

Volume 20, Number 1

ISSN 1948-3147

**Allied Academies
International Conference**

**New Orleans
April 8-10, 2015**

**Academy of Accounting
and Financial Studies**

PROCEEDINGS

Copyright 2015 by Jordan Whitney Enterprises, Inc, Weaverville, NC, USA

All authors execute a publication permission agreement taking sole responsibility for the information in the manuscript. Jordan Whitney Enterprises, Inc is not responsible for the content of any individual manuscripts. Any omissions or errors are the sole responsibility of the individual authors.

The Academy of Accounting and Financial Studies Proceedings is owned and published by Jordan Whitney Enterprises, Inc, PO Box 1032, Weaverville, NC 28787. Those interested in the *Proceedings*, or communicating with the *Proceedings*, should contact the Executive Director of the Allied Academies at info@alliedacademies.org.

Copyright 2015 by Jordan Whitney Enterprises, Inc, Weaverville, NC

Table of Contents

PREDICTORS OF STOCK RETURNS: SOME EVIDENCE FROM AN EMERGING MARKET

**Joseph Abrokwa, University of West Georgia
Paul Nkansah, Florida A&M University**

ABSTRACT

This study documents the predictive ability of five variables (dividends per share, dividend price ratio, price earnings ratio, book to market ratio, and size) on common stock returns using evidence from the emerging market country of Ghana. It sought to determine if the predictive ability of these variables documented in several international studies going back many decades could be replicated using data from the Ghana Stock Exchange.

The study found that of the five variables in the study, only dividends per share had a significant predictive effect on stock returns. From the study, it is concluded that higher stock returns are associated with higher dividends in the emerging market environment of Ghana; this result is consistent with prior research.

Also, the hypothesized relations between stock returns and dividend price ratio, price earnings ratio, size and book to market ratio were confirmed, but these relations were not found to be statistically significant.

Keywords: Stock returns, dividends, emerging markets, Ghana Stock Exchange.

THE EBOLA OUTBREAK: A TEST OF MARKET EFFICIENCY

LeeAnna Barker, Longwood University
Frank Bacon, Longwood University

INTRODUCTION

On September 30, 2014, Thomas Duncan became the first person to be diagnosed with Ebola in the United States. Two hospital employees who treated him also became infected with the disease, setting off a nationwide effort to contain the disease, and fears of a larger outbreak. Human crises, such as that of Ebola, have major impacts on the economy and stock market. How soon does the market respond to an imminent disaster? While it is likely that the economic impact will correlate with the actual spread of the disease, the outcomes depend on the public response.

One key lesson economists and public healthcare experts have learned from many different epidemics such as the Chinese Outbreak of Severe Acute Respiratory Syndrome, the H1N1 influenza, and that of Swine Flu in Mexico in 2009 is that the indirect costs of public risk aversion can generate far more economic damage than the direct cost of healthcare outlays and other containment expenditures. The purpose of this study is to examine the risk adjusted rate of return on selected airline markets 30 days prior to the outbreak and 30 days after the first diagnosis of the disease.

BACKGROUND AND PURPOSE

The purpose of this study is to test the semi-strong form efficient market theory by analyzing the effects of the Ebola outbreak on the risk adjusted rate of return of 15 randomly selected airlines' stock prices. Specifically, how fast will a firm's stock price react to the information and fear of Ebola? The study tests whether pandemics directly incorporates the strong form, semi-strong form, or weak form of the market efficiency hypotheses.

LITERATURE REVIEW

Eugene Fama (1970, 1976) defined market efficiency in terms of how fast the stock market reacts to information. He suggested that there are three types of market efficiency: weak-form, semi-strong-form, and strong-form efficiency. The weak-form hypothesis supports that investors can not earn an above normal return (higher than the market or the return on the S&P 500 index) by acting on past price or return information. If the market is weak, then stock price reacts sufficiently fast to past information to disallow investors an above normal return by acting on this type of information. For example, if an investor receives the report and buys the firm's stock after discovering the firm had high earnings for the period and the stock price does not rise, the market is said to be efficient with respect to past information, thus making it weak form efficient.

Semi-strong, a second form market efficiency theory suggests that the market reacts so fast to all public information that no investor can earn an above normal return by acting on this type of information. Tests of semi-strong form efficiency (Patell and Wolfson 1979) have shown that no investor can earn an above normal return on publicly available information such as annual

accounting reports, block trades, (Fama, Fisher, Jensen, and Roll, 1969), earning announcements, stock split announcements, dividend announcements, and repurchase of stock announcements. For instance, if an individual buys the stock on the announcement date and still does not make an above normal return, the market is considered semi-strong form efficient.

Lastly, strong-form efficiency theory suggests that no investor can earn an above normal return using any information, whether it is public or private. If the market is strong form efficient, then stock prices react so fast to all public and private information then no investor can earn an above normal return by acting on this type of information. In this case, the market reacts to an event within the confines of the firm, or secret information, when it occurs even before it is publically announced. In order for strong market efficiency to occur, investors must act on inside information, which is illegal in the United States. For example, if an individual buys the stock on the event and still does not make an above normal return, the market is said to be strong form efficient.

Although there is little research on market efficiency and pandemics, there are many estimates on what will happen to the economy based on previous epidemics in the past. It is said that although new advances in science and medicine help us gain ground against certain infectious diseases, even in the twenty-first century other infectious disease continue to emerge at a rapid pace – and frequently with significant human and financial costs.

One recent example is Severe Acute Respiratory Syndrome (SARS) which was the Chinese outbreak in 2002 which claimed nearly 800 lives and imposed a devastating 50 billion dollars in global losses. Already, the economies of Western Africa have experienced substantial contractions since March 2014, when the first case of Ebola was reported. The World Bank estimates that each of the three main affected countries has already lost 2-3% of its GDP, drawing these estimates from leading indicators like agricultural production and export, air traffic density, fuel sales, and cement sales. The report also analyzes two near future (2015) scenarios of Ebola's impact, projecting subdued effects if there is a swift, unilateral commitment to containment, but over \$25-32 billion in GDP loss in all West Africa if the disease continues to spread.

The contraction is characterized by the interaction of direct and response impacts to the disease. As a direct result of Ebola, hospitals fill, drugs run low, and medical staff is exposed to the disease. Consequently, healthcare costs skyrocket and quality care decreases. Ebola thus spreads faster, stealing the lives of many breadwinners and forcing families into poverty. Government revenue, too, decreases and because of the increased spending on healthcare and lower average income. Families no longer shop at the market because of both public health and financial concerns: small businesses suffer from this fear and shrinkage – indeed, disappearance-of income. Workers stay home to avoid contact with the disease, so firms raise prices to compensate for lower production and sales. Fewer people are working, and even fewer are buying. The direct impact is self-propelling and requires eternal involvement to break the cycle.

Ebola has affected foreign direct investment, which has remained a significant part of the African economy as a vestige of colonialism. Increased vulnerability and degenerating economic conditions have caused a reduction in FDI by shattering investor confidence. As it stands, the total current account deficit of Liberia, Sierra Leone, and Guinea is 12% of their combined GDP. Though this is not inherently negative, such a high current account deficit indicates heavy reliance on imports and foreign investment.

According to Mead, senior fellow at the Center of Global Development, any economic impact on the stock market or in travel is not the impact of the disease per se but the impact of largely irrational “aversion behavior.” The impact of aversion behavior on the markets is like a

speculative bubble, but in reverse, adding he expects “reverse bubble” to collapse in a matter of weeks, as Americans realize that a strong public health system can protect them.

METHODOLOGY

This study includes 15 airline companies that the Ebola pandemic may have had an impact on. The purpose of this study was to see how fast and how much of an impact the Ebola pandemic affected the stock prices of those 30 firms. I analyzed the firms' prices and the corresponding Standard & Poor's 500 Index (S&P 500) from 180 days before the event date on September 30, 2014 to 30 days after.

To test the effect of the pandemic on the 15 firms' stock prices and to test the semi-strong market efficiency theory with respect to public announcements on the Ebola outbreak, I used the following hypotheses:

H1₀: The risk adjusted rate of return on the stock price of the sample of airline firms is not significantly affected by this type of information on the event date.

H1₁: The risk adjusted rate of return on the stock price of the sample of airline firms is significantly negatively affected by this type of information on the event date.

H2₀: The risk adjusted rate of return on the stock price of the sample of airline firms is not significantly affected by this type of information around the event date as defined by the event period.

H2₁: The risk adjusted rate of return on the stock price of the sample of airline firms is significantly negatively affected around the event date as defined by the event period.

This study uses the standard risk adjusted event study methodology from the literature to test the stock market's response to the September 30, 2014 Ebola event date. The required historical financial data, i.e. the stock price and S&P 500 index during the event study period were obtained from the internet website <http://finance.yahoo.com/>. The historical stock prices of the 15 airline companies, and S&P 500 index, for the event study duration of -180 to +30 days (with day -30 to day +30 defined as the event period and day 0 as September 30, 2014)

The holding period return of the companies (R) and the corresponding S&P 500 Index (R_m) for each day in this study were calculated using the formula:

$$\text{Current daily stock return} = \frac{\text{current day close price} - \text{previous day close price}}{\text{previous day close price}}$$

$$\text{Current daily index return} = \frac{\text{S\&P current close price} - \text{S\&P previous close price}}{\text{S\&P previous close price}}$$

A regression analysis was performed using the actual daily return of each company (dependent variable) and the corresponding S&P 500 daily return (independent variable) over the pre-event period (day -180 to -31 or period prior to the event period of day -30 to day +30) to obtain the intercept alpha and the standardized coefficient beta. Table 1 shows the alphas and betas for each firm.

In order to get the normal expected returns, the risk-adjusted method was used. The expected return for each stock, for each day of the event period from -30 to +30 was calculated as:

$E(R) = \alpha + \text{Beta} \times (R_m)$, where R_m is the return on the market (S&P 500 index). Next, the Excess Return (ER) was calculated as the Actual Return (R) minus the Expected Return $E(R)$. Average Excess Returns (AER) were then calculated for each day from -30 to +30 by averaging

the excess returns for all of the firms for the given day. $AER = \text{Sum of Excess Return for given day} / n$, where $n = \text{number of firms in the sample}$. In addition, daily cumulative average excess returns were calculated by adding the AER's for each day from -30 to +30. The graph of CAER was plotted for the event period from day -30 to day +30.

QUANTITATIVE AND RESULTS

Did the market react to the Ebola outbreak? Was the information within the event significant? If the information surrounding the event suggests new, significant information then we would expect the average excess daily returns as shown in Exhibit 1 to be significantly different from 0 and differ from the CAER. If a significant risk adjusted differences is observed, then this information did significantly impact the firm's stock price, as hypothesized. To statistically test for a difference in the risk adjusted daily average excess return and the cumulative average excess daily returns (day -30 to +30), a paired t-test was used. The result of the tests supports the alternative hypotheses and concludes that the risk adjusted return of the stock price of the sample of airlines is indeed significantly affected around and on the event date.

How efficient was the market to this information? Which type of market efficiency does this event study support? Does it support a weak, semi-strong, or strong form of market efficiency theory? To test this, I used the Cumulative Average Excess Return to see if it was significantly different from zero and analyzed the graph between the time and CAER. As shown in exhibit 2, there is evidence that the adjusted rate of return on stock prices began to decline 5 days prior to the event date and rapidly declined after the event had occurred.

