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# INITIAL AND LONG PERFORMANCE OF EMERGING AND NONEMERGING INDUSTRY INITIAL PUBLIC OFFERINGS

**Abena A. Arkorful, Longwood University**  
**Dr. Frank W. Bacon, Longwood University**

## ABSTRACT

*The purpose of this study is to test the initial and long run aftermarket performance of emerging and nonemerging industry initial public offerings. According to research, on average most IPOs are underpriced due to investor uncertainty about its performance. The underpricing of IPOs is subsequently followed by underperformance in the long run aftermarket. Using the S&P 500 to adjust for risk this study used a 40 firm sample (20 emerging and 20 nonemerging) to test evidence of underpricing as well as the long run after market performance of emerging and nonemerging IPOs from 1996-2012. This study found that initial market adjusted return for emerging firms showed no evidence of underpricing. Emerging firms overperformed in the long run aftermarket compared to the nonemerging firms.*

## INTRODUCTION

There are two ways a firm can finance projects and other aspects of their operations. It can use debt financing, which is borrowing money from creditors with interest and specified time to pay off its debt. Another way firms can finance projects is equity financing, to offer stocks to the public, this is commonly referred to as going public or an initial public offering. An initial public offering or IPO is the sale of stock shares in a company for the first time. IPOs can be an important source of funds for firms because unlike debt financing, ownership in their companies is a cost which allows firms to raise capital while keeping debt under control. The initial and long run performance of IPOs has been the focus on most IPOs studies. The high initial returns of IPOs and its subsequent underperformance are topics researchers have addressed.

## BACKGROUND AND PURPOSE

Studies on IPOs have shown that IPOs perform well during the initial day or days of trading. However, IPOs underperform in the long run. The idea of underpricing is a phenomenon that researchers have tried to explain within IPOs studies. Underpricing occurs

when the initial offering price for a stock is below the closing price for the stock at the end of the first day of trading (Finkle and Lamb, 2002). Most finance literature on IPOs shows that on average most IPOs are underpriced. There have been several explanations cited as to why IPOs are underpriced. Uncertainty surrounding the IPOs is one reason frequently cited as an explanation for under pricing phenomenon (Johnston, 2000), which leads to high abnormal return on the first day due to the risk. Agency problem and asymmetric information are also possible explanations for the underpricing phenomenon.

The purpose of this study is to investigate the differences in the initial and long run aftermarket performances of IPOs in emerging and nonemerging industries. Finkle and Lamb (2002) defined an emerging industry is classified as one in which the majority of firms are less than 15 years old. This study utilizes a sample of 40 firms (20 from the emerging industry and 20 from the non emerging industry) that went public between 1997-2012 to address the phenomenon of underpricing and long run performance.

## LITERATURE REVIEW

Copious empirical evidence indicates that IPOs of common stock on average generates large short run returns (Finkle and Lamb, 2002). The extent of underpricing has varied from study to study because of the number of IPOs used, methodology as well as time period examined within each study. The focus of these studies has been on first day returns for investors. Explanations for underpricing have an underlying argument based on or related to the risk perceived by potential incoming investors. According to Jog and Wang (2002), high risk IPOs would be underpriced more than low risk IPOs, which offers a positive relationship between the degree of the underpricing and the riskiness of the IPO. Lamb and Finkle (2002) found evidence of underpricing in their study of emerging and nonemerging industries; the results showed that the average return at the end of the first day of trading was higher for emerging firms than nonemerging firms. In other words, investors perceived emerging industries as having more risk than nonemerging industries.

Rock (1986), explained underpricing using the asymmetric information model, which the agency problem relates because they both involve one party (firms, underwriters, investors) having more information than the other. A different level of knowledge about the true value of the IPO exists between informed and uninformed investors. Underwriters, firms and uninformed investors will purchase underpriced IPOs because they are uncertain about the true value of a firm (Johnston, 2000). If new shares were priced at their expected value, informed investors would try to purchase the good issues (Finkle and Lamb, 2002). In essence, underpricing attracts uninformed investors because it allows them to earn a normal return.

Evidence of long run underperformance has been discussed in most IPO studies as well. Studies have found that IPOs tend to underperform the market in the long run usually periods of one to five years (Finkle and Lamb, 2002). Vithessonthi (2008) found in his study of the

Thailand's emerging market economy, the IPOs in the long run underperformed by 41.68% higher than IPOs in the US and Germany. He also concluded that underperformance exists in developing countries and is larger than developed countries. Ritter and Loughran (1995) sampled 4,753 companies from the period 1970-1990 and found an average annual return of 5% per year and showed significant underperformance for 5 years following the offering of these IPOs (Johnston, 2002).

### SAMPLE AND METHODOLOGY

This study sample examines randomly 20 firms in the emerging industries of biotechnology, semiconductor and internet IPOs between 1999-2012. The sample also includes randomly 20 firms in the nonemerging industries between 1999-2012. The criterion was these firms had to belong in one of these industries (emerging and nonemerging) and offered an IPO with the time period. The emerging industry sample is the same used by Finkle and Lamb in their study of IPOs from 1993-1996. Table 1 and 2 describe the sample.

**Table 1: Emerging Industry Sample used in Study**

<b>Industry</b>	<b>Number</b>
Biotechnology	9
Internet Information Providers	6
Semiconductor- Specialized	5
<b>Total</b>	<b>20</b>

**Table 2: Nonemerging Industry Sample used in Study**

<b>Industry</b>	<b>Number</b>
Metals & Materials	3
Auto Parts	3
Sporting Goods	1
Aerospace/Defense Products and Services	3
Beverages- Soft Drinks	2
General Equipment	2
Major Airlines	3
Apparel Stores	3
<b>Total</b>	<b>20</b>

To test initial first day returns as well as the one year (252 trading day) return for emerging and non emerging industry IPOs and examine the effects of underpricing and long run performance this study proposes the following null hypotheses:

H1: The average percent return at the end of the first day of trading for a sample of emerging industry IPOs will be higher than the average percent return at the end of the first day for a sample of nonemerging industry IPOs.

H2: Hypothesis 2: A sample of emerging industry IPOs will underperform more than a sample of nonemerging IPOs one year after going public (excluding the first day of trading).

This study uses a buy and hold strategy, similar to Finkle and Lamb (2002), where an IPO is purchased at the end of the first day of trading and held for a 252 day trading interval. Initial one day period return is calculated as well. The S&P 500 is used to control for risk.

1. Historical prices for sample firms and the S&P 500 index were obtained from Yahoo Finance for their first trading year after the IPO is offered.
2. Day 1 is the first day the firm started trading shares publicly
3. First day returns were calculated using Holding Period Return (HPR) for each firm and the corresponding S&P 500 using the following formula:

$$R_f = (\text{Adjusted close price}_{\text{day 1}} - \text{Open price}_{\text{Day 1}} / \text{Open price}_{\text{day 1}}) * 100$$

$$R_i = (\text{Adjusted close price}_{\text{day 1}} - \text{Open price}_{\text{day 1}} / \text{Open price}_{\text{day 1}}) * 100$$

Where:

$R_f$  = HPR for the firm

$R_i$  = HPR for the S&P 500

4.  $R_f - R_i$  to obtain the market adjusted return for day 1
5. One year returns (2-252 trading days) were calculated using the following formula:
 
$$R_f = (\text{Adjusted close price}_{\text{day 252}} - \text{Adjusted close price}_{\text{day 1}} / \text{Adjusted close price}_{\text{day 1}}) * 100$$

$$R_i = (\text{Adjusted close price}_{\text{day 252}} - \text{Adjusted close price}_{\text{day 1}} / \text{Adjusted close price}_{\text{day 1}}) * 100$$
6.  $R_f - R_i$  to obtain the market adjusted HPR for day 252

## QUANTITATIVE TESTS AND RESULTS

Table 3 and 4 summarize the average market adjusted return for the emerging and nonemerging sample.

