INVESTOR REACTION TO NEW ISSUANCES OF U.S. HIGH-YIELD DEBT

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Abstract

This paper investigates firms issuing high-yield debt and the impact on their stock price by identifying determinants of the negative abnormal return that surrounds the announcement of an issue in the short-run. It is learned the length, coupon payment and amount of the issue are significant in explaining the CAR as is the age of the firm, first-time issuers and the marketplace where its stock trades. Firm performance ratios including the current and total-asset-turnover ratio also have explanatory power. These determinants of the CAR have an explanatory power approaching 55%.

Keywords: stock price, debt, investors, the USA

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1. Introduction

Non-investment grade debt is an important financing option for many firms that do not have access to traditional capital. This includes equity offerings and debt instruments such as bank loans or investment grade bond. While investors enjoy higher returns on HYD, the risk of default is also higher. During the period of 1997 – 2002, nearly $174 billion of new HYD was issued. This accounts for nearly 1/7th of all new bond issuances in the United States[11]. During the period of 1992-2001, the average return on high-yield bonds issued with a maturity of 10 years and a rating of B was 9%-11%. Its AAA-rated counter part of investment grade quality yielded a 6% return on average. This higher return does not come without added risk of default. Over the same period, Moody's Investor Services reports that 1.45% of all bonds issued during that period have defaulted; with 4.29% of all HYD issued entered into default, while only 0.03% of investment grade bonds defaulted. In general, the lower the rating of the bond, the higher the potential for default.

The HYD market was born in the early 1980s to supply small and mid-sized firms that demanded capital. The capital was used for acquisition, growth opportunities, and general spending when the firms' balance sheets would not support traditional financing. Drexel Burnham Lambert (DBL) sought out these firms and created a new debt instrument in the non-investment grade bond. Issuers of this new type of investment included the communications and gaming sectors that experienced insurmountable growth in the early 1980s. Early investors (pre DBL) in the non-investment grade market primarily invested in bonds that had fallen from investment grade status to non-investment grade. New issuers of HYD looked to the private placement market to secure financing. In the mid 1980s, DBL began issuing bonds with a credit rating below investment grade. Major investors in the market included insurance companies, saving and loan associations, and later, mutual funds. Since the mid 1980s, the high-yield marketplace has been comprised of both firms whose debt fell below investment grade and firms not capable of issuing debt at investment grade.

Acquisitions funded with debt or leveraged buyouts (LBO's) using HYD emerged in the mid 1980s. Nearly 1/3 of HYD IBOs (initial bond offerings) in 1985 were issued for LBO's or other acquisition purposes. By 1989, this ratio increased to nearly 65%. The investment community became concerned with firms issuing HYD for acquisition purposes. The investment community had increased their risk and possible unnecessary exposure to the firms in which they held bonds. Along with increased risk came compensation, and this meant higher anticipated returns. Successful LBO's provided higher rates of return for high-yield bonds compared to other investment opportunities. The acquiring firms quickly streamlined operations after an LBO by rapidly paying down debt with the free cash flow generated by increased sales. This led to better financial performance which increased the market price of the debt. However, many of the LBO HYD offerings never reached maturity. After the successful completion of the buyout, many firms would restructure and refinance their capital structure with a

[11] Private issues of debt are excluded from this estimate. Bond statistical information (pages 4-6) is from The Bond Market Association publication, "An Investors Guide to High-Yield Bonds" 2000.

new issuance of equity and retire debt from the proceeds at a premium to the investors liking.

Firm growth and LBO's were the main forces driving the infant HYD market along with distress relief. Many firms experienced financial troubles in the 1980s and sought financing in the non-investment grade market when their financial obligations could not be met. These firms issued HYD to pay existing financial obligations in an attempt to ward off a financial distress event. HYD instruments generally have less restrictive covenants than traditional bank debt. Managers were issuing the new debt to pay off bank loans that restricted firm activities. This opened the door for management to partake in new projects that bank loans would not allow due to the distressed position of the firm, and the conditions set forth in the newly retired bank loans.