EXHIBIT 1. AVERAGE EXCESS RETURNS OVER EVENT PERIOD

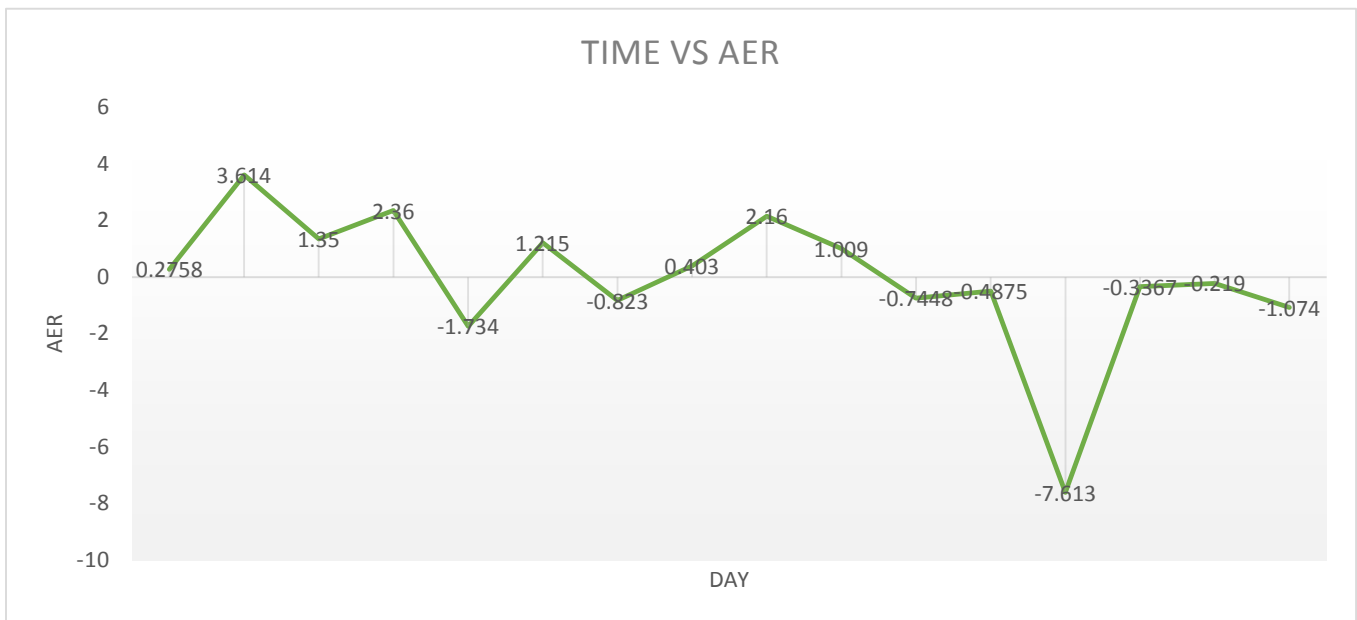
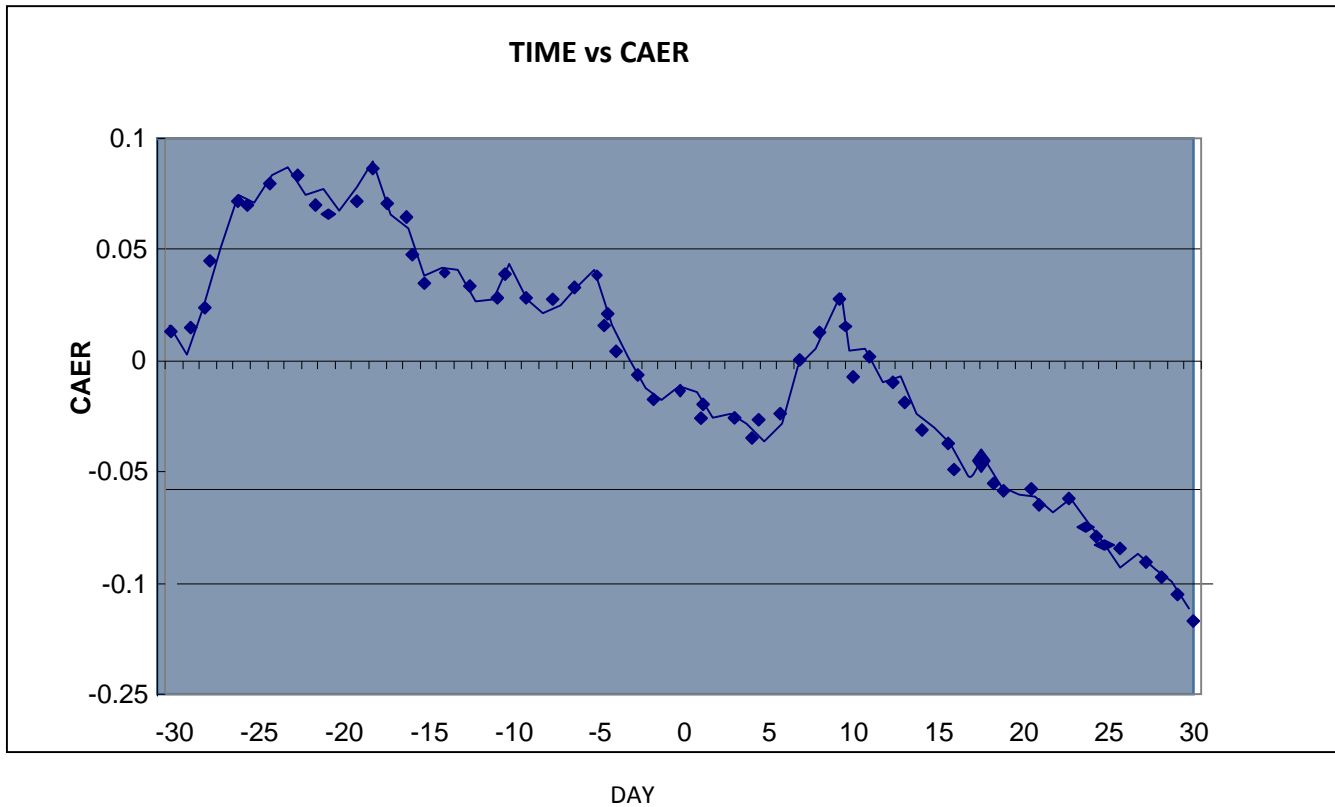


EXHIBIT 2. CUMULATIVE AVERAGE EXCESS RETURNS OVER EVENT PERIOD



CONCLUSION

This study examined the effect of the Ebola pandemic on stock prices' risk adjusted rate of return on 15 randomly selected airlines. Appropriate statistical tests for significance conducted in this study show that Ebola had a significantly negative effect on the risk adjusted rate of return on selected airlines' stock prices over the event study period. Specifically, results show that airline companies started seeing minor drops 15 days prior to the event and rapid decrease five days before, and the decrease continued hastily after the event date, reflecting a semi-strong form of market efficiency.

References are available upon request.

SAMPLE INDICATORS FOR PREDICTING U.S. PUBLICLY TRADED FOR-PROFIT HOSPITAL FINANCIAL SOLVENCY

Rena Biniek Corbett, Ph.D. Barton College
Kenneth D. Gossett, Ph.D. Walden University

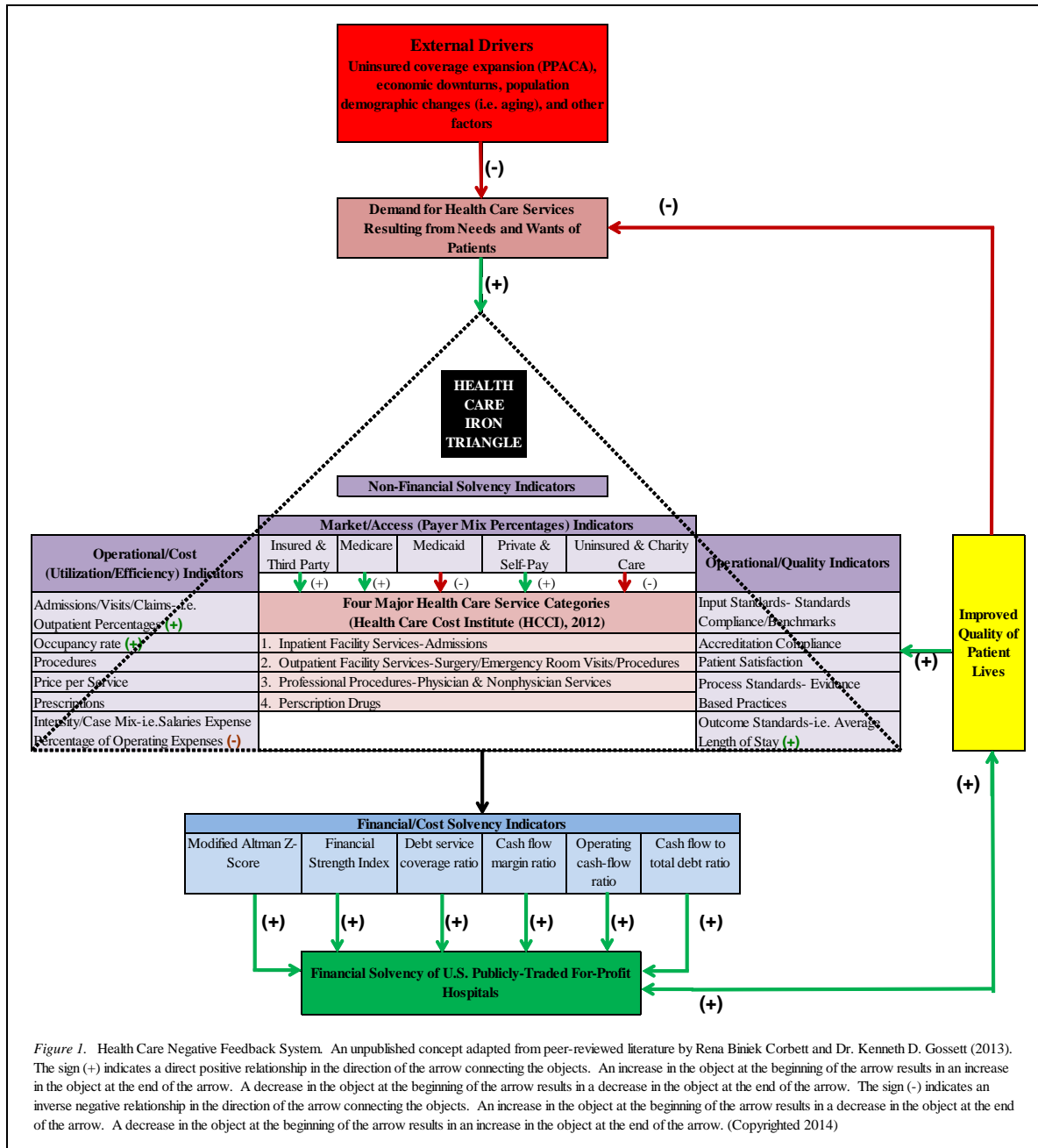
ABSTRACT

Administrators of U.S. hospitals and health systems must contend with the increasing pressures of changing economic conditions in response to the current regulatory changes in the health care industry. The detection of early warning signs of financial distress is imperative for management to be able to align strategic plans in advance to meet these challenges and prevent financial insolvency and bankruptcy. Research on financial and non-financial measures as indicators of financial solvency of U.S. hospitals is limited at the hospital system level; particularly U.S. publicly traded for-profit hospitals.

The purpose of this nonexperimental quantitative study was to evaluate the effectiveness of financial and non-financial indicators in predicting financial solvency of U.S. publicly traded for-profit hospitals. Data was collected from annual audited financial reports electronically filed on Form 10-K by twenty-three U.S. publicly traded for-profit hospitals with the Security and Exchange Commission. The use of publicly accessible archival audited data ensures data continuity negating reliability and validity concerns. The criterion or dependent variable was the financial group status (solvent or insolvent) of the hospital. The independent predictor variables include financial indicators (e. g., two Altman Z-scores, two Financial Strength Indices, etc.) and non-financial indicators (e. g., Medicaid revenue percentage, uninsured revenue percentage, average length of stay, etc.). The sixteen indicators were analyzed for significance for predicting hospital financial solvency using logistic regression.