**Table 3: S&P 500 Adjusted Returns for Emerging Industry IPOs**

<b>1 Day (%)</b>	<b>1 year (%)</b>
-9.92	24.56

**Table 4: S&P 500 Adjusted Returns for Nonemerging Industry IPOs**

<b>1 Day (%)</b>	<b>1 year (%)</b>
8.91	8.58

Hypothesis 1 states that the average percent return at the end of the first day of trading for a sample of emerging industry IPOs will be higher than the average percent return at the end of the first day for a sample of nonemerging industry IPOs. This hypothesis is not supported by the results which shows that the nonemerging industry IPOs in this study have a higher first day than the emerging industry IPOs. The adjusted return nonemerging industry IPOs was 8.91% versus the -9.92% return for emerging IPOs. Based on the results, the sample used in this study shows no evidence of underpricing contrary to the results of Finkle and Lamb (2002).

Hypothesis 2 addressed long run aftermarket performance of emerging industry IPOs and nonemerging industry IPOs. Hypothesis 2 states that a sample of emerging industry IPOs will underperform more than a sample of nonemerging IPOs one year after going public (excluding the first day of trading). This hypothesis is not supported by the results (Table 4) shows that emerging industry IPOs overperformed the nonemerging industry IPOs. The adjusted return for the emerging industry 252 days is 24.56% and for nonemerging 8.58%. Nonemerging industry IPOs did not show significant underperformance from its first day return of 8.91%.

## CONCLUSION

This study tested the initial and long run aftermarket performance of emerging industry IPOs and nonemerging industry IPOs using 40 firms for the time period 1999-2012. Using the S&P 500 as a control for risk, holding period returns for each firm during the first year their IPO. Returns for each firm were then adjusted using S&P 500 returns for the same 1 year period. The results showed no evidence of underpricing, nonemerging industry IPOs had a higher average initial market adjusted return (1 day) than emerging industry IPOs. Long run aftermarket performance showed an over performance by emerging industries and a slight underperformance by nonemerging industry IPOs.

Specifically this study showed no evidence of underpricing or poor long run after market performance for emerging firms, which signals that the emerging industries are beginning to stabilize over the years, meaning investors have more information about the value of stocks in emerging industries.

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# THE IMPACT OF DIFFERENT AGES AND RACE ON THE SOCIAL SECURITY EARLY RETIREMENT DECISION FOR MARRIED COUPLES

**Diane Docking, Northern Illinois University**

**Rich Fortin, New Mexico State University**

**Stuart Michelson, Stetson University**

## ABSTRACT

*The purpose of this study is to examine the impact of age differences on the social security early and delayed retirement decision for married couples. This paper extends the analysis of Docking et. al. (2013) to couples of different ages. This analysis is done for married couples by race. More specifically, we analyze the 9 married couple combinations for the following races: Whites (W), Hispanics (H) and Blacks (B). The nine husband/wife combinations are: WW, BB, HH, WB, BW, WH, HW, BH and HB. We develop an Excel model to compute the breakeven IRR for each of the 9 race combinations. Following Blanchett (2013), three claiming scenarios are considered: receiving benefits early (e.g., at age 62 versus 66); the maximum realistic delay period (e.g., at age 62 versus 70) and delaying benefits past full retirement age (e.g., age 66 versus 70). Within these 3 claiming scenarios we examine couples by race combination who retire at the same age with age differences of 0, 4, 7 and 10 years with the non-working spouse younger than the assumed working husband. The breakeven IRR's can be interpreted as follows: If a couple's opportunity cost of capital (which can be considered a hurdle rate) is greater than (less than) the computed breakeven IRR, the couple should retire at the earlier (later) age. Our results are somewhat perplexing. For the age 62 versus 66 comparisons the BE IRR's uniformly decrease as the age difference increases. Since, as noted above, these IRR's are hurdle rates, this implies that greater age difference couples should retire earlier since the hurdle rate is less to overcome than at a smaller age difference. These results should be interpreted with caution however since an inflection point occurs at the age 62 versus 67 comparison and continues onto the age 62 versus 70 comparison where the IRR's uniformly increase with age differences. This implies that greater age differences involve a greater hurdle and the smaller the age difference the greater the incentive to retire earlier since the hurdle rate is lower. The results for the age 66 versus 70 comparison are similar to the age 62 to 70 comparison with the breakeven IRR's increasing with age differences although the numbers*

*themselves are quite small by comparison and would seem to suggest early retirement at all age differences given the low hurdle rates to overcome. We are perplexed by the inflection point beyond the age 62 versus 66 comparisons and we have not established a satisfactory economic explanation for these results. We also examine breakeven IRR's for couples by race combination who retire at different ages and who have a positive age difference. More specifically, we examine the impact of age differences on an early male/female retirement of 66 and 62 respectively versus a late male/female retirement of 70 and 66 respectively. In all 9 race combinations the breakeven IRR's decline as the age differences increase. This suggests that the greater the age difference the greater the incentive to retire early as the hurdle rate is lower to overcome.*

# **MERGER AND ACQUISITION ANNOUNCEMENTS EFFECT ON ACQUIRING COMPANY'S STOCK PRICE: A TEST OF MARKET EFFICIENCY**

**Daniel Ferrara, Longwood University  
Frank Bacon, Longwood University**

## **ABSTRACT**

*The purpose of the study is to test the efficient market hypothesis in regards to merger and acquisition announcements. This study will examine how recent merger and acquisition announcements of fifteen U.S. firms affect the firms' stock price. Since merger and acquisition announcements are public information, the semi-strong efficient market hypothesis will be used to test the efficiency of the announcements. All merger or acquisition announcements analyzed are from the year 2013 and standard risk adjusted event study methodology (market model) will be used to test the hypothesis.*

## **INTRODUCTION**

Merger and acquisitions (M&A) involves the combining and consolidating of companies to increase financial and economic growth. Although mergers and acquisitions have become somewhat intertwined with one another, a merger occurs with the absorption of one firm by another, where the acquiring firm keeps its name and identity and the acquired firm ceases to exist (Ross 885). On the other hand, an acquisition occurs when one company takes over another but the acquired firm still exists as an independent entity under the control of the acquiring firm. Companies undergo M&A because they believe by joining together they can benefit each other in some form of business that benefits both firms. M&A can be financed through a payment in the form of cash, payment in the form of the acquiring company's stock, or a combination of both. Merger and acquisitions agreements can be difficult to pass at times due to strict regulation from several government regulatory bodies to try and prevent firms from combining to form monopolies. However, when M&A agreements are successful and become official the firms will make M&A announcement to the public.

## **PROBLEM AND PURPOSE**

The purpose of this study is to test an "overtime" event study to see if the market reacts so fast to all public information that no investor can earn above normal return with the

announcement of a merger or acquisition. This will be a test of the Market Efficiency Hypothesis to determine how long it takes firms' stock price to react to the announcement of M&A. This study test the effects of fifteen merger and acquisition announcements in 2013 on the acquiring company's stock price using event study methodology. Risk adjusted event study methodology is used to determine if this is a strong relationship between the announcement date of the merger or acquisition and the acquiring company's stock price. If the market price and the acquiring company's stock price show similar movement then the Efficient Market Hypothesis would be proven true for this study, however, if the test performed so signs of the acquiring firms outperforming the market relative to the announcement date then the Efficient Market Hypothesis would be false and investors are able to earn above normal return.

### **LITERATURE REVIEW**

This study focuses on using the Efficient Market Hypothesis (EMH) to determine the effects of company's stock price on merger and acquisition announcements. As stated by Ross, when dealing with the Efficient Market Theory investors should only expect to receive a normal rate of return because information is reflected in prices immediately (Ross 438). Ross states that market efficiency can be broken down into three different forms: Weak, Semi-Strong, and Strong. The form we are focusing on in this study is semi-strong. Weak form focuses on past information and when the market is weak form efficient no investor can earn above normal return when acting on past information such as historical prices (Ross 440). Ross defines semi-strong efficiency as when prices reflect all public information and no investor can earn above normal return when acting on public information such as merger announcements, stock repurchase announcements, or dividend announcements (Ross 442). Strong form efficiency occurs when the market reacts so quickly to all information including both public and private. Once again, no investor should be able to earn above normal return when using this information (Ross 443). Fama, Fisher, Jensen, and Roll tested the semi-strong efficient market theory in regards to stock split announcements and found that investors were unable to return above normal return when acting on public information of the stock split. This was one of the first studies to test the speed of stock price adjustments in regards to new information (Fama, Fisher, Jensen, and Roll 1969). However, in a study performed by Fama several years later, he finds that many market efficient studies focus on short term returns because of the advantages of having relatively small expected returns in the short run. Fama states that long run returns must be tested as well to find the true value of the market efficiency theory (Fama 1998).

