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BUSINESS AND PERSONAL BANKRUPTCY

Vaughn Armstrong, Utah Valley State College
armstrva@uvsc.edu
Norman Gardner, Utah Valley State College
gardneno@uvsc.edu

ABSTRACT

This paper considers the relationship between the business bankruptcy filings and personal bankruptcy. If similar economic factors cause financial distress for both businesses and households, the correlation will be positive. For time periods before and after the economic expansion that occurred between 1991 and 2001, correlations conform to expectations. However, for the 1991 to 2001 period, personal bankruptcy filings are on average negatively correlated with business filings. Business bankruptcies decline during this period, but personal bankruptcy levels continue to increase. This result is not explained by existing theories dealing with either the personal or business bankruptcy decision.

THE RETURNS TO HOMEOWNERSHIP: AN MSA LEVEL ANALYSIS FROM 1989 TO 1999

Christopher L. Brown, Western Kentucky University
christopher.brown@wku.edu
Indudeep S. Chhachhi. Western Kentucky University

ABSTRACT:

This paper examines the returns to homeowners across 208 Metropolitan Statistical Areas (MSAs) over the period 1989 to 1999. We find a significant difference in returns to homeowners across MSAs, with the highest returns in the North Central United States and the lowest returns in New England and the Middle Atlantic states. We also find income growth and the percentage of renters in the MSA impact the returns to homeowners.

AN AGGREGATE INVESTIGATION OF THE DEMAND FOR HOME EQUITY CREDIT

Benjamin Dow, Southeast Missouri State University
bdow@semo.edu
Paul Newsom, Valparaiso University
paul.newsom@valpo.edu

ABSTRACT

Home equity credit has continued to grow in importance to both financial institutions and consumers. According to the Federal Reserve Board's 2001 Survey of Consumer Finances, 67.7 percent of U.S. households were homeowners and 44.6 percent of households had some type of home-secured debt, including first and second mortgages and home equity loans and lines of credit secured by the primary residence. More importantly, the 2001 survey indicates that 32.1 percent of households with home-secured debt used the borrowed money for a purpose other than financing their home. Collectively, these figures demonstrate the overall importance of home equity as a means by which homeowners can alter present and future consumption, repay other debts, or both. Financial institutions find home equity loans attractive because of low delinquency and foreclosure rates and consumers are drawn to home equity credit because of the potential for interest tax deductibility. However, most of the research related to home equity credit focuses on surveys of consumers and financial institutions. This paper proposes that financial institutions may find it more beneficial to look at aggregate variables that influence the overall demand for home equity credit in order to more cost effectively utilize home equity marketing campaigns.

Two models based on the findings of past research are developed. The reported uses model states that aggregate levels of home improvement expenditures and debt consolidation are factors that may influence the demand for home equity credit, while the economic indicator model asserts that the economic business cycle and consumer sentiment characterize the aggregate demand for home equity credit. Over the 15-year time period of the study, results from a time series analysis support aspects of both models. Home improvement expenditures and the effect of the business cycle are significant explanatory variables and may be useful indicators in predicting the aggregate demand for home equity credit. There is also some weak support indicating the demand for home equity credit is greater when consumer sentiment is high. Overall, the results hints at the fact that homeowners may view the favorable tax treatment of accessing home equity as opposed to utilizing other forms of unsecured credit more auspiciously during periods of economic recovery and early expansion and that aggregate levels of home improvement expenditures may be a useful indicator of the demand for home equity credit.

THE RELATIONSHIP BETWEEN STOCK MARKET RETURNS AND MACROECONOMIC VARIABLES: EVIDENCE FROM THAILAND

Komain Jiranyakul, National Institute of Development, Thailand
Tantatape Brahmasrene, Purdue University North Central

ABSTRACT

This study examined the relationship between stock market returns and selected macroeconomic variables during the post-financial liberalization prior to financial crisis (January 1992-June 1997) and post-financial crisis (July 1997-December 2003) in Thailand. In the empirical analysis, unit root, cointegration and Granger causality tests were performed. The post-financial liberalization results showed that industrial production index was trend stationary. The remaining variables contained a unit root and were integrated of order one. While no cointegration was found, causality between the stock market returns and macroeconomic variables was apparent with industrial production index, nominal interest and exchange rates. Industrial production index appeared to be a leading indicator of stock market returns. The results from the post-financial crisis showed that all variables were integrated at different orders, hence, no cointegration existed. Following financial crisis, money supply was the only variable that significantly affected the stock market returns. Thus, it can be used as a leading indicator of the stock market returns. In addition, stock market returns may be employed as a leading indicator of nominal interest and exchange rates under the managed float.

PERSPECTIVES OF ONLINE TRADING AND ITS FUTURE

Balasundram Maniam, Sam Houston State University
maniam@shsu.edu
Kurt Jesswein, Sam Houston State University
kurt.jesswein@shsu.edu

ABSTRACT

The costs of online trading include both monetary and opportunity cost components. The monetary costs come from transaction costs related to the trades made online. The opportunity cost is the loss of human contact via telephone. These costs must be weighed against the benefits for comparison.

The benefits of online trading are enormous and continue to grow. These benefits include convenience, efficiency, and investors' control of their own investments to name a few. The benefits of online trading are and will continue to outnumber the costs of online trading for the individual investor.

The purpose of this paper is to examine the present situation of online trading and the costs and benefits associated with online trading. It will also examine the future of online trading relating to technology and the global economy.