Findings showed that the financial and non-financial independent predictor variables tested were not statistically significant in predicting hospital financial solvency. Research that identifies insignificant measures of financial solvency in U.S. hospitals and hospital health systems may be useful for identifying the true solvency indicators for inclusion in a balanced scorecard as a hospital solvency management tool. Findings may also be useful to the SEC for setting policies on data availability and consistency requirements within 10-K filings to enhance investor decision-making. The Healthcare Negative Feedback System Model (Figure 1 below) served as the theoretical framework developed for this study is a significant contribution to the literature in the healthcare area.

Figure 1: The Healthcare Negative Feedback System Model



EXTENSION THREATS FROM IRC 501(R) AND THE AFFORDABLE CARE ACT —WHAT DOES THE FUTURE HOLD FOR HEALTH CARE ORGANIZATIONS?

**Kevin Ennis, Mississippi State University-Meridian
Carl Young, Mississippi State University-Meridian**

ABSTRACT

Final regulations of IRC 501(r) were published on December 31, 2014, and are effective after December 29, 2015 in the implementation of critical aspects of the Affordable Care Act. Three of the principal areas include Financial Assistance Policies (FAP's) determined by 501(r)(4); billing charges for medical and emergency care for low-income patients defined in 501(r)(5); and , accounts receivable (A/R) management and Extraordinary Collection Actions delineated in 501(r)(6). The IRS's power of enforcement is through the threat of revoking the provider's tax exemption as a 501(c)(3) non-profit organization. We identify possible extension threats that could expose medical providers to additional legal, cash flow, and organizational issues.

First, regulations dictate that compliance with all 501(r) requirements will include the provider and any other third-parties which have assumed responsibility for patient accounts. Providers that "outsource" revenue and A/R management to third-party vendors are at extended risk for legal liabilities from compliance, implementation, and administration of the regulations. Second, providers face extended exposure to increased bad debt and slow payment rates due to the increase in self-pay accounts and a change in the case-mix of the self-pay group to include more than just FAP patients. As self-pay amounts become larger and a greater percentage of A/R, cash flow from all patients threaten to slow. Third, 501(r)(5) threatens the extension of the "managed care" discounts to include patients outside the original, negotiated contracts. Under these rules, a discount must be applied to FAP-eligible patients for emergency and medically necessary care. Application of these discounts could be overwhelmingly burdensome and quite costly.

Finally, a possible extension threat exist with the possible applicability of all or selected provisions of the 501(r) to business sectors outside of its original 501(c)(3) organization intent. Can 501(r) be extended to hospital-based physicians under contract to the tax-exempt hospitals? What about self-pay patients of private, for-profit providers including hospitals, physicians, and other medical vendors? Could pressure be applied on the different cost-based intermediaries (Medicare and Medicaid contractual vendors) to adopt similar regulations? The justification for extending the law to include other medical providers not classified as tax-exempt could be rationalized through the nexus of benefitting from federal funds. Any medical service or product provider could be exposed to the rigorous requirements of the regulation due to the fact that providers accept assignment and receive Medicare and/or Medicaid payments from the federal and/or state governments.

UNDERSTANDING THE LIMITATIONS OF FINANCIAL RATIOS

Faello, Joseph, Mississippi State University

ABSTRACT

The purpose of this paper is to provide financial statement users and accounting academics with some useful insights when working with financial ratios. Initially, the uses and benefits of financial ratios and the limitations of using financial ratios are discussed from the financial statement users' and accounting academics' perspectives. Then, practical advice is provided to both financial statement users and accounting academics alike to mitigate the limitations of using financial ratios. Financial statement users and accounting academics will find the issues discussed in this paper useful in their work with financial ratios.

Key Words; Financial ratios, Comparability, Homoscedasticity, Outliers

INTRODUCTION

Financial ratios play an important role in the analysis of financial statements and accounting research. However, the use of financial ratios comes with its hazards. Both accounting academics and financial statements' users need to understand the problems and limitations in working with financial ratios. The purpose of this paper is to address these issues and to provide guidance on how to mitigate the problems surrounding financial ratios. Both accounting academics and financial statement users will find this study useful in their dealings with financial ratios.

The study is organized as follows:

1. Uses and benefits of financial ratios;
2. Limitations of financial ratios;
3. Dealing with the limitations of financial ratios; and
4. Conclusion.

REFERENCES

- Altman, E., and Hotchkiss, E. (2006). *Corporate Financial Distress and Bankruptcy*, Third Edition. Hoboken, NJ: John Wiley & Sons, Inc.
- Barnett, V., and Lewis, T. (1994). *Outliers in Statistical Data*, Third Edition. Hoboken, NJ: John Wiley & Sons, Inc.
- Belsley, D., Kuh, E., and Welsch, R. (1980). *Regression Diagnostics — Identifying Influential Data and Sources of Collinearity*, Hoboken, NJ: John Wiley & Sons, Inc.
- Canadian Institute of Chartered Accountants (CICA), (1993). *Using Ratios and Graphics in Financial Reporting*. Toronto, Canada: Canadian Institute of Chartered Accountants.

- Chatterjee, S., and Price, B. (1991). *Regression Analysis by Example*, Second Edition, Hoboken, NJ: John Wiley & Sons, Inc.
- Connor, G., and Herbert, N. (1999, Winter). "Estimation of the European Equity Model," *Horizon: The Barra Newsletter*, 169, Retrieved January 14, 2015, from <http://www.barra.com/Newsletter/nl169/estimationeuro169.asp>.
- Deakin, E. (1976, January). "Distributions of Financial Accounting Ratios: Some Empirical Evidence," *The Accounting Review*, pp. 90-96.
- Ettredge, M., Kwon, S., Smith, D., and Zarowin, P. (2005, July). "The Impact of SFAS No. 131 Business Segment Data on the Market's Ability to Anticipate Future Earnings," *The Accounting Review*, 80(3), pp. 773-804.
- Fairfield, P., and Yohn, T. (2001). "Using Asset Turnover and Profit Margin to Forecast Changes in Profitability," *Review of Accounting Studies*, 6, pp. 371-385.
- Field, A. (2005). *Discovering Statistics Using SPSS*, Second Edition. Thousand Oaks, CA: Sage Publications Inc.
- Foster, G. (1986). *Financial Statement Analysis*, Second Edition. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Frecka, T., and Hopwood, W. (1983, January). "The Effects of Outliers on the Cross-Sectional Distributional Properties of Financial Ratios," *The Accounting Review*, Vol. LVIII(1), pp. 115-128.
- Ghosh, D., and Vogt, A. (2012). "Outliers: An Evaluation of Methodologies," *Section on Survey Research Methods – Joint Statistical Meetings, American Statistical Association*, pp. 3455-3460.
- Gujarati, D. (2003). *Basic Econometrics*, 4th Edition. New York, NY: The McGraw-Hill Companies, Inc.
- Hair Jr., J., Anderson, R., Tatham, R., and Black, W. (1998). *Multivariate Data Analysis*, Fifth Edition. Upper Saddle River, NJ: Prentice-Hall, Inc.
- Healy, P., and Wahlen, J. (1999, December). "Commentary: A Review of the Earnings Management Literature and Its Implications for Standard Setting," *Accounting Horizons*, 13(4), pp. 365-383.
- Kieso, D., Weygandt, J., and Warfield, T. (2013). *Intermediate Accounting*, Fifteenth Edition. Hoboken, NJ: John Wiley & Sons, Inc.
- Lien, D., and Balakrishnan, N. (2005, November). "On Regression Analysis with Data Cleaning via Trimming, Winsorization, and Dichotomization," *Communications in Statistics – Simulation and Computation*, Vol. 34(4), pp. 839-849.
- Martin, R., and Simin, T. (2003, September/October). "Outlier-Resistant Estimates of Beta," *Financial Analysts Journal*, 59(5), pp. 56-69.
- McNichols, M. (2000, Winter). "Research Design Issues in Earnings Management Studies," *Journal of Accounting and Public Policy*, 19(4/5), pp.313-345.
- Nissim, D., and Penman, S. (2001). "Ratio Analysis and Equity Valuation: From Research to Practice," *Review of Accounting Studies*, 6, pp. 109-154.
- Oyer, P. (1998, February). "Fiscal Year Ends and Nonlinear Incentive Contracts: The Effect of Business Seasonality," *The Quarterly Journal of Economics*, 113(1), pp. 149-185.
- Soliman, M. (2008). "The Use of DuPont Analysis by Market Participants," *The Accounting Review*, Vol. 83(3), pp. 823-853.
- Watts, R., and Zimmerman, J. (1986). *Positive Accounting Theory*, Englewood Cliffs, NJ: Prentice-Hall, Inc.

THE FAILURE OF WASHINGTON MUTUAL: A TEST OF MARKET EFFICIENCY

Joshua Keeder, Longwood University
Frank Bacon, Longwood University

INTRODUCTION

On September 25, 2008 the United States Office of Thrift Position seized the largest savings and loan association of Washington Mutual Inc. They filed for a Chapter 11 voluntary bankruptcy in Delaware where it was incorporated. In attempt to test the efficient market hypothesis, the test should show that the market is semi-strong efficient. Meaning that this event will not cause a significant fluctuation in stock price returns of other financial institutions. With new information, stock prices and returns adjust so quickly that no investor, using public information should be able to earn above a normal return.

The examination of how a public announcement can affect stock returns are used to map out the finance literature of many event studies. With regards to public announcements, research has shown that unanticipated and anticipated events can affect the market. The biggest key is to find out when did the market react to the sudden news of an event like the Washington Mutual failure. Information that investors have is vital to see how fast the market reacted or how fast the stock return responded because were the investors ahead of the game of the new information. Were they able to obtain prior information before the public announcements? It also depends on how similar instances that were in the same timetable give investors the ability to predict comparable events such as this one. With this being said the Washington Mutual collapse may have been predicted due to the fact the 2008 recession had such an economic downturn on the banks across the country.

How did the announcement of the failure of Washington Mutual on September 25, 2008 impact banks' stock returns? Did stock returns react before, on, or after the public announcement? How efficient is the stock market with respect to this public information? Is the market's reaction to the public announcement of the Washington Mutual failure weak form or semi-strong form efficient? In a deeper look into the event, does an event such as this one differ in effect of money center banks and savings and loan banks?

The purpose of this event study is to test the semi-strong form efficient market hypothesis by analyzing the effects of the announcement of the Washington Mutual failure on the stock price returns of other banks. If the stock market is efficient, this study should not observe a reaction on the announcement date since the stock price returns immediately reflect all the past and public information regarding the public announcement.

This study tests the public announcement of the Washington Mutual bank failure for semi-strong form market efficiency by analyzing two randomly selected samples: 8 money center banks and of 8 savings and loan banks. With the analysis of two different kinds of banks, the study should show if the stock price return reacts differently when there is a public announcement of a failure like Washington Mutual.

LITERATURE REVIEW

Under the efficient market hypothesis the stock price return perceives that all information that is available should match or reflect the return. In regards to the Washington Mutual failure no investor should be able to receive an above normal return as the stock price reacts so quickly to public information. Under market efficiency, there are three categories that it can be put into which are weak form, semi-strong and strong form efficiency.

When the market is in weak form efficient, the stock price is reacting to all past information so no one investor should be able to earn a return above normal return. In an instance where an investor shows a larger return than what is expected the question comes in, "did the investor receive inside information before the public announcement was given?"

The next phase of market efficiency is semi-strong market efficiency. This efficiency states that the stock price reacts so fast to all public information that no investor again should earn return above the normal. In 1969 FAMA conducted one of the first studies on semi-strong market efficiency and found a number of abnormal return at the announcement of stock splits and found that there is a considerable market reaction prior to the stock split announcements. The study showed that the market was not close to being semi-strong efficient. The study supports that if the market were to be semi-strong efficient then no investor acting on only public information should earn an above normal return.