### **METHODOLOGY**

This study includes fifteen merger and acquisitions from April 15, 2013 till October 3, 2013. All the firms analyzed in this study are publicly traded companies in the U.S. and are

traded on either the NYSE or NASDAQ. The 15 companies will be used to test the semi-strong Market Efficiency Hypothesis by comparing the relationship between merger and acquisition announcements and the acquiring company's stock return around the announcement day. The following hypotheses were created to test this study:

H1<sub>0</sub>: The risk adjusted return of the stock price of the sample of acquiring companies announcing a merger or acquisition is not significantly affected by this type of information on the announcement date.

H1<sub>1</sub>: The risk adjusted return of the stock price of the sample of acquiring companies announcing a merger or acquisition is significantly affected positively to this type of information.

H2<sub>0</sub>: The risk adjusted return of the stock price of the sample of acquiring companies announcing a merger or acquisition is not significantly affected by information gathered around the time of the announcement in the event period, which is defined later in the study.

H2<sub>1</sub>: The risk adjusted return of the stock price of the sample of acquiring companies announcing a merger or acquisition is significantly affected positively by information gathered around the time of the announcement in the event period, which is defined later in the study.

Now standard risk adjusted event study methodology, also known as the Market Model, will be used to test the above hypothesis. All data collected including historical stock prices of the fifteen acquiring companies and the corresponding S&P 500 prices was gathered from Yahoo Finance (<http://finance.yahoo.com/>). The day the acquiring firm announced the merger or acquisition will be defined as day 0.

- Historical prices were collected for the fifteen acquiring companies and the fifteen corresponding S&P prices from day -181 to day +31. The range of days from -180 to -31 is classified as the pre event period and the range of days from -30 to +30 is classified as the event period. The announcement day is defined as day 0.
- Next, the holding period return (HPR) of the acquiring companies ( $R$ ) and the S&P 500 ( $R_m$ ) was calculated for everyday in the pre event period and every day in the event period using the HPR formula:

➤

$$\text{HPR} = \frac{\text{current day close price} - \text{previous day close price}}{\text{previous day close price}}$$

Next, a regression analysis was executed using the HPR of the acquiring company and the corresponding S&P 500 HPR. The regression analysis was executed for both the pre event period and the event period; however, the regression of the pre event period (-180 to -30) was used to find the acquiring company's alpha and beta.

- Now, the risk adjusted method was used to find normal expected return between the acquiring firms and the S&P 500 using the collected alphas and beta and the expected return formula:  $E(R) = \alpha + \beta R_m$
- Next, Excess Return (ER) was found using the Excess Return formula :  $ER = \text{Actual Return} - (\alpha + \beta R_m)$
- After finding Excess Return, Average Excess Return was then calculated for the days in the event period by summing all the excess returns for the day divided by the number of acquiring firms.
- Next, Cumulative Average Excess Return (CAER) was found by adding the Average Excess Return for each day in the event period.
- Finally, graphs for both CAER and AER during the event period were generated and analyzed for their results.

### QUANATATIVE TEST AND RESULTS

The purpose of this study was to test to see if it was possible for investors to earn above normal return when acting on the announcement of a merger or acquisition. Essentially, is it possible for an investor to earn above normal return acting on public information? Did the announcement of a merger or acquisition greatly affect the acquiring company's stock price? One would expect the acquiring firms' average actual return to be higher than expected return in comparison with the market surrounding the days of the announcement (day 0). If the announcement had an insignificant impact on the risk adjusted return of the stock price of the acquiring companies during the event period then hypothesis  $H_{2_0}$  would be supported; however, if the announcement had a significant positive impact on the risk adjusted return of the stock price of the acquiring companies then hypothesis  $H_{2_1}$  would be supported. To test these hypothesis, a paired sample t-test was performed in excel. The results supported the  $H_{2_1}$  hypothesis that the announcement of a merger or acquisition has a significant positive effect on the risk adjusted return of the stock price of the acquiring company. This leads people to believe that investors can earn above normal return when acting on public information. However, I do not believe the results of the test were strictly because of the announcement of a merger or acquisition. If the sample of acquiring firms was larger I believe the semi-strong efficient market hypothesis would be proven more substantially. Both the Average Excess Return (AER) and the Cumulative Excess Return (CAER) during the event period (day -30 to day +30) was calculated. Calculating the AER and CAER shows the relationship of excess returns to the announcement date. The CAER graph showed the announcement of a merger or acquisition had a large impact on stock price surrounding the announcement date (day 0). The CAER graph also showed that the movement of the stock price is relatively steady and below zero until approximately 7 days before the announcement date where it begins to show signs of positive upward movement. The

graph showed a drastic spike on the announcement day; however, it then began to fall and level out which shows signs of the semi-strong Efficient Market Hypothesis.

## CONCLUSION

This “over time” event study test the semi-strong Efficient Market Hypothesis in regards to announcements of mergers and acquisitions and the acquiring company’s stock price. To perform this study, fifteen U.S. publicly traded firms announcing a merger or acquisition in the year 2013 were selected and analyzed. Historical stock prices and S&P 500 prices were gathered 180 days prior to the announcement and 30 days after the announcement. Next, standard risk adjusted event study methodology, also known as the market model, was conducted. This methodology provided comparisons between the acquiring firms holding period returns and the corresponding S&P 500 holding period returns. This study showed that a drastic positive movement of the acquiring company’s stock price approximately 7 days before the announcement which may be caused by some insider information. However, after the announcement the stocks begin to pullback and show signs of the semi-strong Efficient Market Hypothesis which states that no investor can earn above normal return acting on public information such as a merger or acquisition announcement. Also, I believe a greater amount of acquiring companies would provide more substantial evidence to support the semi-strong Efficient Market Hypothesis.

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# SMART MONEY AND MARKET STATES

Steve A Nenninger, Sam Houston State University

## ABSTRACT

*This paper examines the performance of mutual funds in different states of the investing market. Past studies related to “smart money” have found that investors tend to chase past above-average returns. This paper examines portfolios of funds and reveals that the most consistent positive returns are actually from the top performing funds formed during poor market states and from past poorly performing funds during good market states. Evidence suggests that trend-chasing behavior may be more profitable following market declines rather than good markets.*

## INTRODUCTION

Investors tend to chase the returns of highly performing mutual funds in an attempt to earn above average returns. This paper tests whether investing in top performing funds is a successful investment strategy by examining the best-performing quintile of funds against the lowest quintile for a three-year tracking period. Past evidence is conflicting, as Gruber (1996) finds investors can boost return by 1% per year by moving from the bottom decile to the top, while Frazzini and Lamont (2005) find that investors reduce their wealth by reallocating to prior period top performing funds. Results show that the most consistent positive returns are from portfolios formed from the top performing funds following *poor* market states. This implies that seeking out the best funds may be potentially more profitable when doing so after a poor market.

## HYPOTHESIS DEVELOPMENT

The central question of this paper is whether past performance has any impact of the future performance of a mutual fund. That is do the past winner remain winners and do the past losers remain losers. Further, do winners and losers change when the state of the market shifts from good to bad? This idea is summarized in Hypothesis 1 below:

*H1 The future returns generated by “winning” and “losing” mutual funds are dependent upon the market state when the mutual fund is selected.*

## SAMPLE AND METHODOLOGY

Mutual funds generally fall under one of four different classes of shares: no-load, A, B, and C. This study is concerned with class A share and with no-load shares. Data are collected from the CRSP survivor-bias free mutual fund data base for the period of January 1991 through December 2007 for domestic equity funds with assets greater than \$10 million. The final sample includes 24,859 fund-year observations drawn from 4278 unique funds. No-load funds account for 5263 (21.2%) of the observations, and Class A share funds make up 38.0% of the observations. Specific data collected include monthly total net assets, monthly return, fund expenses, and fund investment objective. Annual standard deviation of monthly return and excess objective return are calculated for each fund.

## RESULTS

Previous studies have shown (Nenninger, working paper) that flows are more sensitive to performance for load funds over no-load funds. A question that follows is whether the past 12 months of return is actually related to future performance. If so, this would justify the flow.

