.

of the activities will apply to "out of sample" observations, or a "hold-out" sub-sample. Such forward testing should be built into trading platforms that use ATS strategies and should not require programming; this makes the platform more user friendly. As of now, most of these methods are not built-in and do require some programming, or at least understanding of some programming. Therefore, many users do not explain the profits and do not estimate formally and quantitatively expected future profits, and cash-flows. This is leading to a shortage of resources, liquidity problems, cash-flow shortage, and eventually a premature bankruptcy. To reduce such problems, additional profit projection techniques such as OLS regression models can be deployed to quantify the risk, and be better prepared to handle the worst case scenarios.

Therefore, while the current variance in the predictor variables explains more than 95% of the variance in the profit, of the current sample data, the predictor variables may predict future samples much

less accurately. Such drop in prediction quality has to increase the risk of forecasting the profits of future events and enable the trading system to deal with such unfavorable surprises effectively. That is especially true in a mobile environment. These mobile environments run the analysis from a smart phone or tablet. Consequently analysis from a smart cell phone or a tablet does not have the available resources to develop new models, but can remediate and accommodate the higher risk of larger forecasting errors.

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