A MOTIVE FOR BUST-UP CORPORATE TAKEOVERS

Christopher J. Marquette, University of Pittsburgh at Greensburg
Cjm29+@pitt.edu
Thomas G. E. Williams, Fayetteville State University
tgewilliams@uncfsu.edu

ABSTRACT

We investigate situations in which a firm is taken over by another and then subsequently spun off. We do empirical analysis on the effect the takeover and divestiture has on the value of the firm that initiates these takeovers. We find that there is a negative wealth effect for these firms upon takeover and a positive effect for the spin-off. However, the combined wealth effect of the takeover and spin-off is insignificant. To explore our main hypothesis we regressed the total "round-trip" wealth change for each firm on accounting and financial characteristics of the firm targeted in the takeover. The results show a positive relationship between the total wealth change and research & development expenditure by the target firm. This evidence is consistent with our main argument that bust-up corporate takeovers can increase shareholder wealth when they target firms that have growth opportunities that are underfunded or undervalued by the market.

INTRODUCTION

We investigate transactions where one firm takes over another firm and then subsequently spins it off. We posit that firms engage in these activities with the intent prior to the takeover, to takeover firm and extract some value from the takeover-divestiture combination (a bust-up corporate takeover).

Fluck and Lynch (1999) provide a theoretical framework for why it may be advantageous to take over and subsequently divest a firm. They conclude that the motivation for these actions may be driven by the possibility that certain firms have profitable projects for which they cannot get financing. A merger with a larger firm with the resources can provide this financing. They theorize that once these projects are financed, there arises "coordination costs" due to lack of synergy in the conglomerate. It is then beneficial for the larger firm to divest the newly funded firm.

In this paper, we further investigate these bust-up takeovers. We focus on the wealth effects on the firms that engage in the acquisition and divestiture. Tests are run using the total abnormal wealth effect of the takeover and the divestiture on the acquiring firm to assess whether these takeovers are mistakes (bad bust-up takeovers) or they are "good" bust-up takeovers. Additionally, we conduct further analysis to provide insight on the characteristics of target firms that are indicative of "good" bust-up takeovers.

The combined round-trip market value change associated with these acquisitions and divestitures is not significantly different than zero. The evidence indicates that some of these bust-up takeovers create wealth for the acquirer and some destroy wealth. Further inquiry reveals that the level of research and development expenditures (R&D) by the target firm is related to round-trip wealth gains of parent firm shareholders. These results are consistent with the theory of Fluck and Lynch (1999) that bust-up takeovers can be value enhancing when the target firm has profitable opportunities that can be funded by the acquirer who then divests the firm when it has realized these opportunities.

DATA AND METHODOLOGY

To develop our sample, we selected firms from the Mergers & Acquisitions Database maintained by Securities Data Company Inc. The sample period extends from 1/1/80 and 7/1/98, and includes transactions valued at $100 million or more for non-financial U.S. based firms. The high level of mergers and acquisition activity during the eighties was a major factor in the selection of the sample period. The filtering process we employed and data availability on CRSP and COMPUSTAT resulted in a sample of 70 acquisitions matched with 58 spin-offs.

We collected data for a three-year period that extends from one year before to one year after the announcement of takeover for the bidder and target firms. We do the same for the parent firms around the divestiture announcement. We collect data for the spun-off "daughter" firms in the year after the divestiture announcement.

We calculate the abnormal return as the actual return for the sample firm minus the expected return predicted by the market model generated during an estimation period that precedes each event. The abnormal returns for all firms in the sample provide some indication as to the significance of the event. We also compute the total market value change associated with each event. We find the "round-trip" market value change by summing the abnormal market value changes for all takeovers and divestitures for each acquiring firm.

We also propose hypotheses relating to potential sources of value to the acquiring firm. These hypotheses pertain not to value creation in the target, but value extraction from the target, with the acquirer divesting once extraction is complete. We hypothesize several potential sources of value that can be extracted by an acquirer and accounting variables to characterize them. The possible reasons other than the growth opportunity argument to motivate a firm to acquire and then divest another firm includes: the acquirer seeks the target's current income, to capture income from unfilled orders the target has recorded but not filled, and potential tax benefits from tax loss carry-forward.

RESULTS

Table 1 presents average values of the accounting variables for the bidder and target firms in the year prior to the takeover announcement and for the parent and daughter firms in the year after the announcement of the divestiture. The bidder firms are much larger than the targets in terms of sales and book value as are the parent firms compared to the daughters. The target firms are profitable but have substantial order backlog and loss carry-forward. The bidder firms have strong profitability and very low loss carry-forward and order backlog. It appears that the parent firm retained most of the loss carry-forward and order backlog after it spins off the daughter firm. We see a higher combined book value for the parent and daughter firms than for the bidder and target firms. The parent firms have a dramatically greater number of shares than the bidder firms, indicating issuance of shares after the takeovers. The larger number of shares for parent firms may also be driven in part by new shares issued to pay for the acquisition. There is a considerably higher level of R&D expenditures in the daughter firms than in the target firms.

Table 1

Summary statistics are provided for bidder, target, parent and spun-off "daughter" firms. Data for bidder and target firms are for the year before takeover. Data for parent and daughter firms are for the year after the divestiture. The dollar figures are in millions of dollars except for EPS. The number of shares is in millions.