This is done for class A and no-load separately to check for differences in returns for the two groups. Results are shown in Table 1. The date in row 1 indicates the year-end in which the portfolio is formed (i.e. the year of data used to determine quintile rank). For example, the 1991 column uses returns from 1991 to form quintiles, then tracks performance for 1992-1994. The returns listed for each quintile are the total compounded monthly raw returns over the 3 year period. The CRSP value-weighted index returns for the 3-year portfolio tracking period are also reported.

Differences between the top and bottom quintiles are reported in the lower half of Table 1. The full period results are similar to Carhart (1997) in that the difference in raw return between the top and bottom quintiles for the full period is not significant. However, examining each 3-year tracking period provides additional insight. A positive difference indicates the top quintile portfolio performed better than the lowest during the three-year tracking period. Of the nine years in which the difference between the top and bottom quintile is significant, there is a nearly even split of 5 instances of the top quintile outperforming and 4 in which the lower does better. Further, for 4 of the 5 periods in which the upper quintile outperformed the lower, the portfolios were formed following years defined as bad market states. This means that selecting top performing funds immediately after a below average market year led to over-performance during the following three years. Further, all four of the periods in which the bottom quintile outperformed the top began with portfolios formed after a good year.

**Table 1: Quintile Three Year Raw Return.**

This table reports performance by quintile of all class A funds from the sample. Quintiles are formed each year based upon previous year raw return, with quintile 1 the lowest return and 5 the highest. Trailing 3-year performance is reported, treating each quintile as a portfolio of funds, with equal weighting for each fund. The date in row 1 indicates the year-end in which the portfolio is formed (i.e. the year of data used to determine quintile rank). Differences between the top and bottom quintiles are reported in the lower half of each table. performance relationship that seems to be more important to financial professionals than to individuals. To examine this, the sample of all no-load and class A funds are divided into quintiles each year based upon raw return, with quintile 1 the lowest return and 5 the highest. The following 3 years of performance are ten tracked, treating each quintile as a portfolio of funds, with equal weighting for each fund

	Portfolio Formation Year-End							
	1991	1992	1993	1994	1995	1996	1997	1998
3-year index	0.208	0.502	0.631	1.142	0.931	0.996	0.363	-0.011
Quintile								
High -5	0.114	0.532	0.536	0.996	0.550	0.744	0.271	-0.078
4	0.115	0.501	0.517	1.051	0.714	0.589	0.201	-0.062
3	0.165	0.462	0.504	1.119	0.713	0.670	0.315	0.055
2	0.154	0.390	0.526	1.029	0.738	0.741	0.365	0.078
Low -1	0.234	0.379	0.542	1.005	0.581	0.729	0.370	0.253
5-1	-0.120	0.153	-0.006	-0.009	-0.031	0.015	-0.100	-0.331
significance	< 5%	< 1%					< 1%	< 1%
initial state	good	bad	bad	bad	good	good	good	good
N	110	160	125	160	170	180	200	240
	Portfolio Formation Year-End							
	1999	2000	2001	2002	2003	2004		All years
3-year index	-0.375	-0.065	0.191	0.615	0.410	0.338		0.329
Quintile								
High -5	-0.498	0.011	0.250	0.653	0.365	0.248		0.291
4	-0.409	-0.043	0.063	0.567	0.337	0.293		0.270
3	-0.342	-0.232	-0.025	0.480	0.330	0.244		0.254
2	-0.228	-0.305	-0.049	0.452	0.305	0.239		0.252
Low -1	-0.100	-0.352	-0.107	0.489	0.265	0.231		0.255
5-1	-0.399	0.362	0.357	0.165	0.100	0.017		0.035
significance	< 1%	< 1%	< 1%	< 1%	< 1%			
initial state	good	bad	bad	bad	good	neutral		
N	295	300	335	335	505	525		3640

One possible explanation for the pattern in returns is market rotation from one objective to another. For example, large growth funds produced an average return of 20.1% in 1999 while income and growth funds averaged of 3.1%. Subsequently, in 2000, growth funds lost 1.7% on average while growth and income produced a 5.8% mean return. Income and growth funds moved from the lower quintiles toward the top over the tracking period. However, style rotation cannot explain the full extent of the difference since results are very similar when forming portfolios based on excess objective return.

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# AUDIT FIRM SIZE AND AUDIT QUALITY IN NONPROFIT HOSPITALS: EVIDENCE FROM CIRCULAR A-133 AUDITS

**Michele M. McGowan, Nova Southeastern University**

**Yuliya V. Yurova, Nova Southeastern University**

**Siew H. Chan, Nova Southeastern University**

## ABSTRACT

*The purpose of this study is to examine the association between audit firm size (Big 4 vs. non-Big 4) and audit quality for nonprofit hospitals receiving a Circular A-133 audit under the Single Audit Act. Defining audit quality as the probability that an auditor will both discover and report a breach in the client's accounting system (DeAngelo, 1981), we hypothesize that a higher quality auditor will identify and report more control deficiencies over financial reporting in compliance with a Circular A-133 audit. We employ logistic regression analysis to a cross-sectional sample of 950 single audit reports for 311 nonprofit hospitals during 2007-2011. The results indicate significant differences between audit firms, with non-Big 4 auditors more likely to report internal control deficiencies than their Big 4 counterparts. In addition to audit firm size, certain client characteristics are found to significantly increase the probability of the disclosure of internal control concerns: smaller hospitals, higher leveraged hospitals, and 'high audit-risk' hospitals (as indicated by its auditor) are more likely to have reported internal control weaknesses, while the amount of total federal funds received and financial performance have no significant effect on the internal control deficiencies reported.*

**Key Words:** *Big 4 vs. non-Big 4 audit quality, Circular A-133 audits, internal control deficiencies, nonprofit hospitals, Single Audit Act*

## INTRODUCTION

The majority of the Sarbanes-Oxley Act applies solely to publicly traded companies, reforming governance, expanding the responsibilities of company executives and auditors, and expanding financial reporting and disclosure. Section 404 of the Sarbanes-Oxley Act (SOX 404) requires auditors to attest to and report on management assessment of the effectiveness of the internal controls over financial reporting. As a result, SOX 404 challenges auditors to improve their auditing methods in order to comply with increased reporting requirements. What remains

relatively unexamined in the literature is whether these significant changes to accounting firm audit and engagement practices required under SOX 404 trickle-down to improve audit quality in nonprofit organizations (López & Peters, 2010).

Prior to the implementation of SOX 404, the evaluation of the internal controls of publicly traded organizations was largely self-regulated and any weaknesses voluntarily disclosed. Unlike their for-profit counterparts, nonprofit organizations have been subject to audits of internal control over financial reporting and program compliance for decades under the requirements of Circular A-133, "Audits of Institutions of Higher Education and Other Non-Profit Organizations" of the Single Audit Act of 1984, as amended. Circular A-133 audits represent the primary accountability tool over the billions of dollars awarded each year by the federal government to governmental and nonprofit organizations. Despite the enormity of these awards and the substantial informational effect audit reports carry, these audits have been plagued with persistent, longstanding quality issues; with research investigating the effect of audit firm size on audit quality providing contradictory results (López & Peters, 2010).

The diversity of the nonprofit organizations studied in previous literature may contribute to these conflicting results. To overcome this limitation, we restrict our study to nonprofit hospitals. Unlike other nonprofit entities, hospitals are subject to intense regulations and oversight by federal and state governments, third-party insurers, bond-rating agencies, and municipal bond investors; and receive a significant portion of their revenue from contracted third-party payers and the government. Therefore, this delineation controls for industry effect, input and output market conditions, and regulatory pressures.

## LITERATURE REVIEW

DeAngelo (1981) hypothesizes that audit quality varies directly with auditor reputation, which in turn varies directly with audit firm size. Large audit firms have more training, superior audit expertise, and greater litigation risk. This provides a greater incentive for discovery of a breach in the client's accounting system and enhances independence which increases the likelihood that the auditor will report the identified breach (Francis, 2004). A significant body of auditing literature applies DeAngelo's (1981) audit quality theory to the study of publicly traded companies, generally concluding that larger audit firms provide higher quality audits (Francis, 2004).