The late 1980s brought a stalled economy, a federal investigation into DBL, and an increased leverage into the LBO's that were issued earlier in the decade. The Bond Market Association reports the default rate of HYD peaked in 1990 and 1991 at 7.9% and 9.3%, respectively. With a tightening marketplace and a lack of liquidity, the average price of HYD was issued at 65.9% of face value for 1990. By the end of 1991, this downward trend had run full course with the average price of issuance reaching 80% plus of face value. The HYD market also posted impressive returns in 1991 and 1992 of 44% and 17%, respectively. This sparked new interest into the speculative grade market with insurance companies, mutual funds, and pension funds actively adding HYD to their portfolios. Along with this renewed interest, new issuances began to grow. $40 billion worth of new issuances entered the market in 1992, with 1997 being the peak year for issuances with $135 billion. The underwriting community also played a large role in this trend. In the late 1980s, DBL controlled 60% of this market. After the demise of DBL in 1990, traditional underwriters began to offer non-investment grade IBOs. By 1997, this market had 11 major underwriters offering IBOs, each with less than a 12% market share.

The issuing trends in the 1990s were two-fold. In the early 1990s, firms were refinancing outstanding coupon debt issued at high rates for lower rates. By the mid 1990s, this trend had slowed and changes in technology and the telecommunications sector became the driving force for new issuances. The telecommunications sector went through a major revolution in the 1990s with advances in technology and deregulation. Technological advances in computers fueled the Internet and the birth of the electronic media; while deregulation allowed media outlets to own more broadcasting entities than previously allowed. The technology sector demanded an extraordinary amount of capital to keep up with technological advances. At the same time, massive consolidation was triggered in the telecommunications sector. The first five years of the 21st century have continued on the path of the mid to late 1990s with technology firms driving new issuances. However, there has been a return of firms issuing non-investment grade debt for LBO's and other acquisition activity.

High-yield bonds in many cases offer greater yields to compensate for the significant increase in credit risk. Some investors place these types of bonds in their portfolio because of the higher rate of income generation from the higher coupon payments. Bonds of this type offer the potential for capital appreciation if the borrower's debt rating is upgraded due to improved earnings, mergers or acquisitions, positive industry developments, etc. Gilson and Warner (1998) use event study methodology in an attempt to capture investor reaction to bond issuances by analyzing abnormal stock returns around announcements of HYD. Using a database of 164 stocks, they find a mean cumulative abnormal return (CAR) of -0.8% for both the (-1,1) and the (0,+1) event date windows. While providing evidence stockholders foresee issuances as a negative event, they provide minimal justification for the negative abnormal returns by regressing selected firm specific variables and events against the abnormal return.

In this chapter, I extend the current research by examining abnormal returns that surround an issuance of HYD, and identify firm specific variables and events that are determinants in explaining negative reactions to new issuances of HYD. The intention of this chapter is to investigate into the world of high-yield bonds by analyzing investor reaction to new issuances of HYD. Section 2 is the literature review over abnormal returns and investor reaction to announcements of HYD. Section 3 looks at the short run determinants of a CAR, while Section 4 employs a variety of testing methods to determine if a significant abnormal return exists and what contributes to the investor reaction. Section 5 summarizes the research.

2. Literature Review

The existing literature provides evidence that a link between the use of HYD and financial distress exists. Research by Dahiya, Saunders, Srinivasan (2003), Altman (2000), Boughton (2000), Asquith, Gertner and Scharfstein (1994) and Giammarino (1989) show the validity of this link between high-yield bonds and bankruptcy issues. Gilson and Warner (1998) shows that stockholders will react negatively to new issuances of HYD. Furthermore, they believe issuances of HYD may be initiated by instances other than a distress event. Gilson and Warner (1998) also provide results of cross-sectional testing in an attempt to explain why significant CARs are plausible for reasons other than financial distress. Regressed against the CARs are variables emphasizing flexibility, implicit information, and agency costs within the issuing firms. Two variables were employed to capture flexibility that included post-issue % sales growth and a variable to determine if

the firm's pre-interest coverage ratio is above or below the sample mean. Following the work of Healy and Palepu (1994) Value Line earnings forecasts were used to capture any bad news relative to future firm performance. Variables representing agency costs include the level of inside ownership within the firm and the use of the proceeds generated by the issuance. The use of proceeds variable is used to capture whether the issuance was allotted to the repayment of debt or used to finance investment in working capital or real assets.