Variable	Bidder	Target	Parent	Daughter
Sales	$5,717.9	$792.6	$3,056.4	$1,001.3
Book Value	$1,968.9	$280.0	$2,897.5	$623.3

Variable	Bidder	Target	Parent	Daughter
Net Income	$336.2	$20.9	$293.9	$36.7
EPS	$2.62	$1.11	$1.10	$0.02
Backlog	$0.17	$98.2	$121.4	$71.4
Loss Carry-forward	$7.16	$30.1	$49.3	$3.68
Number of Shares	59.6	21.1	198.8	22.4
R&D	$94.7	$16.8	$118.1	$48.9

In Table 2 we report the abnormal stock returns to the bidder and target firms on announcement of the takeover as well as the abnormal returns for the parent firms on announcement of a divestiture. The focus of investigation in this paper is the returns to the bidder and parent firms; however, we also present the results for the target firms for comparison to prior studies. We compute and report abnormal returns for several different windows surrounding the announcement dates.

Table 2
Abnormal returns for bidder and target firms upon the announcement of takeover and for parent firms for announcement of a divestiture.

Firm Type	Event Window			
	(-5,5)	(-1,1)	(-1,0)	(0,1)
Bidder	-2.31**	-2.04***	-1.78***	-1.77**
	(.0332)	(.0042)	(.0034)	(.0126)
Target	19.28***	15.96***	14.41***	15.36***
	(.0001)	(.0001)	(.0001)	(.0001)
Parent	.37	1.35*	.13	1.37**
	(.9257)	(.0741)	(.7051)	(.0260)

* ,** and *** indicate significance at the 10, 5 and 1 percent level

Our results show that bidders lose and targets gain. These findings are consistent with past studies. For the parent firms the significant wealth gains concentrate over the two-day period from the date of the announcement to the day after. The losses suffered by the bidder firms and gains made by the target firms are significant for all event windows we examined.

We compute the round-trip market value change for each window using the same window for the bidder and parent announcements. For example, we combine the (-5, 5) window market value change for the bidder with the (-5, 5) value for the corresponding parent firm. We do this for each event window specification. The market value change for each event is calculated as the abnormal return in event window multiplied by the total market capitalization of the firm. The market capitalization is the stock price multiplied by the total number of shares outstanding on that date. We use the price of the stock and number of shares at the beginning of the estimation period for each event to calculate the market value of the firm.

The round-trip market value change variable is not significantly different form zero for any of the event windows we use. These results suggest that, overall, these bust-up takeovers do not add

or detract value to the acquiring firm. The implication is that either they are inconsequential or that some are good and some are bad for the acquiring firm.

We further analyze the round-trip market value change variable in conjunction with accounting data for the target firms to assess whether we can differentiate between "good" takeovers and "bad" takeovers. We use the market value change for the (-1, 1) window in the multivariate tests.

First, we separate the sample into two groups, one where the market value change variable for the bidder is positive and the other where it is negative and compare the average value of the selected accounting variables for the associated target firms in each group. A comparison of the accounting variables cannot distinguish between the target firms involved in a positive market value change takeover and those involved in a negative market value change takeover, even though the gains by positive market value change bidders is significantly different from the losses suffered by the negative market value change bidders.

Table 3
Regression results for several model specifications of the round-trip market value change on firm characteristic variables.

Variables	Estimate
Intercept	197
	(.184)
R&D Expenditure	5.79**
	(.042)
Sales	-.015
	(.954)
Loss Carry-forward	-.063
	(.946)
Order Backlog	-.202
	(.519)
EPS	-29.6
	(.733)
Income	2.53
	(.512)
Book Value	-.515
	(.520)
F value	2.57**
Adjusted R^2	.212

*, **, and *** indicate significance at the 10%, 5% and 1% level respectively.

We perform regressions with the market value change variable as the dependent variable and the accounting data for the target firms as the regressor variables. We run several model specifications. The results are shown in Table 3. Only the estimated coefficient for the R&D Expenditure variable is significant with a positive value. Every other variable returned a non-

significant coefficient estimate. The adjusted R-square for the model where R&D is the sole variable, suggest that R&D can explain over 21% percent of the variation in the market value change associated with bust-up takeovers. This result appears consistent with the growth opportunity motive for bust-up corporate takeovers.

CONCLUSIONS

We provide evidence on the efficacy of bust-up corporate takeovers. There is no consistent evidence that these takeovers are either benefit shareholders or destroys wealth. However, there is a significant positive relationship between the market value change for the takeover-divestiture event and R&D expenditures in target firms.

These results are consistent with the theory of Fluck and Lynch (1999) that indicates bust-up corporate takeovers can be value enhancing when a firm acquires another firm with growth opportunities and divests once the firm has realized those opportunities. The evidence from our sample does not support many of the several other plausible motives we conjectured for firms to engage in bust-up takeover activities. However, the prevalence of these activities, suggests opportunities for further inquiry of firms and the circumstances surrounding takeovers that are followed by subsequent divestures.

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A MULTI-MARKET, HISTORICAL COMPARISON OF THE INVESTMENT RETURNS OF VALUE AVERAGING, DOLLAR COST AVERAGING AND RANDOM INVESTMENT TECHNIQUES

Paul S. Marshall, Widener University
paul.s.marshall@widener.edu

ABSTRACT

As the title suggests, this paper compares two "formula" or mechanical investment techniques, value averaging (VA) and dollar cost averaging, to a form of random investing to determine if any technique yields superior investment return performance. The tests use historical market prices of chosen stock and commodity indices. Results seem to indicate that value averaging does provide a small but still superior expected investment returns under most conditions. Due to the relatively few real world "experiences" available, these results can only be anecdotally and not statistically confirmed at a high confidence level. Actual investment results reported here are consistent with prior statistically significant research supporting a small investment performance advantage for value averaging versus both other techniques using simulation to approximate market activity. Evidence builds that VA works!