However, research investigating the effect of audit firm size on audit quality in nonprofit organizations provides contradictory results. Keating et al. (2005) investigate audit firm size (Big 5, Regional, Specialist, and Other) in the nonprofit setting and conclude that that Big 5 audit firms were least likely to have clients with reportable conditions and reportable conditions that were material weaknesses. In contrast, regional accounting firms disclosed reportable conditions at a disproportionately higher rate than their Big 5 counterparts and the small non-specialist audit firms were more likely to disclose material weaknesses (Keating et al., 2005). Consistent with

Keating et al. (2005), Petrovits et al. (2011) indicated that the probability of disclosing an internal control problem decreased when a Big 4 audit firm was used and the likelihood of disclosing an internal control deficiency increased when a regional audit firm was used. In an examination of city and county government Circular A-133 audits in the post-SOX period Lopez and Peters (2010) find evidence, contrary to previous studies, of a positive association between audit quality and audit firm size.

Given that audit quality differences may be attributed to client characteristics rather than audit firm size significant academic literature exists on the organizational characteristics that expose publicly traded companies to internal control risk. However, research examining the determinants of internal control deficiencies in the nonprofit sector, and more specifically in the nonprofit healthcare sector, are limited. Keating et al. (2005) examine nonprofit Circular A-133 audit results from 1997 to 1999 and find that organizations that are smaller, new to federal funding, and not classified as low-risk disclose more internal control deficiencies. Petrovits et al. (2011) extend the work of Keating et al. (2005) by examining a more comprehensive set of risk factors that may be associated with reporting internal control deficiencies in nonprofit organizations. In their examination of audit results from 1999 to 2007, they find nonprofit organizations that are new to federal funding, in poor financial health, growing, more complex, and/or smaller disclose more internal control problems.

Defining audit quality as the probability that an auditor will both discover and report a breach in the client's accounting system (DeAngelo, 1981), we use the disclosure of auditor-reported internal control deficiencies as a proxy for audit quality and hypothesize that a higher quality auditor will identify and report more control deficiencies over financial reporting in compliance with a Circular A-133 audit. Additionally, we control for client characteristics that previous research consider determinants of internal control deficiencies: size, third-party oversight, financial health, and audit risk.

## METHODOLOGY

The final cross-sectional sample includes 311 hospitals with 950 Circular A-133 audit observations during the years 2007-2011. The audit data for nonprofit hospitals was obtained from the Federal Audit Clearinghouse of the U.S. Census Bureau (<http://harvester.census.gov>), a database that accumulates auditor's opinion on financial statements and auditor's report on internal controls and federal program compliance of all governmental or nonprofit organizations receiving more than \$500,000 of federal assistance. Related financial data was obtained from the entity's IRS Form 990, *Return of Organization Exempt from Income Tax*, available from GuideStar ([www.guidestar.org](http://www.guidestar.org)). The IRS Form 990 of each hospital for each audit year in the study was manually downloaded and select financial data hand collected.

To test the proposed hypothesis, the following logistic regression model of audit quality was estimated:

$$Prob(ICD) = \beta_0 + \beta_1 BIG\_4 + \beta_2 SIZE + \beta_3 FINPERF + \beta_4 LOWRISK + \beta_5 LEVERAGE + \beta_6 FEDGRANT + \beta_7 YEAR + \varepsilon$$

*Prob(ICD)*, the dependent variable is a proxy for audit quality. It is an indicator variable that equals 1 if the audit disclosed an internal control deficiency; otherwise 0. An *ICD* exists if the audit disclosed either a reportable condition or a material weakness in internal controls over financial reporting. Audit firm size (*BIG\_4*) is an indicator variable that equals 1 if the audit is performed by a Big 4 audit firm; otherwise 0. Hospital size (*SIZE*) is measured as the natural log of total assets. The hospital financial health (*FINPERF*) is measured as by operating margin calculated as operating income divided by operating revenue. Hospital riskiness (*LOWRISK*) is an indicator variable that equals 1 if the hospital is classified as low risk, otherwise 0. Finally, two measures of third-party oversight are examined: *LEVERAGE*, which is ratio of long term liabilities to total assets and *FEDGRANT*, representing the natural log of total federal funds received.

## RESULTS

Table 1 provides the descriptive statistics of the variables in the study, showing the average hospital size (as measured by total assets) in the sample was approximately \$572 million, ranging from small care-units with assets just above \$1 million to large hospital systems with assets exceeding \$5.4 billion. The average operating margin was 9% with mean leverage of 0.47. Federal grant awards average \$25 million, ranging from \$500,000 to nearly \$847 million. Approximately 53% of audits were conducted by Big 4 audit firms, who reported a total of 95 internal control deficiencies out of 250 instances in the sample (approximately 26%).

The sign and significance of the regression coefficient for the *BIG\_4* variable, which captures the difference between audit quality for Big 4 versus non-Big 4 clients, will be investigated to establish the association between audit firm size and audit quality. The results of the estimation and hypothesis testing are presented in Table 2. The audit quality model had sizable explanatory power with pseudo R-square values of approximately 11% and classification power of about 67%. Size of a hospital being audited (*SIZE*) had a statistically significant negative effect on the audit quality (-0.275, *p*-value < 0.01) suggesting that large hospitals are more likely to have lower audit quality than small hospitals. Leverage had significant positive affect (0.760, *p*-value < 0.01) indicating that hospitals with higher levels of borrowing are more likely to have higher audit quality. The amount of total federal funds received and profitability had no significant effect on the internal control deficiencies reported. To test model robustness,

various measures of hospital size, federal agencies oversight, and profitability were tested and yielded similar results.

Variable	Mean	SD	Min	Max
Reportable condition RC	.2442	.43	0	1
Material weakness MW	.1053	.31	0	1
ICD (either RC or MW reported)	.2632	.44	0	1
Assets (mln \$)	571.85	845.38	1.04	5,420.94
Federal grant awards (mln \$)	25.32	83.21	.50	846.99
Operating margin	.09	.37	-6.13	.58
Leverage	.47	.29	-0.001	3.48
Low Risk	.52	.50	0	1
Auditor (when Big 4)	.53	.50	0	1

The audit firm size had a statistically significant negative effect on audit quality (-0.508, *p*-value < 0.01) demonstrating that smaller auditors are more likely to report on internal control deficiencies and, thus, provide higher quality audit. The riskiness of the auditee (LOW\_RISK variable) was highly statistically significant and negative (-0.732, *p*-value < 0.01) suggesting that high-risk hospitals are more likely to have a higher audit quality.

Variable	Coefficient	Wald statistic	<i>p</i> -value	Model Statistics	
BIG_4	-0.508**	-2.68	0.007	Log-likelihood	-486.86
SIZE	-0.275**	-4.66	0.000	Pseudo R-square	0.1108
FINPERF	0.013	0.06	0.956	Sensitivity (%)	68.14
RISK	-0.732**	-4.28	0.000	Specificity (%)	64.40
LEVERAGE	0.760**	2.69	0.007	Total % correctly classified	67.16
FEDGRANTS	0.078	1.56	0.118		

Note: *n* = 950. † *p*-value < 0.10, \* *p*-value < 0.05, \*\* *p*-value < 0.01 for a two-sided test.

## CONCLUSION

SOX 404 resulted in significant changes to accounting firm audit and engagement practices that potentially influenced the audits of nonprofit organizations. Given that our results are consistent with pre-SOX literature, finding that non-Big 4 audit firms display higher audit

quality, we conclude that differences in audit quality recognized by previous studies are still present in the post-SOX 404 environment. As audit reports carry a substantial informational effect these results should be of interest to hospital administrators and boards in examining their choice of audit firm.

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# **MOODY'S ANALYTICS DOWNGRADE ANNOUNCEMENTS OF CORPORATE BONDS EFFECTS ON COMMON STOCK PRICE: A TEST OF MARKET EFFICIENCY**

**Jacob Wiggins, Longwood University  
Frank Bacon, Longwood University**

## **ABSTRACT**

*The purpose of this study is to test market efficiency with respect to corporate bond rating downgrades issued by Moody's Analytics. This study will test the weak-form efficient market hypothesis by analyzing corporate bond rating downgrades issued by Moody's Analytics and the effects on the stock price's risk adjusted rate of return. In this study weak, semi-strong, and strong-form efficient market hypotheses will prove if an investor can earn a positively abnormal return from this public information. The sample for this study was created with fifteen recent corporate bond rating downgrades issued by Moody's Analytics, ranging from August 9, 2009 and September 13, 2013. The evidence of this study supports semi- strong-form market efficiency due to the movement of value of the stock on the date the information is release to the public.*

## **INTRODUCTION**

A corporate bond rating is a letter grade given to a firm that indicates their credit quality. These grades are a reflection of the financial strength of the corporations. These ratings are given by investment firms such as, Moody's Analytics. Moody's Analytics publishes the information on corporate bond rating actions twice a week.