The last form of market efficiency is strong-form efficiency. This form states that the price of stock reacts so fast to all information either public or private that no investor should earn an above normal return by only using the information given. The only way to get a higher than normal return would more than likely be breaking Securities Exchange Act of 1934, that regulates trading by insiders and requires trading by corporate officers, directors, and substantial owners to be reported to the S.E.C. The study done by Virginia Poly Tech University found that only breaking the law and the act of 1934 would let an investor receive a bigger than normal with the use of inside information. This would make the market not efficient.

Pettway examined the effects of large bank failures to see if there was a structural change in investor's cognizance of risk in the large commercial banking industry after the failures of the U. S. With this study, the question was to see if these failures would also give a negative perception of the industry overall as the announcement of a bank failure would raise concerns on long-term viability.

METHODOLOGY

This study examined two randomly selected samples consisting of 8 money center banks and 8 savings and loan banks in order to test the impact of the announcement of Washington Mutual bank failure on stock price returns. The study event date was the Washington Mutual Bank failure on September 25, 2008. Bank stock price and the corresponding S&P Index data was collected from 180 days prior to 30 days after the event date.

Using standard event study methodology from the finance literature, this study analyzed the two samples of money center and savings and loan banks against the corresponding S&P 500 Index to test the semi-strong form efficient market hypothesis with respect to the announcement of the Washington Mutual bank failure. The announcement date of the Washington Mutual failure is day 0. Historical stock and corresponding S&P 500 prices used in this event study were obtained from the Yahoo Finance website (<http://finance.yahoo.com>). The following steps were

taken to conduct the event study test. The historical stock prices for the samples of money center and savings and loan banks as well as the S&P 500 index were obtained for the event period from -180 days to +30 days from the event date. Days -30 through +30 is considered the event period and day 0 is considered the announcement date of September 25, 2008. Next, the holding period returns of the banks and the corresponding S&P index were calculated for each day in this study period using the following formula: $HPR = (\text{Current day's closing price} - \text{Previous day's closing price}) / \text{Previous day's closing price}$. Then, a regression analysis was performed for the pre-event period from day -180 through day -31 using the actual daily return percentage for each of the banks as the dependent variable and the corresponding S&P 500 daily return percentage as the independent variable. Table 2 shows the alphas and betas for each bank. Next, the risk-adjusted method was used in order to calculate the normal expected returns as follows: $E(R) = \alpha + \beta$

After that, the excess return was calculated as follows: $ER = \text{Actual Return (R)} - \text{Expected Return } E(R)$. The Average excess returns (AER) were calculated for each day during the event period (from -30 through +30) as follows: $AER = \text{Sum of all excess returns for each day} / \text{"N"}$ where: "N" equals the number of banks which in this test is 8 money center banks and 8 savings and loan banks. Then, the Cumulative AER (CAER) was calculated for the event period by adding the AERs for each day for both the money center banks and the savings and loan banks. After that, the graphs of the AER and CAER were plotted for the event period and are included in Chart 1 and Chart 2.

To test for semi-strong market efficiency on the Washington Mutual Bank failure announcement, the following valueless and alternative hypotheses are used for the two bank samples:

H1₀: this type of information on the announcement date does not significantly affect the risk adjusted return of the stock price of the two samples of banks.

H1₁: this type of information on the announcement date significantly negatively affects the risk adjusted return of the stock price of the two samples of banks.

H2₀: The risk adjusted return of the stock price of the two samples of banks is not significantly affected by this type of information around the announcement date as defined by the event period.

H2₁: The risk adjusted return of the stock price of the two samples of banks is significantly positively or negatively affected around the announcement date as defined by the event period.

H3₀: The reaction of risk adjusted return of the stock price of the sample of money center banks to the Washington Mutual bank failure announcement is not significantly different from the reaction of risk adjusted return of the stock price of the sample of savings and loan banks around the announcement date as defined by the event period.

H3₁: The reaction of risk adjusted return of the stock price of the sample of money center banks to the Washington Mutual bank failure announcement is significantly different from the reaction of risk adjusted return of the stock price of the sample of savings and loan banks around the announcement date as defined by the event period.

QUANTITATIVE TESTS AND RESULTS

The major question is did the failure of Washington Mutual bank make the market react. The way our hypothesis would be supported is that the market did in fact show either a decrease or increase in the stock price. The data actually showed great movement in the AER of both the money markets and savings and loans eleven days or so before the announcement. This supports

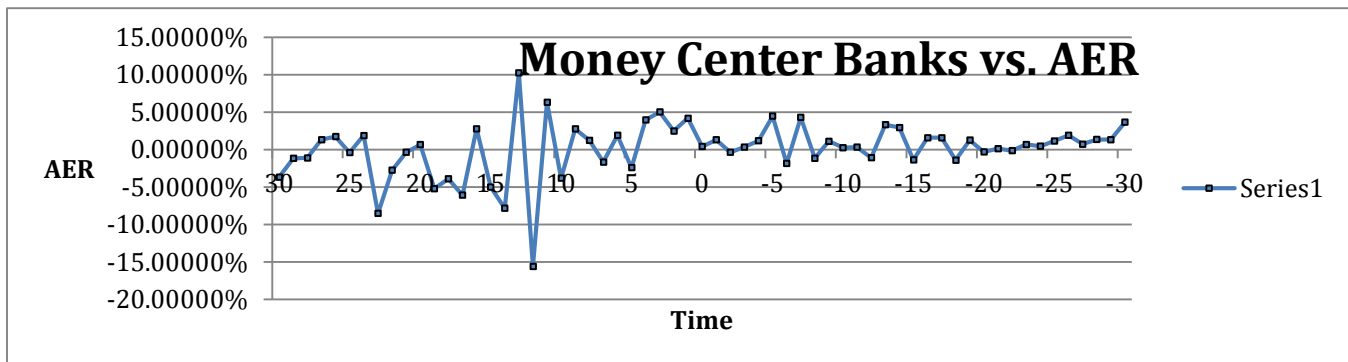
that the market was in fact not efficient due to rapid increase days before the information went public.

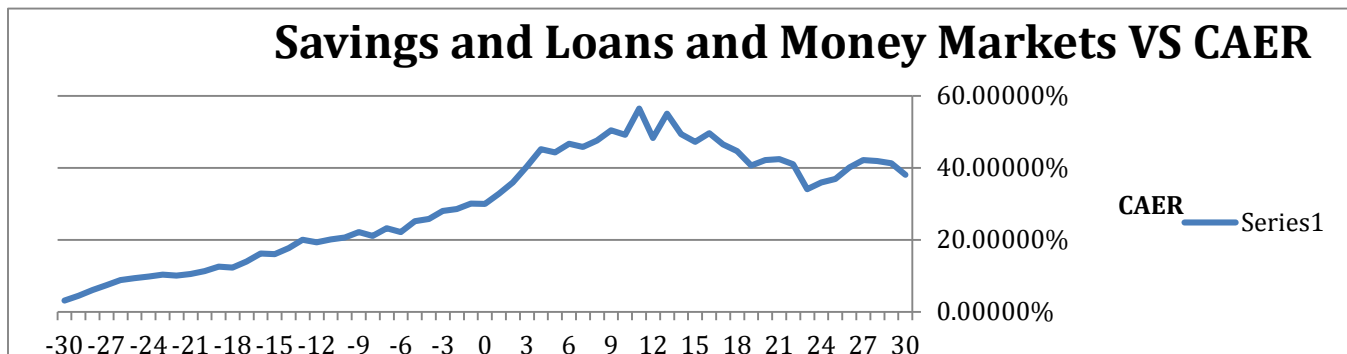
With a combined look of both the money markets and savings and loan banks, the evidence supported the null hypothesis $H1_0$, which was the stock price showed no sign of change with the public announcement. Also the study analyzed whether or not the market efficiency varies by type of bank or savings and loan versus money center banks. With graph one and two showing the results, it was clear to see that a few days were unresponsive over the period. Graph one showed this on the days -6, 16, and 17. Graph 2 also showed this on the days -11 and 21. The reaction of risk adjusted return of the stock price of the sample of money center banks to the Washington Mutual bank failure announcement is not significantly different from the reaction of risk adjusted return of the stock price of the sample of savings and loan banks around the announcement date as defined by the event period.

Graph 1:



Graph 2:



Graph 3:

CONCLUSION

This event study tested the effect of the Washington Mutual bank failure announcement on the stock prices' rate of return for a randomly selected sample of 16 banks; 8 savings and loan banks and 8 money center banks. These banks are all traded on either the NYSE or the NASDAQ. The results showed that the Washington Mutual bank failure showed a negative trend on the firm's stock price. However, the two combined samples of banks is not significantly affected by this type of information on the announcement date when made public. The overall samples of the firms showed that no investor should be able to earn an above normal return. The findings supported the efficient market theory at the semi-strong form level as documented by FAMA (1969) and the Virginia Poly Tech study. Similar to many other event study findings in the finance literature (stock options, repurchase, dividend announcements etc.), apparently trading activity on the basis of this information surfaced prior to it being made public.

REFERENCES

- Fama, Eugene F. (1965). "The Behavior of Stock –Market Prices." *The Journal of Business*,
- Fama, Eugene F. (1969). "The Adjustment of Stock Prices to New Information." *International Economic Review*, Volume 10, Number 1 (February), 1-21.
- "The Lost Bank: The Story Of Washington Mutual: The Biggest Bank Failure In American History." *Library Journal* 137.20 (2012): 28. *Academic Search Complete*. Web. 4 Dec. 2014.
- Mallikarjunappa, T., and Janet Jyothi Dsouza. "A Study Of Semi-Strong Form Of Market Efficiency Of Indian Stock Market." *Amity Global Business Review* 8.(2013): 60-68. *Business Source Complete*. Web. 4 Dec. 2014.
- Malkiel, Burton G. (1989) "Is the stock market efficient?" *Science*, Volume 243 Number 4896 (March), 1313-1319.
- Meyer, Paul A. and Pifer, Howard W. (1970). "Prediction of Bank Failures." *The Journal of Finance*, Volume 25, Number 4 (September), 853-868.
- KEOWN, ARTHUR J., and JOHN M. PINKERTON. "Merger Announcements And Insider Trading Activity: An Empirical Investigation." *Journal Of Finance* 36.4 (1981): 855-869. *Business Source Complete*. Web. 4 Dec. 2014.
- Palmeri, Christopher. "Jpmorgan Chase To Buy Washington Mutual." *Businessweek Online* (2008): 19. *Business Source Complete*. Web. 4 Dec. 2014.
- Pettway, Richard H. "The Effects Of Large Bank Failures Upon Investors' Risk Cognizance In The Commercial Banking Industry." *Journal Of Financial & Quantitative Analysis* 11.3 (1976): 465-477. *Business Source Complete*. Web. 4 Dec. 2014.
- Ross, S. (2008). *Corporate Finance* (Stephen A. Ross, Randolph W. Westerfield, Jeffrey Jaffe -10th ed.). United States: McGraw-Hill Companies.

**AN INTERNATIONAL
INDIVIDUAL INCOME TAX COMPARISON:
THE UNITED STATES, AUSTRALIA,
AND UNITED KINGDOM**

**Darwin L. King, St. Bonaventure University
Carl J. Case, St. Bonaventure University**

ABSTRACT

Each paper must start off with an abstract (with the exception of case studies). The abstract should be approximately 500 words and summarize the topic and findings of the paper. It should also be italicized and be formatted in the same manner of the rest of the document (see instructions below).

When you complete your manuscript, we will ask you to convert it to PDF, and to submit the manuscript in that form. We will be using Acrobat software to compile the journal and proceedings issues and we will be adding headers, footers and page numbers. Since you will be submitting in PDF, that gives you a great deal of control over the appearance of your manuscript. Please work with us to make the document look great! Follow these directions carefully, and the result will be a highly professional appearance.

If you are unable to format the manuscript, please email it to editor@whitneypress.com. We have an Editor under contract who will provide you with an estimate for formatting the manuscript for you. Unless the paper is very complex, the fee is generally \$10 per page.