INTRODUCTION

An earlier paper (Marshall and Baldwin, 1994) did a statistical comparison of simulation based investment results for Dollar-Cost Averaging (DCA) and random investment techniques. They calculated the internal rate of return (IRR) to an investor from each of many simulated investment scenarios under both techniques. Their research question was, "Does DCA yield superior investment performance compared to a purely random investment technique?" They found, with 99% confidence, that there is no statistical difference in the IRRs achieved by each technique. They also found, with 95% confidence that each technique had the same risk as measured by the standard deviation of the IRR distributions. They concluded that the null hypothesis was valid and that DCA was not superior to random investments. These results are contrary to most practitioner given investment advice, even including Vanguard's (Vanguard, 1988), and contrary to that presented in many texts on personal finance. See for example (Gitman and Joehnk, 2002.)

To most academics those results are not surprising. The weak and semi-strong forms of the efficient market hypothesis (EMH) suggest that there should be no investment technique that persists in giving meaningfully superior performance over time, transaction costs considered. Admittedly, some techniques have temporarily given superior performance such as those investing in low P/E stocks, investing to take advantage of the "size effect" and even investing based on the January and other calendar related effects. See for example the works of (Fama and French, 1992 and Rosenberg, et. al., 1985.) However, if the market is efficient, as the EMH obviously assumes, the benefits of such techniques should disappear as more and more investors participate in the anomalies to their hoped for advantage. What is interesting about tests of DCA and other purely mechanical techniques, that are influenced only by the absolute level of the stock market and its subsequent price fluctuations over time, is that the corrective mechanism suggested by the EMH can not work, since each investor may start using the technique at a different point in time and hence, at different stock price levels and thus receive investment signals at different price points and at different times.

Edleson has proposed another such mechanical technique (Edleson 1988, 1991), somewhat similar to DCA, which he calls "Value Averaging" (VA). He has tested VA using simulations to compare VA to DCA and to the purchase of a constant number of shares in each investment period. Without considering possible differences in risk, he (Edleson, 1991, pp. 191 and 192) concluded:

> -"(There is an) inherent return advantage of value averaging (over dollar-cost averaging and purchase of a constant number of shares)."
>
> -"It's about as close to 'buy low, sell high' as we're going to get without a crystal ball."

If Edleson was correct, and there were no compensating risk differences, then this was an important development. If so, he seemingly discovered a mechanical anomaly that produces superior investment returns that is not dependent on temporary inefficiencies in the EMH. Further research was clearly called for. And, if VA "works," then additional research on other mechanical investment techniques that may be even better than VA should be encouraged.

A 2000 follow-up paper (Marshall, 2000) proposed a simulation based three-way analysis (VA vs. DCA vs. random investing) and structured the research similarly, where possible, to both the prior work (Edleson, 1988 and Marshall and Baldwin, 1994). Like the latter, the analysis also provided a framework for considering the element of statistical risk. Similar to the earliest work, the research question was, "Does DCA or VA yield superior investment performance compared to a purely random investment technique or compared to each other?" As before the investment return of the three techniques were determined by the IRR of each simulation's cash flow. Many hundreds of simulations of investment results were used to calculate mean return and standard deviation of the IRR. The F-Test was used to test the variation among the three sample populations' mean IRR. Confirming earlier work (Edleson, 1988), Marshall's results strongly suggested that VA almost always actually did provide a small but consistent performance advantage over DCA and random investment techniques, without incurring additional risk, and did so with 99% confidence as measured by the F-Test, for simulations of volatile markets and for long investment time horizons. Finally, results also suggested that there is no statistical difference between DCA and random investment techniques either in expected return or in risk avoidance, thus confirming the earlier work of Marshall and Baldwin and others' less quantitative conclusions. See for example (Geer, 1995; Gibbs, 2000 and Hulbert, 1999.)

Even with those rather astounding results, recent discussion of VA has been sparse, save for a short favorable mention in the Wall Street Journal (Clements, 2001). Amazingly, no other published academic research other than Edleson and Marshall's has tested Value Averaging. Even the popular press is almost silent on VA, particularly when compared to continuing discussion of the now fully academically discredited DCA.

Why such silence? Who knows? Hopefully this research may help to correct that deficiency by continuing the debate by testing the investment performance of VA against both DCA and random investment techniques in the real world of actual market prices. Instead of a theoretical or simulation based approach, this paper proposes an empirical test of the investment performance of DCA, VA and random investing on actual market data over extended (and variable) investment time horizons. Furthermore tests will include foreign as well as domestic markets and other than equity markets, as suggested by some (Bacon, 1997). The research question employed in this paper is,

> "Is there evidence that VA yields superior investment return performance compared to DCA or to a purely random investment technique when tested on actual market data across multiple markets and variable investment time horizons?"