The results of Gilson and Warner (1998) reveal that bank debt reduces flexibility and keeps firms from pursuing profitable growth opportunities. The announcement of a HYD issue can convey a bad news event by management, which can spark a decline in earnings. Increases in agency costs now happen after the issue since managers now have the flexibility to pursue less profitable (or negative present value) projects that will not maximize the value of the firm. Just as importantly, variables representing wealth transfers, financial distress, maturity and underwriter and time effects were shown to have no significance for determining why stock prices decline around firms' announcing new issuances. The chapter concludes citing that financial flexibility is a key motivating factor driving new issuances of HYD.

Attempts to explain abnormal stock returns have taken a few different avenues. Fama and French (1996) use a three factor model to explain abnormal returns that includes regressing firm specific variables such as firm size and book to market ratio. Jensen, Johnson and Mercer (1998) provide arguments that the abnormal returns are influenced by monetary policy and vary significantly over time. Furthermore, it is shown in this test that when using macroeconomic factors, the three-factor model proposed by Fama and French (1996) will not provide adequate results. Hahn, O'Neill and Reyes (2004) study stock return anomalies by examining small firms and value stocks. They use a model created by Eckbo, Masulis and Norli (2000) that eliminates abnormal returns once differences are adjusted for various measures of systematic risk. The model used by Eckbo et al. (2000) captures firms' sensitivity to short and long-term interest rates, patterns of consumption and inflation, and find after accounting for these factors, stock returns to new issuances of equity appear normal.

Hahn et al. (2004) attempts to explain the abnormal return through a regression model regressing a measure of default risk, difference in the Treasury return over the past 20 years, change in real per capita consumption of consumer goods, unanticipated inflation, and the return of the market against the abnormal return. They find that macroeconomic variables can resolve the return differential between large and small firms while the abnormal return used in investment strategies (long position in low market value stocks and short position in high market value stocks) is not significant when accounting for macroeconomic risk factors. They also reveal that the market does not consider exposure to changes in short term interest rates a relevant risk for small firms. When assessing value versus growth stocks, they find evidence that the book to market ratio, cash flow to price and dividend yields were significant in determining the abnormal return for growth stocks but fails to have any explanatory power for value stock firms[12].

Fama, Fisher, Jensen and Roll (1969) pioneered studies using event-study methodology which features market model prediction errors for hypothesis testing. The market model used is:

$$R_{it} = \alpha_i + \mathrm{B}_i R_{mt} + u_{it,} \qquad i = 1,.....,n,$$
$$t = 1,.....,T, \qquad (1)$$

Where R_{it} = return on a security *i* for period *t* and R_{mt} = the return on the market portfolio for the period *t.*

Jain (1984) shows applying the assumption that the joint distribution of security returns will be multivariate normal, the joint distribution of the return for any security (R_i) as well as the return on the market portfolio (R_m) will be bivariate normal. This allows Equation 1 to be a valid representation for the returns on security *i*. The coefficients α_i and β_i are mostly estimated using an ordinary least squares technique which determines the prediction error over the period of evaluation. These prediction errors (u_{it}) are precisely the abnormal return shown by:

$$u_{it} = R_{it} - \alpha_i - \beta_i R_{mt}, \quad t > \mathrm{T}, \quad i = 1,\ldots\ldots n. \qquad (2)$$

Where R_{it} = return on a security *i* for period *t* and R_{mt} = the return on the market portfolio for the period *t.*

Leftwich (1981), Collins, Rozeff and Dhaliwal (1981) and Holthausen (1981) all developed models that examine abnormal returns using cross-sectional variables. Regressing cross sectional variables against the abnormal return will reveal the characteristics that have an influence upon the abnormal return for a given event.[13] The general form of this model is represented by:

$$u_i = f(firm - sprecific - \mathrm{var}iables)_i + w_i,$$
$$i = 1,\ldots\ldots,n. \qquad (3)$$

where w_i is the disturbance term

[12] The test also reveals that abnormal returns appear to be contained to a few decades and do not continue throughout time.