STUDY OF THE FORECASTING PERFORMANCE OF CHINA STOCKS' PRICES USING BUSINESS INTELLIGENCE (BI): COMPARISON BETWEEN NORMALIZED AND DENORMALIZED DATA

Ojoung Kwon, California State University at Fresno
Zijian Wu, California State University at Fresno
Long Zhang, California State University at Fresno

ABSTRACT

It is widely acknowledged that the impacts of various kinds of information on stock prices are extremely difficult, if not impossible, to measure in terms of duration and significance. During 2002 and 2012, the high fluctuations in China's stock markets made price prediction challenging to perform. Historical events that occurred both domestically and internationally, such as the dot-com bubble, the outbreak of SARS, the party leadership transitions, the global financial crisis and resulting economic recession, the Wenchuan earthquake, and the Beijing Olympic Games further served to prove this point. The objectives of this study are to therefore explore critical indicators in stock price forecasting in order to increase accuracy for professionals in the market. This will be done by comparing the forecasting performances of the Normalized Data (ND) versus the Denormalized Data (DD) and by comparing the Estimated Price Changes (EPC) generated by our NN models with the Actual Price Changes (APC) to measure how accurate our Neural Network (NN) models are. The results demonstrate that using ND and DD produce identical results, which means we do not need to spend time on repeating the data denormalization process in future researches. Additionally, the results show that there is no difference between EPC and APC, meaning the NN models established in the study excel in forecasting China's stock market changes.

Keywords: *Business Intelligence, Financial Forecasting, Investment Strategies, Behavioral Finance, Momentum and Reversal, Overreaction and Underreaction, Technical Analysis, Data Mining, Data Normalization, Denormalization, Forecasting Techniques, Neural Networks, and Artificial Intelligence*

RETURN ON COMMON STOCK

Malek Lashgari, University of Hartford

ABSTRACT

This research casts some light on the degree of predictability of changes in common stock prices. It further provides information regarding as to how or why common stock prices may change over time. The findings may help investors in planned savings and investments by properly formulating expectations regarding the likely future outcome. It appears that changes in the dividends yield, the real growth in earnings, factors causing periodic adjustments to earnings per share, as well as changes in valuation multiples such as the price earnings ratio, price to sales ratio and market to book value ratio have economically and statistically significant impacts on the resulting return on common stock.

Security analysis pays attention to the firm's characteristics, its performance in the respective industry and its reaction to changes in the economy. Such analyses are purported in finding the best value or the right time to invest. The best value denotes a selection that should lead to high return and the right time is an indication of the presence of momentum in direction of price movements. When the selectivity and timing approaches work, investment payoffs will be high. It is important to know as to how and why investors reach the required or desired return on investment and how and why the required return varies over time, thereby causing a rise or fall in stock prices.

The ability to explain and formulate expectations regarding the likely return on common stock is an important issue and has crucial impacts on investors. This is because savings behavior of individuals and the management of asset-liability of financial institutions are affected by expected return. Some examples of the role of return on investment are as follows: a) endowment funds establish spending rate policy rules such that a pre-determined percent of the endowment fund can be spent on an annual basis. Obviously the resulting return on investment must be greater than the spending policy rule for preservation of the endowment fund; b) retirement plans make their funding based on assumptions regarding projected return known as the actuarially assumed return. Earning a return below the actuarially assumed return will result in under-funded pensions causing hardships for employees, employers, and government authorities; c) insurance companies incorporate return on their invested capital in determination of premiums or costs of the various insurance products.

In the financial theory and practice of the pre-1960s popular indicators of future performance of common stock were the dividends yield—the income received from investment—and the earnings yield—the profit earned from investment—as well as the real growth in the two. Changes in the dividends yield and earnings yield lead to fluctuations in stock prices over time establishing a distribution of returns which has generally been assumed to be of a normal or bell shaped form.

Given an independent and identical normal distribution of returns over time, an opposing school of thought evolved in the mid 1950s with the belief in random character of stock prices in the short run and thereby it stated that changes in prices would not be predictable in the short run. Return on common stock in the long run, however, was expected to be associated with the

market as a single determinant of performance. The capital asset pricing model in the context of the efficient market hypothesis states that current stock prices instantaneously adjust to news in the market and reflect their full equilibrium value. Furthermore, the required return on stock is a linear function of its co-movements with the basket of securities forming the market.

Empirical research in line with the capital asset pricing model was later expanded to include multiple factors such as the industry, the economy, inflation and interest rates. In this manner, several risk factors were identified and their respective expected rewards were determined. Anomalies or cases against the random character of stock prices were however emerged in the 1980s and in support of the traditional security analysis. That is, stock prices appear not to behave as randomly as they were expected and that pertinent characteristics of investments provide adequate signal for the likely future return on investment.

Evidence against the efficient market hypothesis in the early 1980s brought about new theories such as the mean reversion with time-varying risk premium. The reasons for predictability of long run return on common stock appear to be as follows: a) time-varying real return; b) time varying risk premium or expected reward; and c) changes in real growth in earnings.

Campbell and Shiller (1988) had provided strong evidence regarding time varying risk premium noting that investors appear to look for various required returns over time. They showed that about 27 percent of real, inflation adjusted stock return variance over a ten-year time horizon is explained by the dividends yield or the percentage of current income provided by the firm. In addition, the growth in dividends income was an important factor in changes in stock prices. They further noted that the 30-year moving average of the earnings yield explained about 57 percent of the variance in real stock return.

In line with Campbell and Shiller's findings, John Cochrane (2011) showed that expected return on the part of investors has varied by a large amount over time and he further explored the reasons for it. A rational, economic explanation for changes in stock prices is further explored by Cornell (2010) who finds that factors such as the real growth in U.S. national income and growth in population appear to affect the real growth in corporate earnings and thereby stock returns.

A better understanding of behavioral patterns during the 1990s further provided mechanisms for explanation of expected return as investors appear to possess psychological biases. For example, investors are found to overreact to good news and causing a rise in stock prices far above their equilibrium values and in the latter part of 2000s researches have further noted the role of feelings and emotional intelligence in explaining the variance in return.

It appears that returns on financial assets are predictable as decision to invest is influenced by the theoretical and empirical knowledge in finance, behavioral patterns of investors and emotional intelligence factors. In addition, the dividends yield, and growth in earnings are important variables in the minds of investors who formulate their expectations regarding the likely course of the stock market.

Based on the information extracted from historical data and various empirical findings during the past several decades, if one tries to formulate expectations regarding the likely return on investment over a medium term time horizon of five to seven years at this time it will perhaps be as follows: an average dividends yield of 2 percent; of about 2.2 percent additional income as a result of stock buy-back plans of the company; an average real growth in earnings of 1.5 percent; and perhaps about 0.5 percent in valuation effects due to changes in the price earnings multiple, price to book value or the price to sales ratios. That is, the annual real return, on average, is expected to be about 6.2 percent. In the presence of successful monetary policy in the

banking, maintaining an inflation rate of 2 percent, the average nominal return should be about 8.2 percent.

CONCLUSION

This research casts some light on the degree of predictability of changes in common stock prices. It further provides information regarding as to how or why common stock prices may change over time. The findings may help investors in planned savings and investments by properly formulating expectations regarding the likely future outcome. It appears that changes in the dividends yield, the real growth in earnings, factors causing periodic adjustments to earnings per share, as well as changes in valuation multiples such as the price earnings ratio, price to sales ratio and market to book value ratio have economically and statistically significant impacts on the resulting return on common stock.

REFERENCES

- Campbell, John (2006). Household Finance. *The Journal of Finance*, 61(4), 1553-1604.
- Campbell, John and Robert Shiller (1988). Stock Prices, Earnings, and Expected Dividends. *The Journal of Finance*, 43(3), 661-676.
- Cochrane, John (2011). Discount Rate. *The Journal of Finance*, 66 (4), 1047-1108.
- Cornell, Bradford (2010). Economic Growth and Equity Investing. *Financial Analysts Journal*. 66(1), 54-64.

THE GREAT SENDAI EARTHQUAKE'S EFFECT ON AUTOMOBILE COMPANIES' STOCK PRICES

Kelsey McDonald, Longwood University
Frank Bacon, Longwood University

ABSTRACT

This study tests efficient market theory by examining the effect of the Great Sendai Earthquake, in Japan, on automobile companies' stock prices. The automobile industry is heavily invested in Japan, because the island is home to several automobile company headquarters and Japan's factories also serve as a major supplier for the industry. Due to the significant investment interests in the destructive tsunami's path, one would expect negative stock price returns in the automobile industry in some time frame. This event study analyzes 13 automobile firms with interests in Japan and it examines the effect that the natural disasters had on stock price's risk adjusted rate of return before and after March 11, 2011. Appropriate statistical tests for significance show that the tsunami in Japan had a significant impact on the risk adjusted rate of return on selected automobile company stock prices over the event study period. Specifically, results show that automobile company stock price returns started a significant downturn up to 18 days prior to the natural disaster event on March 11, 2011, implying that the market is in fact efficient.

BACKGROUND

On Friday, March 11th at 2:46 p.m., the Earth began to unexpectedly shake beneath the Pacific Ocean's seafloor. The magnitude-9, Tohoku earthquake was not the largest, nor the deadliest earthquake/tsunami combination to strike this century; however, this one-two punch managed to claim 18,000 lives that day, and the damage didn't stop there. The waves destroyed Japan's infrastructure, and it wreaked havoc on several key industrial buildings, such as the Fukushima Daiichi Nuclear Power Plant, which still continues to leak radioactive water into the environment (Oskin, 2013).

Somehow this pair of natural disasters came as some surprise to scientists, both in magnitude and in arrival speed. Citizens of Japan were only given a minute's warning before the earthquake struck, resulting in less than an hour to evacuate before the tsunami came crashing to shore. One particular sector that was highly affected by the events on March 11, 2011 was the automobile industry. Several automobile companies are headquartered in Japan, and numerous other international companies in the industry heavily rely on Japanese factories to produce supplies for their automobile parts. Unfortunately, a number of these factories and buildings were destroyed by the tsunami itself or by the continuous aftermath of leaked radiation and relentless flooding.

RESEARCH PROBLEM

Natural disasters are historically notorious for destroying environments and economies alike. Knowing this to be true, the question is how soon does the stock market

respond to Mother Nature's impending wrath? If investors utilize all available information concerning an approaching natural disaster, then the stock market could potentially move before the Earth does. If this proves to be the case, then the stock market may serve as the next best predictor of potential devastation, only second to the Weather Channel itself. The research problem focuses on analyzing the data to examine whether these assumptions show to be true.

PURPOSE OF STUDY

The purpose of this study is to examine the market's ability to monitor or predict the impact of the earthquake and consequential tsunami in northeastern Japan, hereafter referred to as The Great Sendai Earthquake, by analyzing the risk adjusted rate of return of several automobile company stocks around the event defined as March 11, 2011.

LITERATURE REVIEW

Two key trades in Japan are its automobile and consumer electronics industries; however, after the 2011 tsunami, Japanese automobiles have suffered losses. According to CBSNews, companies like Toyota and Honda, and even several American auto companies who frequently imported supplies from Japan, were struggling to make sales because their supply stock was washed out or shut down in the disaster. This lag in the Japanese auto industry parted the seas for cheaper, usually overlooked American companies, such as General Motors, Ford and Chrysler, to step in and steal the competition (Edgerton, 2012).

Eugene F. Fama, a Finance professor at the University of Chicago, is also the father of the investment theory known as the Efficient Market Hypothesis. This theory claims that "beating the market" is impossible because of how efficiently existing share prices incorporate and reflect all relevant information, eliminating the possibility of buying an undervalued stock or selling particular stocks at an inflated price (Fama, 1970). Throughout the paper, this theory is explored and tested. If Fama's theory holds true, then on the day of The Great Sendai Earthquake, it would be assumed that Japanese stock prices would plummet as information about the incoming disaster began to flood into American investors' ears.