A DESCRIPTION OF TECHNIQUES: DOLLAR COST AVERAGING, VALUE AVERAGING AND RANDOM INVESTING

Instead of asking the reader to review other work as a primer on both DCA and VA, perhaps that chore can best be accomplished here? Also, the exact definition used for Random investing needs description. DCA is generally well understood. Perhaps Yahoo's glossary (Yahoo, 2004) definition for "constant dollar plan" (as they call DCA) is as good as any:

> "(DCA is…) a method of purchasing securities by investing a fixed amount of money at set intervals. The investor buys more shares when the price is low and fewer shares when the price is high, thus reducing the overall costs."

It is the essence of a buy and hold strategy. There is no talk of selling. Similarly, there is no suggestion as to how long DCA should be applied. Their choice of language is also interesting and biased. Can there be any doubt among average investors that, "…reducing overall costs," and by extension, DCA, is a good thing?

The inventor (Edleson, 1991) of Value Averaging, believes the idea behind it is simple. The investor sets a predetermined value or worth for his portfolio in each future time period, as a function of the size of the initial investment, the size of periodic investments and the investment return expected. The investor then buys or sells sufficient "shares" or units of the investment such that the predetermined portfolio worth is achieved at each revaluation point. On yield expectation, the author (Edleson, 1991, p. 119) suggests a long run equity return of 16% (which now seems absurdly high in this post-NASDAQ bubble world), based on an equity return 7.4% higher than the then existing rate on long term bonds. On revaluation timing, the author (Edleson, 1991, p. 162] suggests that, "…(using) value averaging two, three or four times a year would be reasonable..." In his own words, the author (Edleson 1988, p. 13) defines the value-averaging concept:

> "The rule under value averaging is simple: ... make the value not (the market price) of your stock go up by a fixed amount each month."

Considering movements in the investment's market price, the investor then either acquires or disposes of sufficient units of the investment such that the investment's required value is achieved at each subsequent revaluation point. During periods of market price decline, the investor is required to purchase relatively many units to maintain portfolio value. Conversely, during rising markets the technique requires the purchase of relatively few shares to achieve required value. During extended bull markets or during unusually large upward spikes in market price, the technique requires that units be sold to maintain portfolio value at the desired level.

The VA technique is even more intuitively appealing than DCA. As with DCA, more investment units are purchased when prices are low. However, VA magnifies the need to purchase relative to DCA since unit price declines reduce the value of the portfolio thus increasing the need for extra investment and initiating ever more aggressive "buy" signals. Furthermore, and contrary to DCA, VA gives a rule for selling. As the market price increases, beyond what it was recently, VA may require unit sales since the growing price rise may substantially increases the value of the portfolio. And, if the market price continues to increase dramatically, VA gives ever more aggressive "sell" signals to control the value of the portfolio to the level desired.

In the earlier work (Marshall and Baldwin, 1994, p. 61) it is stated that DCA was appealing because,

> "Intuitively, DCA is contrary in the sense that fewer shares are purchased when price are 'high' and more shares are purchased when price are 'low', facilitating the 'buy low' aspect of the ancient investment adage, 'buy low, sell high'."

VA conceptually does an even better job. Even more units are purchased at "low" prices and probably some, at least, are sold at "high" prices.

At this stage, a numerical description of VA and a comparison to DCA may be useful. The price pattern in Table 1 shows that whether the market price of an investment is rising, falling, or fluctuating over time, VA yields a lower average cost of shares purchased than does DCA and both are lower than the average price of shares. No proof, nor even contention, is offered here that this happens under all price patterns, but the specific price patterns used are not selected solely to achieve this goal. The price patterns are the same ones used by Vanguard to tout the supposed benefits of DCA, and the same ones used by Marshall and Baldwin and Marshall in their research.

INSERT TABLE 1 ABOUT HERE

The mathematical "certainty" (as reported by others, see (Edleson, 1991, p. 30) that DCA average cost is always lower than the average price has allowed some to promote DCA as an attractive way to assure superior investment performance. If that were sufficient to assure superior investment performance then by definition VA must be a superior to DCA since VA's average cost is lower than DCA's. But, as demonstrated by Marshall and Baldwin, if there is no statistical difference in investment returns as measured by IRR between DCA and random investing, then logically, random investing must on average acquire shares at the same cost as DCA, time and value considered. Therefore, by extension, the fact that VA acquires shares at lower average cost than DCA for these examples, or even in all cases, is not enough to assure that VA has a performance advantage over DCA. Statistical tests are necessary, and possible due to the essentially unlimited "testing" potential of simulation.

The IRRs for both VA and DCA are shown in Table 1. Interestingly, but not necessarily statistically significant, VA has a higher IRR than DCA for each market price pattern shown. To calculate each technique's cash flow pattern, the length of the investment time horizon, the dollar amount invested and the market price of the investment in each period are required. The IRR can then be calculated since the amount and timing of each periodic investment (or disinvestment) and the ending market value of the portfolio are known. For example, in a rising market as shown in Table 1, the "Period Invest" column for DCA requires a cash outflow of $400 each period, 1 through 4. After a final investment of $400 in the fifth period, the DCA investor has acquired 235 shares with a market price of $16 a share for a total portfolio value of $3,760. The IRR of the cash flow is 32.01%, assuming annual time periods and no transaction costs or taxes.

Some may argue that Table 1 is flawed. The "Value Required" column of VA is simply equal to the cumulative investment shown under the "Total Invest" Column of DCA, implying that the VA investor expects no return on investment. To counter that argument, to better match Edleson's methodology, and to further demonstrate the VA investment technique, Table 2 is presented. Table 2 allows the "Value Required" column of VA to increase period to period by l0% of the prior period's "Value Required" plus the same $400 "Period Invest" shown for DCA, thus implying a 10% investment growth per period for VA. Again, the results are similar to Table 1. Each test shows VA with a lower average cost of shares than DCA and higher IRRs. However, the important question is not which technique yields the lower average cost of an investment. What really matters is which technique yields the statistically significant best investment performance.