[13] Event studies have generally focused on events such as new issuance of equity, stock splits, divestures, changes in capital structure and any public information that may impact security prices.

Models of this type are prevalent in academic literature. The most common application of event-study methodology is measuring the impact of an event and how investor's react by changes in equity prices in both the short and long-run. Loughran and Ritter (1995) both show that firms engaging in initial public offerings will significantly underperform firms that do not issue for a period up to 5 years. Brav, Geczy and Gompers (2000), Eckbo et al. (2000), Mitchell and Stafford (2000) and Spiess and Affleck-Graves (1995) find significant underperformance surrounding seasoned equity offerings. Spiess and Affleck-Graves (1999) find the underperformance can exceed 30% over a 5-year period in comparison to a firm that does not have a secondary equity issue. Lee and Loughran (1998) evaluate rights offerings and find little evidence of post-offering underperformance. Ikenberry, Lakonishok and Vermaelen (1995) find significant abnormal returns of 12% exist in the four-year period immediately following stock repurchases.

Research using event-study methodology has also been prevalent in the debt markets. Mikkelson and Partch (1986), Eckbo (1986) and Dann and Mikkelson (1984) find that firms issuing straight debt[14] experience insignificant negative returns at the announcement of debt offerings and conclude firms issuing straight debt have no impact on shareholder wealth. Consequently, Spiess and Affleck-Graves (1999) find substantial long-run underperformance by firms that issue straight debt and find the underperformance is more severe for firms that are small, young and whose equity trades on the NASDAQ markets. Eckbo et al. (2000), Spiess and Affleck-Graves (1999) and Lee and Loughran (1998) show significantly negative stock price reaction surrounds an issuance of convertible debt.

Gilson and Warner (1998) apply event-study methodology to firms' issuing HYD and find stockholders also react to these issuances with negative CARs. They assess investor reactions through the use of event study methodology in an attempt to capture abnormal stock returns around announcements of HYD issues. Using a database of 164 firms, they find a mean CAR for the issuing firms stock to be -0.8% for both the (-1,1) and the (0,+1) event date windows. Furthermore, they show that firms issuing HYD for the first time experience a mean CAR of -0.11% for both the (-1,1) and the (0,+1) event windows. The sample revealed nearly 63% of the issuing firms had negative CARs around the announcement of HYD and 130 of the 164 firms in the sample were first time issuers of this type of debt instrument.

Gilson and Warner (1998) use event-study methodology to find statistically negative abnormal returns in the short-run surrounding an announcement of a HYD issuance. However, their database is related to subsequent bank loan rating changes and analyzes 164 firms. Current academic research has also identified a variety of uses for event-study methodology with little attention directed at cross-sectional studies in attempts to understand why stockholders react in the manner they do. Given the limitations in the database with respect to size and qualifying observations, I hypothesize that using a database encompassing a larger number of issues without restricting the database to firms with changes in bank debt rating will provide a more accurate assessment of investor reaction to the firms' announcement of issuing new HYD.

Jain (1984) provides the foundation to conduct tests for firm specific variables explaining abnormal returns. Gilson and Warner (1998) also complete cross-sectional tests in an attempt to identify any variables that may influence the abnormal return. They find variables associated with a firm's flexibility have statistical significance while variables measuring wealth transfers, financial distress, maturity, underwriter and time effects were shown to have no significance.

It is here the limitations of the previous work exist. By using a database with a larger number of issuances and without restrictions tied to changes in bank loan ratings, a cross-sectional analysis can be completed using a database of firm-specific and bond characteristic variables regressed against the abnormal return.[15] Testing of this nature will present evidence why stockholders react through abnormal stock returns which surround the announcement of a HYD issuance. After identifying any abnormal returns surrounding issuances of HYD, a cross-sectional analysis will be completed using bond and firm specific variables so it can be learned if the variables tested explain the abnormal returns surrounding an announcement of HYD.