METHODOLOGY

This study includes thirteen automobile companies that are either headquartered in Japan or they heavily imported parts from the island. All thirteen of these companies, with the exception of Ford, would likely be directly affected by a natural disaster in Japan and would all be expected to suffer significant losses from an earthquake of this magnitude. This study tests the efficient market theory by examining how quickly these specific firms' stock prices react to the Great Sendai Earthquake event defined as March 11, 2011. Analysis of this event included 2,736 observations of the thirteen automobile firms' stock prices and the corresponding Standard & Poor's 500 Index (S&P500) up to 180 days before the event date, denoted as Day 0, and 30 days after.

To test semi-strong efficiency with respect to the earthquake event and to examine the effect of the natural disaster on stock return around the announcement date, this study proposes the following null and alternate hypotheses:

- H1₀: The risk adjusted return of the stock price of the sample of automobile firms is not significantly affected by this type of information on the event date.*
- H1₁: The risk adjusted return of the stock price of the sample of automobile firms is significantly negatively affected by this type of information on the event date.*
- H2₀: The risk adjusted return of the stock price of the sample of automobile firms is not significantly affected by this type of information around the event date as defined by the event period.*
- H2₁: The risk adjusted return of the stock price of the sample of automobile firms is significantly negatively affected around the event date as defined by the event period.*

This study uses the standard risk adjusted event study method (market model) from the literature to test the stock market's response to the March 11th Great Sendai Earthquake event date. The financial data, including daily stock prices and historical S&P 500 indices during the event study period, were obtained from Yahoo Finance, online. The event study duration extended from -180 to +30 days, with day -30 to day +30 defined as the event period and day 0 denoted as the earthquake event date, or March 11, 2011 when the natural disaster struck. After data was collected and organized, holding period returns of the companies and the corresponding S&P 500 index for each day in the study period were calculated using the two formulas below:

$$\text{Daily stock return} = \frac{\text{current day adjusted close price} - \text{previous day adjusted close price}}{\text{previous day adjusted close price}}$$

$$\text{Daily index return} = \frac{\text{S\&P current adjusted close} - \text{S\&P previous adjusted close}}{\text{S\&P previous adjusted close}}$$

Using the Data Analysis Tool on Excel, a regression analysis was performed using the actual daily returns of each company as the dependent variable, and using the corresponding S&P 500 index daily returns as the independent variable. The time frame included the pre-event period, denoted as day -180 to day -31 (also known as the period prior to the event period). This data was used to obtain the two coefficients, alpha (the intercept) and beta (the slope). Table 1 shows alphas and betas for each firm.

Firm	Alpha	Beta
FUJHY	0.002132417	0.512136813
YAMHF	0.001889853	0.15191376
TM	0.000210995	0.688432402
HOG	0.001170239	1.986827373
DDAIF	0.000412725	1.776422501
HMC	0.001360525	0.867551733
BAMXF	0.001150949	1.540200569
BYDDF	-0.004657175	1.49614842
F	0.001933087	1.41195158
PUGOY	0.001599965	1.390420028
PIAGF	0.001488399	0.371195966
VLKAY	0.002486377	1.122389338
TTTM	0.036357966	-3.585518303

In order to conduct a full analysis of the date, a few more calculations were required. Two key figures =, examined more in-depth below, were the Average Excess Returns (AER) and the Cumulative Average Excess Returns (CAER). Excess return (ER) can be defined as the difference between a stock's Actual Return and its Expected Return. The AER was calculated by first adding all the firms' excess returns from day -30 to day +30, then dividing this summation by thirteen to find the average. The CAER is relatively self-explanatory; it is the cumulative calculation of all Excess Returns from day -30 to day +30. Both the AER and the CAER are plotted below for the event period duration.

QUANTITATIVE TESTS AND RESULTS

As stated earlier, according to Fama's theory, one would expect the average excess daily returns during the 60 day event period to be significantly different from 0; and therefore, significantly different from cumulative average excess returns over the same time period. If a significant risk adjusted difference is observed, then this type of information about the tsunami did significantly impact automobile stock prices, just as hypothesized. How does one test for this sort of significance? A paired t-Test two sample for means was utilized and it revealed a statistically distinct difference at the 1% level of significance (with an astonishingly low P-value of 3.13×10^{-20}). This test for significance supports both alternative hypotheses, H_{11} and H_{21} , that the risk adjusted rate of return of the stock price of the sample of automobile firms is *significantly* negatively affected by this type of information disclosed around and on the event date.

In the graphical analysis displayed in Exhibit 1, the peaks and dips of the lines make it easy to see that the average excess returns over the event period were significantly different from 0 (even at a 1% confidence interval).

Exhibit 1. Average Excess Returns Over Event Period (-30 to +30)

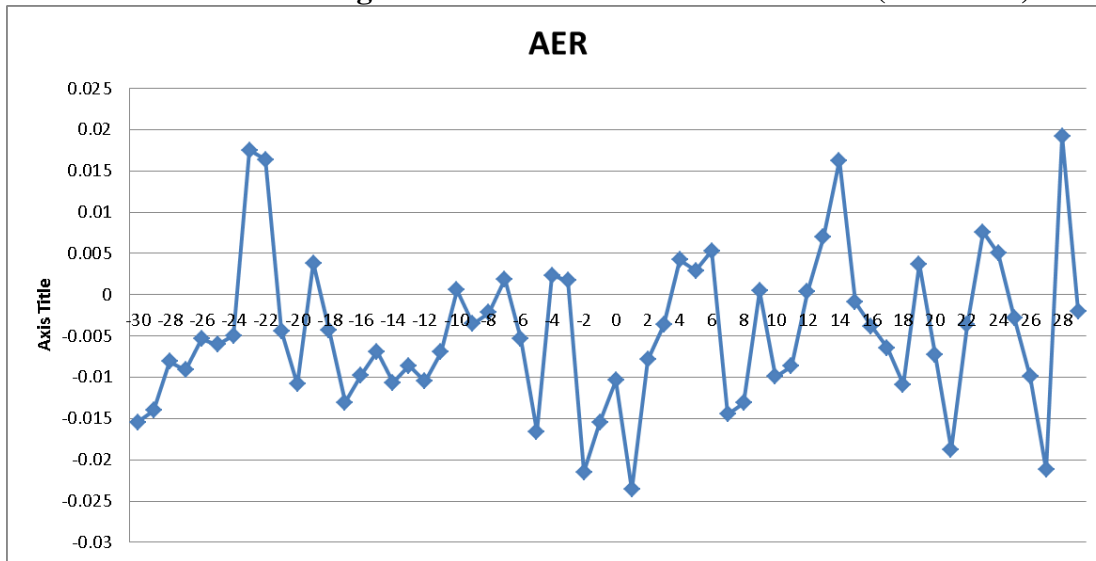
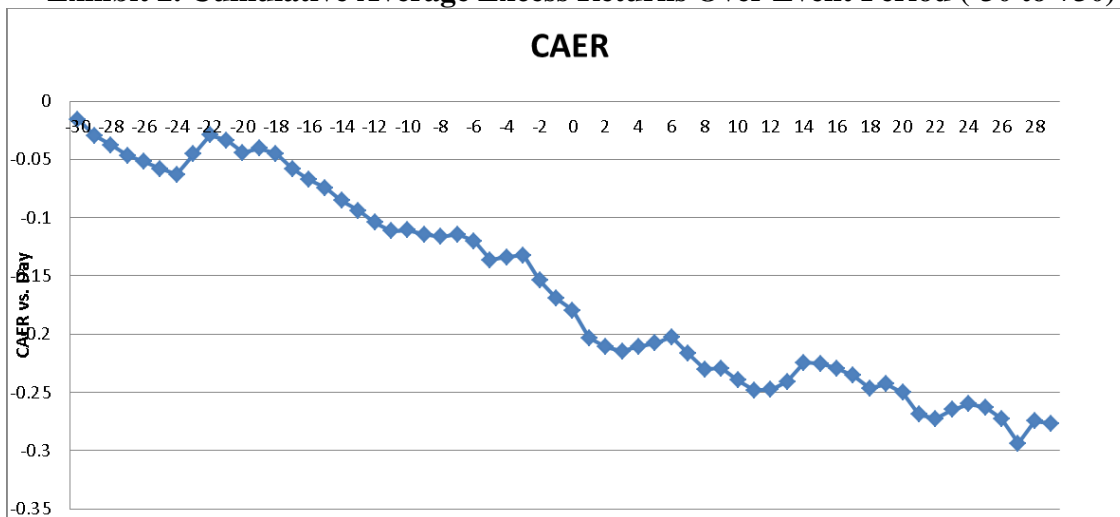


Exhibit 2 offers another clear visual depiction that cumulative average excess return was negatively correlated with time, confirming the significant negative response by the sample of thirteen automobile companies' risk adjusted rate of return on stock prices prior to the natural disaster. This graph is evidence that the stock market accurately anticipated the disaster's negative effects on the automobile industry about eighteen days prior to the actual event on March 11, 2011.

Exhibit 2. Cumulative Average Excess Returns Over Event Period (-30 to +30)



CONCLUSION

This study examined the effect of the Great Sendai Earthquake on stock prices' risk adjusted rate of return of thirteen sample automobile companies with a significant physical investment or business connection to Japan. After running the regression and conducting a T-test, it is now known that the tsunami in Japan had a negative and

significant impact on the automobile companies selected, just as the hypothesis suggested. Results show that automobile stock prices began to plummet a little over two weeks before the actual earthquake struck. This shows that investors do keep an eye on relevant information and that the stock market is efficient, just as Fama said. Also, an important concept to note is that even though many Japanese and American automobile companies saw losses due to this event, this does not necessarily mean that the entire automobile industry suffered. Some companies, like General Motors and Ford, saw this disaster as an opportunity to step up in the industry. As a result, some brand loyalty has shifted from the old dynasties of Toyota and Honda. This is just one example illustrating the economic and environmental horrors that natural disasters can generate.

REFERENCES

- Edgerton, J. (2012, March 9). How the Japanese tsunami changed the auto industry. Retrieved March 29, 2015, from <http://www.cbsnews.com/news/how-the-japanese-tsunami-changed-the-auto-industry/>
- Fama, E. F. (1970). "Efficient Capital Markets: A Review of Theory and Empirical Work." *Journal of Finance*, Volume 25 (May), 383-417.
- Fama, E. F., L. Fisher, M. Jensen, and R. Roll, "The Adjustment of Stock Prices to New Information," *International Economic Review*, February 1969, 1-21.
- Oskin, B. (2013, August 22). Japan Earthquake & Tsunami of 2011: Facts and Information. Retrieved March 29, 2015, from <http://www.livescience.com/39110-japan-2011-earthquake-tsunami-facts.html>
- Yahoo Finance - Business Finance, Stock Market, Quotes, News. (n.d.). Retrieved March 29, 2015, from <http://finance.yahoo.com/>

**THE IMPACT OF THE FIRM'S
FINANCIAL CHARACTERISTICS ON THE FIRM'S
OUTSOURCING ANNOUNCEMENT
MARKET RETURN IN THE 21ST CENTURY:
THE CASE OF CONTRACT GRANTING FIRMS'**

Fouad K. Moussa, Gallaudet University

ABSTRACT

This study investigates the effect of outsourcing contract announcement on the value of the contract granting firm. Results are based on a sample of 33 publicly traded firms that outsourced parts of their operations between 2001 and 2011. Results Obtained are consistent with the previous research. Evidences have shown that previous research did not give attention to the firm's financial characteristics, and determine whether other financial characteristics influenced the market to react differently to outsourcing announcements. This research further extends the previous research by investigating the impact of outsourcing contract granting firms' financial characteristics on the magnitude of the market returns.