INSERT TABLE 2 ABOUT HERE

This paper uses the same definition of "random" as in prior work. Random investing includes a 50% probability of investing in a particular period and a 50% probability of sitting idle. When an investment is made there is an equal chance of investing either 150% or 250% of the amount

invested each period with DCA. This procedure carries three advantages. First, it probably better approximates normal investment pattern such as “on / off” or “more / less” common among many investors, particularly outside of 401K type retirement plans. Second, the probabilities assumed in the technique guarantee that the expected value of the investment is the same as in DCA. This prevents a potential bias in the comparisons by investing considerably more in one technique than the other. Third, it duplicates the method followed in prior work, thus making comparison to that work easier.

EXPERIMENTAL METHODOLOGY

This paper closely follows earlier methodology, (Marshall, 2000 and Marshall and Baldwin, 1994) and uses the same three-way analysis proposal (VA vs. DCA and random…

(The remainder of this case is available on request. For a copy please send your e-mail address to: paul.s.marshall@widener.edu)

AN EMPIRICAL INVESTIGATION OF STREET REGISTRATION FOR BANKING

Laura L. Sullivan, Sam Houston State University
lls003@shsu.edu
Joe James, Sam Houston State University
fin_jfj@shsu.edu
James Bexley, Sam Houston State University
fin_jxb@shsu.edu

ABSTRACT

An empirical study was done to illustrate the dilemma that is faced by banks as a result of securities issued in nominee names. In addition, the study focuses on the level of awareness and concern of banks regarding street registration.

When the stock of a public company is issued in nominee names, the company breaks Securities and Exchange Commission ("SEC") regulations regarding disclosure of ownership when it files its public reports because the company cannot correctly disclose the actual owner of the shares. As the study illustrates, many banks are unaware that shares of its stock are held in nominee names. Therefore, they are unaware that they are breaking SEC regulations when filing required quarterly and annual reports.

This study was conducted by surveying two hundred and fifty banks in Texas with total assets of seventy-five million to determine their knowledge and/or awareness of this dilemma of nominee names. Large, super-regional banks such as Chase, Bank of America and Wells Fargo were not included in this survey. Of the two hundred and fifty surveys that were sent out, responses were received from sixty banks or twenty-four percent.

Although street registration can pose a significant problem for the banking industry, if our survey results are consistent with the industry, awareness of this relatively new potential hazard is minimal. Not only does street registration cause a bank to improperly disclose its ownership, but it can subject the bank to being bought out because significant shareholders can remain unknown to the bank. In addition, improper disclosure also subjects the bank to disciplinary action taken against it by the SEC even though the bank is unaware of the correct ownership. The goal of this empirical study of nominee names or street registration will stimulate further study into this potentially harmful practice.

COMMON COMPONENTS IN LIQUIDITY AND INTRADAY TEMPORAL PATTERNS

Mohsen M. Saad, American University of Sharjah
msaad@aus.edu
Ali F. Darrat, Louisiana Tech University
darrat@cab.latech.edu

ABSTRACT

Microstructure literature expends enormous efforts studying liquidity patterns and common factors in liquidity measures. However, research on the temporal behavior of common liquidity variations has surprisingly been nonexistent. In this paper, we examine the intraday pattern of liquidity co-variations and shed some light on the type of transaction costs that could generate commonality in liquidity. Because of higher information and inventory holding costs during the first and last half-hours of trading, we argue that liquidity co-variations should increase during these half hour trading periods. Empirical results from NYSE intraday data confirm our conjecture and suggest that the degree of liquidity co-variation intensifies whenever adverse selection and inventory costs are high. Our results from NYSE intraday data support a U-shaped pattern for liquidity co-variation. Understanding intraday behavior of liquidity co-movements is essential for portfolio managers, regulators, and for the development of microstructure theory.

VALUATION BASED APPROACH TO THE EX-DIVIDEND DAY STOCK PRICE BEHAVIOR

Confidence W. Amadi, Florida A&M University
Confidence.amadi@famu.edu

ABSTRACT

The ex-dividend stock price behavior has been a perplexing issue in academics for several decades. A considerable amount of effort has been expended to explain why stock prices tend to decline by less and in others by more, than the amount of dividend declared. All of the theories have focused almost exclusively on the tax benefit of capital gains versus dividend income based on either the corporate and or individual investor behavior. The conventional wisdom is that the stock price should decline by the amount of dividend. In this paper it is shown that since stock price depends on the expected dividend, past dividends, except for their information content, should not affect future stock price. It is shown that the decline in the stock price on ex-dividend date is a time value issue that is independent of the current dividend. It is argued that lack of accrual pricing of dividends into the stock price creates an opportunity for abnormal return that result in an increase in demand for cum-dividend stocks and increase in supply for ex-dividend stock. The net effect is the decline in the stock price on the ex-dividend date.

INTRODUCTION

The ex-dividend stock price behavior has been a perplexing issue in academics for several decades. A considerable amount of effort has been expended to explain why stock prices tend to decline by less and in others by more, than the amount of dividend declared. All of the theories have focused almost exclusively on the tax benefit or lack thereof, of capital gains versus dividend income based on either the corporate investor and or individual investor behavior, all within the context of trader arbitrage and transaction cost effects.