This study will test the Market Efficiency Hypothesis which states that, "all current stock prices are a reflection of all public information on the specific firm and investors should not be able to have positively abnormal returns than the market". This event study will test the hypothesis that an investor can have a positive abnormal return from the market with the public information shared by Moody's Analytics of the changes in corporate bond ratings.

## **PURPOSE**

The purpose of this study is to measure market efficiency theory by viewing the correlation of the stock price and the change in the firm's corporate bond rating in relation to how

quickly it took place. Whether it be weak, semi-strong, or strong form market efficiency with reference to percentage change in stock price and timing, this study used fifteen different ratings changes of the firms risk adjusted stock price which can be viewed to prove the type of market efficiency.

In this study, standard risk adjusted event study methodology was used to test whether the announcement from Moody's Analytics on corporate bond rating changed yields to semi-strong form market efficiency. This study suggests that the market rises as the information is released and the investor does not have a return on abnormal positive information on the market.

## LITERATURE REVIEW

During multiple other studies that focused on downgrade announcements by Moody's, the common stock prices reacted to the downgrade from investment to speculative corporate bonds. This showed the opposite of the other studies including the negative reaction towards the current news at that time (Taib, Hite, Zaima, Hsueh, Akhigbe). This created the main hypothesis that if the corporate bond is downgraded, the common stock price will react on the day that Moody's releases its ratings announcements.

Market efficiency is how the market responds to information about the market. Also, it shows how certain information released to the market reacts and prices change quicker than other types of information. In this study, the three forms of market efficiency are analyzed. (Ross 2008) The first is weak form which focuses on public information such as historical prices. This is the weakest form of market efficiency because historical prices are one of the easiest data sets to obtain. An investor would not be able to act upon this data and outperform the market. (Ross 2008)

The second is semi-strong market efficiency which reflects all public information available on the stock in the price. This would include accounting statements as well as ratings from market analysis firms such as Moody's Analytics. Thus, this form of market efficiency is developed by sophisticated investors that understand the market better than most. This enables these investors to return slightly higher than average on the market. (Ross 2008)

Finally, strong-form market efficiency reflects all data public and private about a firm. This form of efficiency usually proves that there is insider trading taking place. This means the investor could easily outperform the market using this information. This form of market efficiency is not found in the market very often due to the implications of insider trading. (Ross 2008)

## METHODOLOGY

This study sample includes fifteen randomly selected corporate bond downgrades issued by Moody's Investment Services announcements between the time period August 9, 2009 and September 13, 2013. The random sample was selected from corporate bond downgrades issued by Moody's Investment Services website under ratings action news.

To test semi-strong form market efficiency (with reference to announcements of corporate bond downgrades) and to analyze the effect of corporate bond downgrades on stock return around the announcement date, this study proposes the following null and alternate hypotheses:

- H1<sub>0</sub>: The risk adjusted return of the stock price for the sample of firms announcing corporate bond rating downgrades issued by Moody's Investment Service is not significantly affected by this type of information on the announcement date.
- H1<sub>1</sub>: The risk adjusted return of the stock price of the sample of firms announcing corporate bond rating downgrades issued by Moody's Investment Service is significantly negatively affected by this type of information on the announcement date.
- H2<sub>0</sub>: The risk adjusted return of the stock price of the sample of firms announcing corporate bond rating downgrades issued by Moody's Investment Service is not significantly affected by this type of information around the announcement date as defined by the event period.
- H2<sub>1</sub>: The risk adjusted return of the stock price of the sample of firms announcing corporate bond rating downgrades issued by Moody's Investment Service is significantly negatively affected around the announcement date as defined by the event period

This study uses the standard risk adjusted event study methodology stated in the finance literature. The announcement date is the day the downgrade was announced by Moody's. The announcement is day 0 in this study. This information was obtained from Moody's Analytics News webpage. The required historical financial data, the stock price, and the market price (S&P500 index) during the event study period was obtained from Yahoo! Finance.

1. All of the historical data about the stock price and market price in the data set is within the event study duration of -180 to +30 days. The time-period between day -30 to day +30 outlined as the event period and day 0 being the announcement date.
2. The holding period returns of the firms (R) and the market return (R<sub>m</sub>) were calculated by using the following formula: **(Current day close price - Previous day close price)**

### Previous day close price

3. The Risk-Adjusted method was used to determine the expected returns for each stock. The expected returns for each stock were calculated for each day of the event period using this formula.  $E(R) = \text{Alpha} + \text{Beta} (R_m)$ .

4. Excess return (ER) was calculated as:  $ER = \text{the Actual Return (R)} - \text{Expected Return } E(R)$
5. Average Excess Returns (AER) were calculated for each day during the event period by averaging the excess returns for all the firms each day.  $AER = \text{Sum of Excess Return for Day} / \text{Number of Firms}$
6. Cumulative Average Excess Return (CAER) was determined by adding the (AER) from each day during the event study.
7. Graphs of AER and CAER were then formulated for the event period (Day -30, +30).

A regression analysis was performed using the actual daily return of each firm to the market daily return. The return on each firm is the dependent variable and the return on the S&P 500 index return is the independent variable. This regression analysis takes place over the pre-event period (Day -180 to Day -31) and it obtains the standardized coefficient beta and the intercept alpha.

## QUANTITATIVE TESTS AND RESULTS

This study aimed to see how fast the stock market reacts to the announcement made by Moody's Analytics to see if an investor would earn an abnormally positive return on the market. Essentially, would it be possible to surpass the average market return? Due to this announcement made by Moody's, it would be expected that the Average Actual Return (Day -30 to +30) would differ from the Expected Average Returns (Day -30 to +30) significantly. If this does happen then  $H_1$ , which states that significant change in price will take place, would be proven true. To test this hypothesis, a paired sample t-test was conducted and discovered that the announcement made by Moody's might cause an insignificant change in the Risk Adjusted stock price. A reaction can be seen in the days after the announcement. Although, the announcement may not be the cause of the change in price.

One other purpose of this study is to test market efficiency in relation to the announcement of a downgrade made by Moody's. This is determined by a statistical relationship comparing time with either Average Excess Return (AER) or Cumulative Average Excess Return (CAER).

In the trend line of CAER there is a downward slope until around day -10. Then the announcement took place and the prices went down at a much steeper slope until day 4. After this, the market begins to correct itself from the investor overreaction until day 17. Finally, the leveling off around day twenty, shows a price stabilization at an increase which implied that the investor overreaction had taken place and the price corrected itself. For the firms analyzed, an investor would not be able to earn an abnormally positive return above the market by acting on the information released in the announcement. Thus,  $H_0$  is proven incorrect because the slope

becomes steeper. This insinuates investors reacted to each downgrade by selling their stocks off on the announcement date or the days following. This trend line displays the semi-strong form market efficiency because the stock price had adjusted to the announcement before it was made. **H2<sub>1</sub>** is also accepted because in the following days after the announcement there was a sell off. This shows that investors acted on the information around the announcement and then analyzed it. This analyzation by investors stabilized and corrected the price within the end of the event period, showing this information was acted upon appropriately. All of this is strong evidence of semi-strong market efficiency because it reflects all of the public information available. It is clear than many investors take advantage of the ratings given by Moody's to improve their success in the market.

## CONCLUSION

This study tested the effect of announcements made by Moody's Analytics in regards to corporate bond downgrades from a randomly selected sample of 15 firms between the time period August 9, 2009 and September 13, 2013. All of these stocks were traded on either the NYSE or the Nasdaq. The Standard Risk Adjusted Event Study methodology was used to compare the firm's returns to the S&P 500 Market returns.