HOW A ROTH IRA CAN PROVIDE A SILVER LINING WHEN FINANCIAL MARKETS TURN SOUTH

Steven Ferraro, Pepperdine University
Richard Powell, Pepperdine University

ABSTRACT

Financial markets in the United States have demonstrated some intense volatility over the years. Upswings for stock indexes have included the Roaring 20s as well as the 1990s. Downswings have included the Depression and the Great Recession starting in 2007. Despite the pain of downswings, Roth accounts can provide a silver lining when circumstances for investors seem the bleakest.

This paper demonstrates how investors can effectively move their wealth into Roth accounts when markets approach a perceived trough. The investor's strategy capitalizes on the tax rules underlying the Roth vehicle. When markets downturn, investors can convert a traditional IRA into a Roth and pay limited income tax on a diminished account. When the market turns up, the gains are forever excluded from Federal income taxation. Investment models can demonstrate the power of this Roth strategy over a long investment horizon when compared to a buy-and-hold strategy. Other models can show how an investor using this Roth strategy can especially outperform the nervous investor who sells stocks and moves into bonds during bleak downturns.

Key words: Roth, Taxation

HOW A ROTH IRA CAN PROVIDE A SILVER LINING WHEN FINANCIAL MARKETS TURN SOUTH

**Steven Ferraro, Pepperdine University
Richard Powell, Pepperdine University**

ABSTRACT

Financial markets in the United States have demonstrated some intense volatility over the years. Upswings for stock indexes have included the Roaring 20s as well as the 1990s. Downswings have included the Depression and the Great Recession starting in 2007. Despite the pain of downswings, Roth accounts can provide a silver lining when circumstances for investors seem the bleakest.

This paper demonstrates how investors can effectively move their wealth into Roth accounts when markets approach a perceived trough. The investor's strategy capitalizes on the tax rules underlying the Roth vehicle. When markets downturn, investors can convert a traditional IRA into a Roth and pay limited income tax on a diminished account. When the market turns up, the gains are forever excluded from Federal income taxation. Investment models can demonstrate the power of this Roth strategy over a long investment horizon when compared to a buy-and-hold strategy. Other models can show how an investor using this Roth strategy can especially outperform the nervous investor who sells stocks and moves into bonds during bleak downturns.

Key words: Roth, Taxation

LONG MEMORY IN STOCK RETURNS: A STUDY OF REAL ESTATE EQUITIES IN AN EMERGING MARKET

Sanjay Rajagopal, Western Carolina University

ABSTRACT

India has witnessed a fairly significant economic and financial market deregulation beginning in the early 1990s, and the country has experienced rapid economic growth since that time. As the country has evolved into an important player in the global economy, and has become an important destination for international capital flows, one of the questions that researchers have found it of interest to study is that of informational efficiency in this emerging market (e.g. Poshakwale, (2002); Sarkar & Mukhopadhyay (2005); Chander et al (2008); Dicle et al (2010); and Mishra et al (2011)). While not all the studies come to the same conclusion, the balance of the evidence they provide suggests that there is some degree of predictability in market returns.

We seek to contribute to the literature on market efficiency within the context of the Indian economy by focusing specifically on the rapidly growing real estate sector. In a recent study, Rajagopal & Hays (2012) analyzed the BSE Realty Index over the 2006—2008 time period and documented a significant persistence in returns, suggesting that the equities in this sector may not be priced efficiently. In contrast to that study, which considers a single aggregate measure provided by the index, we use fractal analysis techniques to study the returns behavior of each individual real estate company listed on the Bombay Stock Exchange.

We employ self-affine fractal analysis techniques (including rescaled-range analysis, roughness-length analysis, power-spectral density analysis, and wavelet analysis) to study all the firms in the realty sector (an initial sample of 128 firms) for which adequate price information is available. There are several reasons for studying individual companies. First, it is possible for individual securities to be priced efficiently while an asset constituting a bundle of those securities is not, and vice versa. As MacDonald & Power (1993) caution, aggregate indices could mask firm-specific factors, a consideration that would justify the use of more disaggregated data. Second, owing to factors such as differences in the information environment surrounding firms, some equities may be priced efficiently while others are not. This information would be of interest, for instance, to technical traders who may wish to exploit inefficient pricing to earn excess returns. Third, our approach provides a larger sample of returns; in the case of many individual realty firms the available returns series is significantly longer than that available for the BSE Realty Index, and is often in excess of 10 years.

Preliminary results indicate that a number of the returns series in the Indian real estate sector might be characterized by long memory, a finding consistent with the results

in Rajagopal & Hays (2012), and one that would point to the potential effectiveness of technical trading rules in generating excess returns in real estate stock investment.

REFERENCES

- Chander, R., K. Mehta, & R. Sharma (2008) Empirical Evidence on Weak Form Stock Market Efficiency: The Indian Experience, *Decision*, 35, 75-109.
- Dicle, M. F., A. Beyhan, & L. J. Yao (2010) Market Efficiency and International Diversification: Evidence from India, *International Review of Economics & Finance*, 19, 313-339.
- MacDonald, R. & D.M. Power (1993) Persistence in UK Share Returns: Some Evidence from Disaggregated Data, *Applied Financial Economics*, 3, 27-38.
- Mishra, R.K., S. Sehgal, & N.R. Bhanumurthy (2011) A Search for Long Range Dependence and Chaotic Structure in Indian Stock Market, *Review of Financial Economics*, 20, 96-104.
- Poshakwale, S. (2002) The Random Walk Hypothesis in the Emerging Indian Stock Market, *Journal of Business Finance & Accounting*, 29, 9/10, 1275-1299.
- Rajagopal, S. & Patrick Hays (2012) Returns Persistence in the Indian Real Estate Market, *International Real Estate Review*, 15, 3, 283-305.
- Sarkar, N. & D. Mukhopadhyay (2005) Testing Predictability and Nonlinear Dependence in the Indian Stock Market, *Emerging Markets Finance and Trade*, 41, 6, 7-44.

GOING CONCERN---WHERE IS IT GOING?

Sharon S, Seay, University of West Georgia

ABSTRACT

A major principle underlying the preparation of a company's financial statements is the economic entity assumption, more commonly known as the going concern assumption. This principle assumes that the entity will continue to exist and engage in its normal operations for a reasonable period of time. This look forward period is defined as 12 months from the date of the audited financial statements. If the business is in financial distress and potentially facing liquidation, the going concern assumption is no longer valid, and the company should prepare its financial statements using the liquidation basis of accounting, rather than the historical cost attribute. On August 27, 2014, FASB issued Accounting Standards Update (ASU) No. 2014-15, Presentation of Financial Statements—Going Concern (Subtopic 205-40): Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern. This study examines the financial profile of companies issued a going concern opinion from 2000-2014. An analysis of the rationales used by auditors in making these determinations is explored along with the historical trends discernable from the data. Based on this analysis, recommendations to improve the understanding and application of the going concern principle are provided.

**CHECK MY WORK!
INSTANTANEOUS FEEDBACK
AND STUDENT PERFORMANCE
IN AN INTRODUCTORY
FINANCIAL ACCOUNTING COURSE**

**Premalata Sundaram, High Point University
Ross Roberts, High Point University**

ABSTRACT

This study uses a controlled experiment to examine the impact on student performance of using an online homework management platform that gives students instantaneous feedback on their homework problems and provides links to the selected reading from an eBook. We conducted the experiment using two introductory financial accounting courses, with the treatment classroom using the online interactive homework (OIH) with targeted links to the eBook, and the control classroom using traditional paper homework with delayed feedback. After controlling for prior GPA, gender and academic standing, the results do not show any difference in student performance. But when we change the metric for assessment to their ability to do an integrative accounting cycle problem that involved preparing an income statement, statement of retained earnings and a balance sheet, the students with OIH correctly balanced the BS 44% of the time, compared to only 27% for the control group! We also found that OIH students' level of engagement in the course, as measured by the time spent outside of class on homework, increased substantially. The students also revealed a strong preference for the instant feedback feature "Check my work!" over all other features of the online system like directed links to the eBook, videos and study guides. Overall, the study highlights the important role played by the assessment metric in studies that seek to look for differential impact of technology in general, and online homework systems in particular. The results of the study will hopefully guide accounting educators on the efficacy of an online homework system as a pedagogical tool in an introductory financial accounting course. The results also highlight the importance of designing the right assessment tool when comparing performance effects of online homework management systems across business disciplines.

Keywords: Online Homework, Internet, Student performance, Assessment tool.

PROJECT ASSIGNMENT FOR A FINANCE COURSE¹

Atul K. Saxena, Georgia Gwinnett College

ABSTRACT

One of the important qualities that accrediting bodies look in business schools is learning outcomes that relate theory with practice. This paper describes a capital budgeting project that is a real world simulation of a new business startup. The proposed project is suitable for graduate (MBA) and upper-level undergraduate courses. The project has been assigned in an MBA program with great success in the core corporate finance. But it can also be amended and utilized in the capstone strategic management course. For BBA-finance students, this project can be assigned in the intermediate finance course. It is appealing to non-traditional business students, who often desire to establish their own firms.

INTRODUCTION

Social scientists and academicians have stressed offering students multiple techniques of pedagogy for better learning outcomes. Research has shown that generation-X actually prefers experiential learning (Bale and Dudney, 2000). Frequently professors spend a lot of time and effort searching for projects to supplement their lectures. The accrediting bodies encourage schools to include projects that bridge theory with practice. There is also an increased demand from employers and graduates for hands-on experiences by simulating the real world before entering it. This paper describes a project that can be used in upper level undergraduate finance (and strategic management) courses, but is particularly geared towards graduate students. The project requires students to apply financial analysis to the startup of a small company. This project has already been successfully used in MBA and BBA courses at a business school for with good results. Since most students enrolled in the MBA program are non-traditional, they frequently dream of establishing their own company. This project provides them the opportunity to apply theoretical concepts in practice. While it involves financial analysis, the project can be modified for any other business discipline, such as management or marketing. Over the course of an MBA program, it can also be used as a continuing project, adding facets from each discipline.

LITERATURE REVIEW²

In a classic study Bruner *et al* (1999) find the following items as being important in the learning experience, and remarkably, the project explained here meets most, if not all, of them.

1. Select cases that employ, exercise or explore a tool or concept
2. Highlight the dilemmas of the decision maker
3. Set the numbers and critique them
4. Embrace uncertainty
5. Demand the action recommendations arising from analysis
6. Look for unintended consequences
7. Explore opportunities for further work

Bale and Dudney (2000) find that for Generation X students (born between 1961-1981) “hybrid” teaching models incorporating both andragogy (self-directed, self-motivated) and

pedagogy methods are most effective. They prefer experiential learning using as many of the five senses as possible (Caudron 1997). The startup project explained here is an example of hybrid teaching model that incorporates both andragogy and pedagogy. Deeter-Schmelz, Kennedy, and Ramsey (2002) conclude that team projects play a positive role of cohesion as an input variable on teamwork. Ashraf (2004) finds that in business schools, one of the most common pedagogical tools is the use of group projects. "Passive" instruction (i.e., lecture) is considered to be an inferior mode of teaching. Chapman and Sorge (1999) find that students consistently gave simulation the highest ratings over traditional methods. Olson *et al* (2006) also encourage the use of simulation. This project conforms to both, Chapman and Sorge and Olson *et al*. In addition to studies pertaining to general education and business courses, there is some literature that is specific to finance courses. Gurnani (1984) compares capital budgeting concepts as advocated in theory with the methods employed by industry. Capital budgeting is an interdisciplinary function, involving diverse areas such as engineering, finance, and management. This project is the perfect bridge between these areas. Benton Gup (1994) surveys academics and practitioners and ranks those finance concepts considered most important for students. The academics rank time value of money capital budgeting, CAPM, capital structure, and valuation as the top five financial concepts. All five are included to some degree in the project discussed in this paper. The practitioners ranking excluded CAPM and valuation but included accounting and cost of capital. This project requires a critical understanding of the cost of capital concept.