The market price of any asset is always on a before tax basis. The effect of taxes is specific to the investor and will be reflected on the investor's desire and willingness to purchase at the going market price. In this paper, I view the price drop as a valuation issue on the premise that the stock price at any given point in time is the present value of the expected dividends discounted at the investor's required return. The timing of the receipt dividends will play a significant role in the determination of the stock price. I argue that the dividend decline is determined by the time interval between the ex-dividend date, the payment date, the variability of the dividend payment date of the firm and the required return on the firm stock.

BRIEF LITERATURE REVIEW

It is generally accepted that stock prices should decline on the ex-dividend date. The concern in the literature seems to center on the fact that the decline is less than the amount of dividend. This implicitly assumes that the decline in the stock price on ex-dividend date should equal the amount of dividend declared. In line with this logic, several studies have tried to explain this phenomenon in terms of either the tax advantage of capital gains over dividend income or the preferential treatment of corporate dividend income stemming from the 70% exclusion rule. For this study, the review of the literature will be limited to the recent works that attempt to identify the variables that affect the magnitude of the ex-dividend date stock price decline as well as studies that focus on the ex-dividend day stock price behavior.

Fenedia and Grammatikos (1993) show that ordinary investors who demand a tax premium dominate trading on low dividend yield stocks while trading in high dividend yield stocks is dominated by short term traders who demand a positive unsystematic risk premium. They, however, concede that "the behavior of returns around the ex-dividend day defies an obvious economic interpretation". (Bali and Hite, 1998) develop a model for trading around ex-dividend date on the premise that dividends are small and continuous while prices are constrained to discrete tick multiples. They show that "discrete trading prices can account for observed $\Delta P/D$ ratios of less than one but also for the ratios increasing with dividends even without tax-induced dividend clienteles." Frank and Jagannathan (1998) show that, in Hong Kong where there is no tax differential between dividends and capital gains, stock prices on ex-dividend days dropped by less than the value of the dividend, on average. They argue that the drop in stock price is due to the bid-ask spread wherein trades tend to occur at the bid price on the last cum dividend days, and at the ask price on the ex-dividend day, resulting in an increase in stock price on the average on the ex-dividend date independent of the amount of dividend.

Siddiqi (1998) studied the determinants of the targets of dividend capture in the U.S. market using utility stocks. He finds that ex-dividend returns vary positively with transactions cost (as measured by the bid-ask spread), holding costs and financing costs, and negatively with dividend yield. (Koski and Scruggs,1998) studied the NYSE audit files to decompose total trading volume by trader type. They find evidence of abnormal trading volume by security dealers that is positively related to dividend yield and negatively related to transactions costs. They find no evidence of tax-clientele trading and some evidence of dividend of corporate dividend-capture trading.

Bhardwaj and Brooks (1999) look at the ex-dividend day behavior of stock prices for the NYSE stocks from 1986 through 1989 and conclude, based on the average price drop relative to the dividend yield, that the tax-clientele and corporate dividend capture is largely responsible for the ex-dividend day stock price behavior. (Naranjo, Nimalendran and Ryngaert,2000) conclude that high-yield ex-day returns are highly influenced by corporate dividend capture during the negotiated commission rate years.

The preceding brief literature review provides a cross-section of the current literature on the ex-dividend day stock price behavior. No works were found that actually addresses the cause of the stock price decline outside of tax clientele effect. The dividend capture theory again is based on the difference between the stock price decline and the dividend. It is the objective of this paper to fill this gap in the literature. This paper seeks to use a valuation based approach to determine the magnitude of the stock price decline that is independent of the trading hypothesis.

THE TIME VALUE OF DIVIDENDS EFFECT

In other to understand the ex-dividend day stock price decline, one needs to look at the behavior of bonds with interest and without interest. In bond trading, the purchaser of a bond is only concerned with when the next coupon payment will be made only to the extent that it will affect the amount that will be added to the price of the acquired bond. Since bonds have a promised cash flow, it is relatively simple to determine the price of the bond. Bond prices do not decline with payment of interest because bonds are traded on an accrued interest basis. Thus the investor knows when the next payment will be made and how much. The situation is completely different for stocks.

The magnitude and timing of the next dividend is a matter of the investor estimate. The Board of directors determines both the timing and magnitude of the next dividend. This element of uncertainty will be manifested in the ex-dividend day stock price. Consider the case of a zero growth constant dividend paying firm. The stock price is the present value of this perpetual dividend stream. On the ex-dividend date, what happens to the stock price depends on the required return, the amount of dividend and the time interval between the next dividend payment and the ex-dividend date. For a zero growth, constant dividend firm, the stock price will change only if the

riskiness of the firm changes. If the risk of the firm is constant, the stock price will remain constant. But on the ex-dividend day, the stock price will decline and the magnitude of the decline can be estimated as the constant price discounted to the present as follows:

$$P_{ex} = \frac{P_{01}}{\left(1+\frac{k}{365}\right)^{x}} \qquad (1)$$

Where:

P_{ex} is the ex-dividend date stock price
k is the investor's required return on the firm's common stock
P_{01} is the expected stock price on the dividend payment date.
x is the time in days between
the ex-dividend date and the dividend payment date.

It the ex-dividend date is the same as the payment date, (x =0), the decline in the stock price will be zero.