The study displays that there is definite movement in the price before and after the announcements which concludes that there is evidence of an investor overreaction. This shows strong evidence of semi-strong market efficiency. Due to the small sample size, the study maybe more clear evidence supporting this theory.

Overall, this study proves that announcements made by Moody's do have major effects on investors and how they react in the market. This information shows that there is a negative reaction by investors to announcements made by Moody's. This information should lead into further review of announcements made by Moody's Analytics.

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# **EFFECT OF INVENTORY MANAGEMENT EFFICIENCY ON PROFITABILITY: EVIDENCE FROM THE U.S. MANUFACTURING INDUSTRY**

**Seungjae Shin, Mississippi State University, Meridian**  
**Kevin L. Ennis, Mississippi State University, Meridian**  
**W. Paul Spurlin, Mississippi State University, Meridian**

## **ABSTRACT**

*While manufacturing firms pursue efficient inventory management, there is limited evidence of improved financial performance related to inventory management practices. This paper examines financial statement data for U.S. manufacturing firms to explore the relationship between inventory management efficiency and firm profitability. The results show that a lower ratio of inventory to sales for a firm is associated with higher profit margin for the firm.*

*Key words: Inventory Management, Profitability, U.S Manufacturing Industry*



# **A LONGITUDINAL EXAMINATION OF PRINT ADVERTISING BY PROFESSIONAL ACCOUNTING FIRMS**

**Katherine T. Smith, Murray State University**

**L. Murphy Smith, Murray State University**

**Topaz Prawito, Murray State University**

## **ABSTRACT**

*This study provides a longitudinal analysis of print advertising by professional accounting firms for the period 1988 to 2012. Print advertisements were examined in the three of the most widely distributed professional accounting journals: Journal of Accountancy, Strategic Finance, and Internal Auditor. The advertisements were analyzed to ascertain characteristics advertising by professional accounting firms and how these characteristics have changed over time. Research questions include the following: (1) What is the message or purpose of the ads, (2) What size ads are preferred, (3) What is the information content (e.g. firm's location, phone number, and email address) of the ads, (4) Which firms are advertising, and (5) How have ads changed over time. Findings show that the most common messages of recent ads pertain to general image of the firm, auditing services, and tax services. The majority of ads in the most recent time period include a Web address. Web addresses were not shown on ads in the earliest time period, as the Web was then fairly new and not widely used. Print advertisements were used by firms of all sizes in all three time periods examined. Print advertising would appear to continue to be an effective way to market a CPA firm's services to potential clients.*



# THE MORTGAGE FORGIVENESS DEBT RELIEF ACT: THE LAW, ITS PURPOSE, AND THE UNINTENDED CONSEQUENCES

**Richard Powell, Pepperdine University**

## ABSTRACT

*As a general rule, when a taxpayer owes a debt and there is cancellation or forgiveness of the debt, the cancelled amount may be taxable income. The Mortgage Debt Relief Act provides an exception where taxpayers can exclude income from the discharge of debt on a principal residence in certain circumstances. Debt reduced through mortgage restructuring, as well as mortgage debt cancelled during a foreclosure, qualifies for relief. The Act applies to debt forgiven in calendar years 2007 through 2013. Up to \$2 million of forgiven debt is eligible for exclusion. Members of Congress are currently trying to extend the Act beyond December 31, 2013.*

*Even if a taxpayer does not qualify under the Act, other tax provisions can provide tax exclusion if the taxpayer is insolvent when the debt is cancelled or if the debt is discharged through bankruptcy. Exclusion can also apply in those states where homeowners have mortgages classified as non-recourse loans.*

*The Federal government and state governments have pushed big banks to expand their debt forgiveness programs in order to reduce foreclosures during the recent mortgage crisis. When there is forgiveness, then the Act can help the homeowners by exempting the forgiveness from gross taxable income. The taxpayer must reduce the basis of the principal residence by the amount that is excluded from gross income.*

*When the Act was allowed to expire, the push for debt forgiveness programs was offset by tax consequences to the homeowner. In other words, upon expiration of the Act, the underwater homeowner can start out appreciating the forgiveness of principal on the mortgage only to be later disappointed by the large tax bill based on the forgiveness.*

*During its operative years, the Act could have some unintended consequences. In the debt forgiveness programs operated by the big banks, the taxpayers have an incentive to downplay their financial conditions. This incentive can lead to a strategy of lowering work and income in order to satisfy forgiveness guidelines. Once the forgiveness occurs with its reduction in mortgage principal, the taxpayer can resume normal work after creating a temporary illusion of financial need. A program aimed at helping the needy is instead helping the imposter who might pretend to be needy. In addition, unmarried taxpayers can play the roles of the low*

*income homeowner and the high income companion as they obtain tax exclusion. Again, the unintended consequence can be helpful to the imposter rather than the truly needy.*

*Key words: Cancellation of debt, taxpayer strategy*

# **MODELING THE IMPACT OF THE NEW “MYRA”: HOW IT COMPARES TO OTHER SAVINGS VEHICLES IN THE COMPETITIVE MARKETPLACE**

**Richard Powell, Pepperdine University**

## **ABSTRACT**

*Financial planners have long urged citizens to start saving early for their retirements. With looming shortfalls in Social Security and Medicare, along with towering federal deficits, planners have encouraged citizens to exercise self-reliance in planning for their futures without undue reliance on shaky federal programs. Despite the presence of the traditional IRA, the Roth IRA, the 401 (k), the 403 (b), and traditional pensions, planners have found many citizens with insufficient savings for their old age. Some citizens have failed to take individual initiative. Other citizens have lacked employer-sponsored retirement plans.*

*Policy experts have long favored automatic IRAs to help solve the problem. But the proposed laws have failed. The proposals would require employers to automatically enroll employees in IRAs unless the employees opted out.*

*In 2009, the Treasury Department favored R-bonds, or retirement bonds, to encourage savings. The R-bonds would have the characteristics of a Roth IRA and be aimed at workers at firms that do not sponsor retirement plans, part-time employees who are not eligible for plans that their firms sponsor, and the self-employed or non-employed. With the recent gridlock in Washington, an advantage of R-bonds is that they would not require congressional authorization. With R-bonds, the employee would have an automatic payroll deduction.*

*Recently, in the President’s 2014 State of the Union Address, the President has borrowed much of the R-bond idea to create a savings vehicle he calls a “myRA.” The program resembles a Roth IRA but tries to reach a new market of millions of American workers without substantial retirement savings or access to employer-provided retirement plans. The myRA offers low minimum investments, a guaranteed rate of return, and low fees. Unfortunately, with its reliance on an investment vehicle with a history of a low rate of return, the myRA appears to be a limited response to the problem of low retirement savings. Other savings vehicles seem capable of generating more growth for even the low income saver who has minimal investment capital. It seems the federal government might better serve the low income citizen with a shoring up of*

*Social Security, the traditional program aimed at providing an essential level of retirement income for the needy senior citizen.*

*Key words: myRA, taxation, Roth IRA, Traditional IRA, 401 (k)*

# **THE FREQUENCY, MAGNITUDE, AND MEASUREMENT SUBJECTIVITY ASSOCIATED WITH REPORTING LIABILITIES AT FAIR VALUE**

**Denise Leggett, Middle Tennessee State University  
Stanley Clark, Middle Tennessee State University  
Anne Wilkins, University of Tennessee at Chattanooga**

## **ABSTRACT**

*Pre-2008 accounting standards apply fair value measurement to assets much more extensively than to liabilities. Two new fair value standards, fully implemented in 2008, introduce some important changes to fair value measurement. SFAS No. 157 requires disclosure concerning the subjectivity of fair value measurements as determined by a three-level hierarchy, and SFAS No. 159 extends fair value measurement, on an optional basis, to a large set of liabilities. We examine the prevalence and magnitude of liabilities stated at fair value, the level of subjectivity associated with these fair value measurements, and how these amounts have changed over the five-year period since the implementation of SFAS No. 157 and SFAS No. 159. Our findings suggest both the prevalence and magnitude of reporting liabilities at fair value significantly increased over the study period, and the largest increases occurred in the most subjective levels of the fair value hierarchy. We also find firm size to be positively correlated with prevalence, and we identify firms in the utilities, alcoholic beverages, and shipping container industries as exhibiting the highest levels of prevalence.*