In a most comprehensive study, Harvey and Graham (2001) find that NPV is dramatically more important now as a project evaluation method than it was 10 or 20 years ago. However, they find it surprising that more than half of the respondents would use their firm's overall discount rate to evaluate an investment in an overseas market, even though the investment likely has different risk attributes than the overall firm. This indicates that practitioners might not apply the CAPM or NPV rule correctly, perhaps indicating a need for a better bridge between theory and practice. A class assignment such as proposed in this paper would be useful to reinforce this bridge. Finally, Weaver and Michelson (2004) suggest a project that could accompany a corporate finance course to enhance the learning of theoretical concepts using a simple Excel model that provides measures of the standard deviation of forecasted internal rate of return (IRR) given traditional data inputs such as annual cash flows, terminal values and equity. While their Excel model is a good class project, the startup project explained in this paper is more comprehensive in nature covering a wider variety of financial concepts.

THE PROJECT

A: Selection of the Business Type

It is helpful to select a business that does not depend on results of R&D activities, exploration, etc. These unknown factors add complexity to the project and undermine the task of estimating cash flows by making the whole project seem unreal. Business types such as retail, most manufacturing, consulting, construction, or service make the project more manageable for the student. Franchises can be problematic if estimates of revenues, costs, franchise fees, and other data are not provided by the franchiser. Buying an existing business moves the student outside the procedures in the MBA's core corporate finance course and makes the project difficult for them. Indeed, this variation of the project can be used in M&A course. Not-for-profit businesses are also appropriate for this project. Businesses that require large capital outlays at

startup with lives longer than the project horizon (say 5 years) will generally not be profitable within the analysis period. How to overcome this problem is discussed in Section C below.

B: Statement of Assumptions

A statement of assumptions is an important input to the project. This helps build the initial cash flow estimates and provides a base for risk analysis. It is the responsibility of the project manager to keep management informed of any changing circumstances and to re-estimate the probable profit of the project. Finally, assumptions are also required for the instructor to evaluate the student's ability to apply the concepts. Assumptions generally include such things as the economic conditions, growth in revenues/costs, hiring of employees, increases in fixed assets, cost of capital, termination revenues and expenses, initial inventories and fixed assets, etc. Table 1 contains an example of the set of assumptions to be used for this case.

TABLE 1	
An Example of a Set of Assumptions	
Business Type: Retail Outlet	
Expected Case Assumptions*:	
1. Sales Growth	5% of sales
2. COGS	45% of sales
3. Utilities	3% of sales
4. Advertising	10% of sales
5. Maintenance	5% of sales
*Note that this is only a partial set of assumptions for illustration purpose.	

C: Cost of Capital and Cash Flow Estimates

A basic assumption is that the startup is a sole proprietorship and the cost of capital is the student's own required rate of return plus the cost of borrowing money. Students are asked to call a bank to determine what lending rate would be required for a business of the type chosen. The weighted average of these two rates will be the discount rate for capital budgeting purposes. Students also estimate cash flows for five years at which time the business is liquidated. A 5-year life of the project is not so long as to make long-term estimates too unrealistic. The process of estimating cash flows follow Titman, Martin, and Keown (2014). Table 2 provides a complete output of the capital budgeting analysis. The format of the cash flows follows that of a generic income statement except that interest expense is not included. All after-tax financing expenses are recovered by the level of the interest rate used to discount the cash flows. The final cash flow category is the terminating cash flows, e.g. after-tax salvage value, disposal/restoration expenses, sale of business revenue. Students should have six cash flows: initial outlay and cash flows for years 1-5.

D: Capital Budgeting Techniques and Acceptability Analysis

Once the net cash flows are estimated, the acceptability of the business is evaluated. Students are required to use several decision criteria: payback period, discounted payback period, net present value (NPV), profitability index, internal rate of return (IRR), and modified IRR.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Property Improvements	\$150,000					
Furniture/Fixtures	\$15,000					
Deposits	\$8,150					
Opening Expenses	\$9,000					
Working Capital	\$10,000					
Inventory	\$250,000					
Sales		\$550,000	\$577,500	\$606,375	\$636,694	\$668,528
COGS		\$247,500	\$259,875	\$272,869	\$286,512	\$300,838
Payroll		\$40,000	\$40,000	\$40,000	\$45,000	\$45,000
Rent		\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Utilities		\$13,750	\$14,438	\$15,159	\$15,917	\$16,713
License		\$200	\$200	\$200	\$200	\$200
Advertising		\$55,000	\$57,750	\$60,638	\$63,669	\$66,853
Maintenance		\$27,500	\$28,875	\$30,319	\$31,835	\$33,426
Office Expense		\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Insurance		\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
Depreciation		\$900	\$900	\$900	\$900	\$900
Income before Taxes		\$132,650	\$142,963	\$153,791	\$160,160	\$172,098
Tax @ 34%		\$45,101	\$48,607	\$52,289	\$54,454	\$58,513
Net Income		\$87,549	\$94,355	\$101,502	\$105,706	\$113,585
Add Depreciation		\$900	\$900	\$900	\$900	\$900
Cash Flows	\$442,150	\$88,449	\$95,255	\$102,402	\$106,606	\$114,485
After-tax Salvage Value						\$800
Working Capital						\$10,000
Inventory						\$250,000
Terminating Cash Flow						\$375,285

*Due to space consideration the assumptions used to arrive at the first year's sales figures are not included.

- Payback period (PBP) provides the number of years required for the initial outlay to be recovered from the after-tax cash flows. Since it fails to account for the *time value of money* it is a naive way of evaluating the acceptability of a project. Despite its limitations, the method remains a popular technique (Harvey and Graham, 2001) and is frequently used as a *preliminary* screening measure.
- Discounted payback method corrects the flaw in PBP and discounts each year's cash flow.
- The NPV is the present value of the cash inflows minus the present value of the cash outflows. The proposed investment is acceptable if the NPV is positive.
- The *profitability index* (PI) is the present value of the cash *inflows* divided by the present value of the cash *outflows* and the investment is acceptable if the PI is greater than one.
- Internal rate of return (IRR) is the discount rate that equates the present value of future cash flows to the initial outlay. It has an implied assumption, that the cash flows are reinvested at the IRR as they flow into the firm. Therefore, the IRR rule is regarded as too optimistic and the *modified* IRR is computed. The IRR must be greater than the cost of capital for the project to be profitable.
- The *modified* IRR is a more conservative rate that equates the initial outlay with the future value of cash flows reinvested at the discount rate and must be greater than the latter to accept the project.

E Risk Assessment

Students are also asked to analyze business risk using one of four risk analysis techniques. The methods suggested are sensitivity analysis, scenario analysis, decision tree analysis, and simulation. In all cases, the student can also determine the probability of the NPV falling below zero since this requires the average of several estimates of the NPV and its standard deviation.

- In sensitivity analysis, the assumptions are changed one at a time. These are called driver variables and generally require a high degree of confidence in the estimate or the ability to be well managed for an overall assessment of low risk.
- Scenario analysis involves modifying the expected scenario already presented with the worst case and best case estimates of the assumptions.
- Decision tree analysis provides re-evaluation points as the business progresses. Owners can re-estimate profitability and expand/contract the business, modify facilities, or shut down. The decision tree provides “legs” to determine NPVs for each of the possible paths in risk assessment.
- Using 1,000 to 10,000 trial runs simulation provides estimates of the NPV by randomly selecting a value from each variable’s probability distribution and combining them for the trial NPV calculation. The area under the curve below a NPV of zero provides an assessment of the risk.

SUMMARY

This paper describes a capital budgeting project for the startup of a new business. It is a real-world project that is do-able in a semester. It is preferably assigned as a group project, but can be adapted for individual student assignment. The business type is chosen by the student(s). Students estimate the initial startup cost, the recurring revenues and expenses and any terminating cash flows. The business is then evaluated for profitability and risk using various capital budgeting techniques. Students then decide if they would proceed with that “dream” business. The project can be assigned to BBA or MBA students in their corporate finance course or with slight modifications, in courses such as management, marketing or entrepreneurship. Certain non-business professional programs, such as health care or engineering, where students frequently plan to open their own business, may also include it in their curriculum.

REFERENCES

- Almer, E. D., K. Jones, and C. Moeckel, 1998, “Impact of one-minute papers on learning in an introductory accounting course,” *Issues in Accounting Education*, vol. 13, # 3, 485-497.
- Ashraf, M., 2004, “A Critical Look at the Use of Group Projects as a Pedagogical Tool,” *Journal of Education for Business*, Mar/Apr, vol. 79, # 4, 213-216.
- Bale, J.I. M. and D. Dudney, 2000, “Teaching Generation X: Do Andragogical Learning Principles Apply to Undergraduate Education?” *Financial Practice and Education*, Spring/Summer, vol. 10, # 1, 216.
- Bruner, R., B. Gup, B. H. Nunnally, and L. C. Pettit, 1999, “Teaching with cases to graduate and undergraduate students,” *Financial Practice and Education*, Fall/Winter, vol. 9, # 2, 138.
- Caudron, S., 1997, “Can generation X’ers be trained?” *Training and Development*, Mar, vol. 51, # 3, 20-25.
- Chapman, K. J. and C. L. Sorge, 1999, “Can a simulation help achieve course objectives? An exploratory study investigating differences among instructional tools,” *Journal of Education for Business*, Mar, vol. 74, 225-230.
- Deeter-Schmelz, D.R., K.N. Kennedy and R. P. Ramsey, 2002, “Enriching our understanding of student team effectiveness,” *Journal of Marketing Education*, Aug, vol. 24, # 2, 114-124.
- Gup, B., 1994, “The five most important finance concepts: A summary,” *Financial Practice and Education*, Fall/Winter, vol. 4, # 2, 106-109.
- Gurnani, C., 1984, “Capital Budgeting: Theory and Practice,” *The Engineering Economist*, Fall, vol. 30, # 1, 1-19.
- Harvey, C. and J. Graham, 2001. “The theory and practice of corporate finance: Evidence from the field,” *Journal of Financial Economics*, vol. 60, 187-243.

- Olson, D.L., M.F. Shipley, M. Johnson, P. Dimitrova, 2006, "Simulation as a pedagogical tool for managerial decision-making in a transition economy," *Journal of the Operational Research Society*, Sep, vol. 57, #9, 109.
- Titman, S., J.D. Martin, and A.J. Keown, 2014, *Financial Management Principles*, Prentice Hall, 12th edition.
- Wang, X., W. Tang, and R. Zhao, 2007, "Random fuzzy EOQ model with imperfect quality items," *Fuzzy Optimization and Decision Making*, Dordrecht: Jun, vol. 6, # 2, 139-154.
- Weaver, W. and S. Michelson, 2004, "A Pedagogical Tool to Assist in Teaching Real Estate Investment Risk Analysis," *Journal of Real Estate Practice and Education*, vol. 7, # 1, 43-52.

¹ An earlier version of this paper with Nancy Jay was presented at the 3rd American Institute of Higher Education Conference and appeared in their proceedings.

² Interested readers are welcome to obtain a more comprehensive and detailed literature review from the author.

AN EMPIRICAL ASSESSMENT OF THE EFFECT OF AUDITOR QUALITY ON IFRS INFORMATION COMPARABILITY

**Zhemin Wang, University of Wisconsin-Parkside
Jinsong Tan, Sun Yat-sen University
Zhijun Lin, Macau University of Science and Technology
Jianguo Wei, Sun Yat-sen University**

ABSTRACT

Several studies have examined whether the widespread adoption of IFRS has led to more comparable accounting information across countries and how legal origin and investor protection affect IFRS information comparability. Given the large reporting latitude under the “principle-based” IFRS, auditors are expected to play a critical role in the rigorous interpretation and consistent application of IFRS. However, auditors’ role on comparability has not been studied in the literature. This study extends the literature by examining how audit quality affects IFRS information comparability. Based on Chinese companies’ IFRS-based financial statements, we document significant evidence that financial statements of Big-4 clients are more comparable than those of non-Big 4 clients, indicating a positive relationship between audit quality and financial statement comparability.