For a zero growth firm P_{01} is constant for a given investor required return, and is given by

$$P_{01} = \frac{d}{k} \qquad (2)$$

where d is the constant dividend. This is also the stock price with dividend (before the ex-dividend date). Thus the ex-dividend date decline in the stock price is given by

$$\Delta P = P_{01}\left(1-\frac{1}{\left(1+\frac{k}{365}\right)^{x}}\right) \qquad (3)$$

Equation (3) shows that the ex-dividend stock price decline is directly proportional to the stock price, the investors required return and the time interval between the ex-dividend date and the dividend payment date. It also shows that the decline in the stock price on ex-dividend date is independent of the size of the dividend. This result is in line with the concept of stock price as the present value of the expected future dividend. Past dividend should not affect current stock price unless it is via the information content of the dividend payment. This same analysis can be applied to non-constant dividend firms.

For non-constant dividend firms, the expression for P_{01} is the standard dividend discount model. Thus

$$P_{01} = \sum_{1}^{\infty} \frac{d_t}{\left(1+k_t\right)^{t}} \qquad (4)$$

In the case of a firm with constant growth in dividends, the stock price is given by:

$$P_{00} = \frac{d_0(1+g)}{k-g} \tag{5}$$

The future stock price at time *n* can always be expressed as

$$P_n = P_0(1+g)^n \tag{6}$$

Thus, all things held constant, for the firm with a constant growth in dividends, the stock price will increase at the rate of *g* per period. Let *x* be the time interval between the ex-dividend date and the payment date, and *L* be the time interval between dividend payments, then the stock price just before it goes ex-dividend will be given by

$$P_x = P_{00}(1+g)^{\frac{L-x}{L}} \tag{7}$$

The stock price on the payment date, time zero is given by

$$P_{01} = P_{00}(1+g) \tag{8}$$

The stock price on the ex dividend date can be expressed as

$$P_{ex} = \frac{P_{01}}{(1+k)^{\frac{x}{365}}} = \frac{P_{00}(1+g)}{(1+k)^{\frac{x}{365}}} \tag{9}$$

Hence the ex-dividend day price change is the difference between equation 7 and equation 9. With a slight rearrangement the price change is given by

$$\Delta P = P_{00}(1+g)\left\{(1+g)^{-\frac{x}{L}} - (1+k)^{-\frac{x}{365}}\right\} \tag{10}$$

Equation 10 shows that the ex-dividend day stock price decline is a function of the firm's stock price, rate of growth of dividend, the investor's required return on the firm's equity, the dividend payment frequency and the time between the ex-dividend date and the dividend payment date. It also shows that aside from the effect of dividend in the determination of the stock price, that the magnitude of the dividend does not affect the ex-dividend date price decline.

ANALYSIS AND CONCLUSION

Since the (Elton and Gruber, 1970) tax clientele theory of ex-dividend date stock price behavior, tax effects have dominated the discussion on this phenomenon. This paper looks at the reasons behind the ex-date decline and quantifies the magnitude of the decline as being independent

of the size of the dividend. Equation 3 and 10 can be used to explain the corporate dividend capture based on the forecasted decline in the stock price.

Consider, for example, a firm that has the ex-date exactly 14 days from the payment date. Let the stock price on the last dividend payment date be $40.00, if the firm is a zero growth constant dividend firm, and pays its dividend quarterly, and the annual required return on equity is 14%, then equation 3 says that the decline in the stock price on the ex-date will be equal to $0.214 per share. This is an ideal candidate for dividend capture since the quarterly dividend will equal $1.40 per share. This is the situation with utility stocks as documented by (Siddiqi, 1998). Utility companies are the closest thing to a constant dividend firm. The abnormal volume of trading by dealers around the ex-date as reported by (Koski and Scruggs, 1998) lends support to this finding. Security dealers, aware of this potential for abnormal returns will increase the demand for the stock price before the ex-date and increase the supply on the ex-dividend date. The net effect is an increase in the capital loss and a reduction in the anticipated gain from the round-trip trade.

Similarly, equation 10 can be used to forecast the expected ex-date decline in stock price. For a firm that pays quarterly dividend, the time interval between dividends, L, will equal 91.25 days. If we assume a quarterly dividend growth rate of 1.5%, a required return of again 14% and the time lag (x) between ex-date and payment date of 14 days, for a stock price of $40.00, the ex-date decline in stock price based on equation 10 will be $0.1102 per share. The implied quarterly dividend is $0.80. This again is an ideal situation for dealers who have reduced transaction cost.

The above exercise demonstrates the nature and magnitude of the price change. It underscores the effect of transaction cost and the tick pricing system on the ex-date price decline. The size of the price change can be expected to be small since it is based on the present value concept of stock price determination wherein only the expected future dividend (cash flow) is relevant in the valuation of an asset. The ex-dividend date stock price behavior can be characterized as a trading induced effect resulting from the mechanics of dividend payment

This study contributes to the literature by systematically quantifies the ex-date stop price change based on asset valuation principles. Whereas most studies on this issue focus on the participants in the market who take advantage of the profit opportunity, this paper illustrates the size of this opportunity. It also shows that the ex-date price behavior is a consequence of the non-accrual nature of dividends. Thus investors can practice dividend capture even though the price of the asset reflects the expected cash flows from the ownership of the asset. This situation will continue to persist since dividends are not promised and the accrual of dividends between payment dates is not possible.

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