# A SYNTHESIS OF CAPITAL STRUCTURE LITERATURE

Atul K. Saxena, Georgia Gwinnett College

## ABSTRACT

*When teaching the undergraduate intermediate finance course or MBA corporate finance core course, often instructors must provide students an overview and summary of where the financial literature stands on issues of capital structure. Most textbooks will barely cover the principles and facts without delving into the important findings in the literature. The main reason is shortage of class time to adequately and fairly do a literature review. This article surveys the extant literature on this important corporate finance topic and provides a brief summary that can be easily covered in a class period after students are asked to read it beforehand.*

## INTRODUCTION

Firms must raise capital from time to time in order to fund capital projects and/or their day to day operations. Generally, they have two alternatives for raising capital selling stocks (equity) or bonds (debt). Capital structure refers to the way a corporation finance itself through some combination of equity, debt or hybrid securities. In simple terms, capital is the proportion of firm value financed with debt, the leverage ratio (Emery *et al*, 2004). In the real complex world, capital structure is not just ‘debt *versus* equity.’ There are various forms of debt and equities, such as long-term debt, short-term debt, common stock and preferred stock. When firms are looking to raise capital, they attempt to find the particular combination that maximizes the overall market value of the firm. While most firms will have both type of financing, the proportion or the mix varies significantly across industries and firms. In the following paragraphs, a synthesis of the most important findings from the literature is presented. This summary ought to help instructors and their students enrolled in the second undergraduate corporate (intermediate) finance course as well as the core corporate finance course in most MBA programs.

## LITERATURE ON CAPITAL STRUCTURE

### A. Modigliani and Miller (1958) and other Early Leaders

Modigliani and Miller (1958) is the seminal research on this topic. Since then however, there have been numerous studies to investigate the issue of an optimal capital structure and how firms can compute and target their own. In the process, several studies have put forth the advantages and disadvantages of having more debt in their capital structure. Yet another group

has presented their arguments as to the *pros* and *cons* of adding more equity. In fact, capital structure has been one of the most controversial issues in the theory of finance during past 50 years. The factors involved with choosing a capital structure are complex and the impact of each determinant on the value of firm are not always obvious. The study of capital structure attempts to explain the mixture of securities and capital sources used by companies to finance investment. Since the ground work by Modigliani and Miller (1958 and 1963), numbers of theoretical and empirical studies have provided various predictions and explanation on corporation's leverage behavior. The M&M results (1958) indicate that managers cannot change the value of a firm by restructuring the firm's securities. They argue that the firm's overall cost of capital cannot be affected as debt is substituted for equity, even though debt appears to be cheaper than equity. The reason for this is that as the firm increases its debt level, the equity will become more risky and the cost of equity rises as a result. M&M proves that the increase in the cost of equity exactly offsets the higher proportion of the firm financed by low-cost debt. However, M&M's theory is strictly under the assumption of perfect capital market and real-world managers do not follow M&M by treating debt and equity indifferently. In fact, almost any company has its own target debt-to-equity ratio to adhere. Because of this, other factors such as corporate taxes have been considered. In 1963, M&M relaxed those restraints, introduced corporate tax into the model, and obtained the revised conclusion. They argue that the increase of debt level can increase the value of the firm. Nevertheless, firms in the real world are rarely 100% (or 99%) leveraged, because there is a cost of financial distress.

Myers (1984) asserts that a firm's optimal debt ratio is usually viewed as determined by a trade-off of the cost and benefits of borrowing, holding the firm's assets and investment plans constant. This is Myers' *pecking order theory* (which stems from Donaldson's study of 1961) as a contrast to the static trade-off theory discussed next. The pecking order theory suggests that managers raise new capital in a particular sequence. Myers (2001) argued that until now, there is no universal theory of the debt-equity choice and no reason to expect one.

## **B. Static Trade-off Theory**

Under the M&M (1958), capital structure is irrelevant to firm's value. Corporate taxes, viewed in isolation, give firms a strong incentive to use leverage. Under M&M's model, firms should theoretically borrow as much as they can to maximize tax advantages. However, in the complex real world we do not see firms financed by 100% debt due to the offsetting costs of financial distress. Financial distress is defined as a condition where obligations are not met or are met with difficulty. A major disadvantage for a firm relying heavily on debt is that it increases the risk of financial distress, and ultimately liquidation. The risk of incurring the costs of financial distress has a negative effect on a firm's value which offsets the value of tax advantages on borrowing. The most common example of a cost of financial distress is bankruptcy cost.

Corporate bankruptcies occur when shareholders exercise their right to default. There are two forms of bankruptcy costs: direct and indirect (Megginson *et al*, 2007). Direct costs of bankruptcy are out-of-pocket cash expenses directly related to bankruptcy filing and administration. Document printing and filing expenses, as well as professional fees paid to lawyers, accountants, investment bankers, and court personnel are all direct bankruptcy costs.

Indirect costs of bankruptcy are expenses that result from bankruptcy but are not cash expenses spent on the process itself. These costs include the diversion of management's time, lost sales during and after bankruptcy, constrained capital investment and R&D spending, and the loss of key employees.

Although indirect bankruptcy costs are difficult to measure, researchers have shown that they are significant. Many empirical studies indicate that relative to the pre-bankruptcy market value of large firms, direct costs are too small, comparing indirect costs, to provide an effective threat to the use of debt. Warner (1977) is the representative work for his argument. His study involved 11 railroads and is the first step in setting out a methodology for measuring and evaluating bankruptcy-related costs. He cautions that the costs are not small enough to be neglected completely in discussion of capital structure policy. But it would be reasonable to conclude that for firms of the size under consideration, 'the expected direct costs of bankruptcy are unambiguously lower than the tax saving on debt to be expected at present tax rates in standard valuation models' (p.345). Warner's work was criticized by Altman (1984) in the aspect that his results are based on a narrowly defined bankruptcy cost definition (lack of indirect bankruptcy costs) and the small sample size could not provide a whole picture. Altman investigated the empirical evidence with respect to both the direct and indirect cost of bankruptcy. Based on regression models, his results show very strong evidence that costs are not trivial. In many cases they exceed 20% of the value of the firm measured just prior to bankruptcy and even measure several years prior in some cases. In addition, the expected bankruptcy costs for many of the bankrupt firms are found to exceed the present value of tax benefits from leverage. This implies that firms were overleveraged and that a potentially important ingredient in the discussion of optimum capital structure is indeed the bankruptcy-cost factor. Finally, a study by Andrade and Kaplan (1998) of a sample of troubled highly leveraged firms estimates that costs of financial distress accounts as 10 to 20 percent of pre-distress market value.

### **C. PECKING ORDER THEORY**

The Pecking Order Theory attempts to capture the costs of asymmetric information. It put forward the notion that companies prioritize their sources of financing starting with internal financing and ending with equity- this is according to the law of least effort, or of least resistance, preferring to raise equity as a financing means "of last resort". Hence, internal debt earning is used first, and when that depleted debt is issued, and when it is not viable to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required. Thus, the form of debt a company chooses can act as a signal of its need for external finance.

The Pecking Order Theory is popularized by Myers (1984) when he reasons that equity is a less favoured means to raise capital because when managers, who are supposed to know better about the real state of the company than investors, issue new equity, investors trust that managers

believe that the company must be overvalued and are, therefore, taking advantage of this overvaluation. As a result, investors will place a lower value to the new equity issuance.

#### D. AGENCY COSTS

The other imperfection is the presence of agency costs. Three types of agency costs, that is: asset substitution effect; underinvestment problem and free cash flow could help explain the relevance of capital structure. First, in terms of the asset substitution effect as gearing increases, management has an increased incentive to undertake risky projects (even negative NPV projects). This is because if the project is successful, shareholders get all the upside, whereas if it is unsuccessful, debt holders get all the downside. If the projects are undertaken, there is a chance of company value decreasing and a wealth transfer from debt holders to shareholders.

Second, the underinvestment problem view is that if debt is risky (for example, in a growth company), the gain from the project will accrue to debt holders rather than shareholders. Thus, management have an incentive to reject positive NPV projects, even though they have the potential to increase company value.

Third, there is the free cash flow view that unless free cash flow is given back to investors, management has an incentive to destroy company value through empire building and perks. On the flip side, increasing leverage imposes financial discipline on management.

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