3. Data and Methodology

The data used in this chapter comes from several sources. New issuances of HYD issued during the period 1985-2003 will come from the SDC database. Other data unique to each observation taken from the SDC database includes: the marketplace in which the firms' equity is traded, issue date, issue amount, coupon amount, use of proceeds, callability, years to maturity, and the credit rating of the issue. The sample includes 4,217 issuances of HYD by public firms. I omitted 1,434 observations from the dataset for not having complete information over the variables identified; this leaves 2,783 issuances of HYD to be observed. Following Jain (1984)[16] and

[14] Straight debt is essentially a loan written at a specific interest rate, which is to be repaid over a set number of months.

[15] Firm specific variables focusing on changes in Liquidity, Asset Management, Debt Management, and Profitability.

[16] Jain (1984) uses market value of equity and debt to equity ratio to explain abnormal returns.

Gilson and Warner (1998)[17], I next seek out firm specific variables to complete a series of cross-sectional regressions to explain the abnormal return. Financial statements from Compustat are used to understand a firm's financial position at a given point in time, and can be used as a predictor of future earnings and dividends. It is along these lines that I have selected firm specific ratios to explain the abnormal returns surrounding an issuance of HYD. I have selected ratios of liquidity, asset management, debt management and profitability to complete this series cross sectional analysis. The Compustat database was used to match 2,783 observations with full information in the SDC database in complete information with respect to financial variables. After eliminating observations in the database for incomplete information, the end result netted 700 observations. Figure 1 shows the origin of the data, a brief description of the variables selected including any dummy variable classifications used in the testing.

I will start by assessing the database of 2,783 firms with complete information from the SDC database, and complete a series of event studies to capture any CARs surrounding the issuance of HYD. I will test CARs in the short run to capture reaction to the announcement by starting with a one-day event window surrounding the announcement to an 11-day event window. Abnormal returns follow a single factor market model featuring ordinary least squares while using a portfolio standard deviation method across the sample. The general form of the equation measuring the return is:

$$R_{jt} = \alpha_j + B_j R_{mt} + \varepsilon_t \quad (4)$$

where R_{jt} = return of stock j, α_j = the intercept, B_j = Beta of stock j, R_{mt} = return of the market, ε_t = the error term with the error term having an expected value of zero and uncorrelated with the market return variable. The return of the individual stock and the market return are used to calculate the abnormal return as shown in Equation 5:

$$AR_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt}) \quad (5)$$

the coefficients $\hat{\alpha}_j$ and $\hat{\beta}_j$ are ordinary least squares estimates of α_j and β_j The CAR is then derivated by individual abnormal return for each trading day over the specified event windows and is shown in Equation 6:

$$CAR_{jt} = \sum_{-t}^{t} AR_{jt} \quad (6)$$

where the CAR_{jt} is calculated over each observation window *t* for each firm *j* Significant abnormal returns are captured using a z-score that indicate how the CAR deviates from the mean the distribution. After capturing the significant CARs, cross sectional tests through ordinary least squares regression are completed in order to determine whether bond and/or firm specific variables are a significant determinant to acquiring abnormal returns. Following Gilson and Warner (1998), I will test bond characteristics including rating of the bond, market where traded, and use of proceeds. The dependent variable in the regression will be the CAR. The independent variables will be the characteristics of the bond identified in Figure 1. While similar tests were conducted by Gilson and Warner (1998), their database included only 164 firms and the last observations were from 1994. The contribution of the research is to identify whether bond and/or firm specific variables are significant in determining a CAR. Gilson and Warner (1998) only evaluate firms that have corresponding changes in bank loan ratings within 6-months of a new issuance. The following bond characteristics will be evaluated in the regression:

- Rating – The regression analysis features the Standard and Poor's (S&P) rating over the Moody's rating in the analysis. However, both provide virtually the same end results. The rating agencies are given the responsibility of providing a rating for a new issuance in correlation to the risk of the bond. A bond with a high rating is expected to have a relatively lower stock price CAR in comparison to a bond with a low rating. The bonds used in this chapter are of S&P ratings BBB, BB and B and CCC. Bonds with a rating of "CC" or lower were not evaluated due incomplete information in the databases selected. I categorize each bond rating classification into dummy variables, grouping at the respective rating letter, but ignoring pluses and minuses.[18] In general, high-yield bonds at issuance are expected to compensate bond investors with higher risk premiums for bonds of lower credit rating. Stockholders will react negatively, given the additional risk added introduced into the capital structure, causing a negative abnormal stock return. I expect to find a positive coefficient value as a result of the regression. This will cause the negative CAR to become less negative. I also expect to find the lower the rating at issuance, the more negative the CAR given the higher level of risk taken on by the investor associated with each worsening rating category. Bonds of BBB rating are expected to have a less negative impact on the CAR than bonds rated BB and so forth through the bonds being evaluated. I hypothesize the better rating, the less negative the CAR will be. *Impact: positive variable, positive coefficient. This will reduce the amount of the negative CAR.*

[17] Gilson and Warner (1998) use variables of flexibility, implicit information and agency costs to abnormal returns surrounding issues of HYD.

[18] The dummy variable categories for all variables categorized as dummy variables are featured in Figure 1.

Figure 1. Variable Used and Data Sources

Figure 1 shows the data used and provides a brief description of the data and list the source of the data.

Title	Description	Data Source
Bond Specific		
S&P rating	Dummy variables: BBB, BB, B, CCC	SDC
Exchange	Dummy variables: NYSE, NASDAQ, AMEX	SDC
Use of Proceeds	Dummy variables: acquisition, general purpose, pmt on borrowings	SDC
	refinancing activity	SDC
Coupon Amount	Dummy variables: Fixed Coupon Amount, Floating, Variable	SDC
Callable	Dummy variables: callable bond	SDC
Yrs to Maturity	number of years til bond matures	SDC
Amount of Issue	amount of each individual issues	SDC
High-Yield Bond IBO	Dummy variable: First Time Issuer	SDC
Company Specific		
PERMNO	company identification variable	CRSP
Age at Issuance	age of firm at announcement date	CRSP
SIC Code	firm industry classification	CRSP
Total Current Assets	earned the year of the issuance ($millions)	Compustat
Total Assets	earned the year of the issuance ($millions)	Compustat
Tot Current Liabilities	earned the year of the issuance ($millions)	Compustat
Total Liabilities	earned the year of the issuance ($millions)	Compustat
EBIT	earned the year of the issuance ($millions)	Compustat
Sales	earned the year of the issuance ($millions)	Compustat
Market Specific		
Market Conditions	Dummy Variable: Bull or Bear Market	Compustat

- Exchange – The primary exchange in which the bond issuing firm participates is selected for classification. The three markets used are the American Stock Exchange (AMEX), the NASDAQ exchange and the New York Stock Exchange (NYSE). Prior academic research has shown that older and more established companies participate in the AMEX and NYSE exchanges while newer and more technology based companies participate in the NASDAQ market. Gilson and Warner (1998) show that issuing firms that participate in the NASDAQ exchange experience higher costs of issuance. I categorize each market into dummy variables in the regression to capture whether the marketplace where the issuer's equity trades is a factor over the CARs of the issue. I expect to see a positive impact on the CAR of the issue by the exchange variable. I also expect to find firms whose equity trades in the NYSE and AMEX markets to experience a more positive investor reaction than NASDAQ firms given the NYSE and AMEX markets are generally comprised of more established firms. Investors adding HYD to their portfolios purchase this type of security with the anticipation that the firm will perform at or above industry norms. A firm performing below industry level, in a competitive market, will not have the desired profitability level which will reflect in poor performance of it outstanding equity. Firms performing above their industry standard should create renewed interest in the outstanding equity by the investment community and will reflect such in their equity prices in the marketplace. I believe the pricing decision will reflect the liquidity of the firm's other debt and equity offerings and the pricing decision is partly based on this rationale. I hypothesize the better the exchange, the less negative the CAR will be. *Impact: positive variable, positive coefficient. This will reduce the amount of the negative CAR.*
- Use of Proceeds – Tests whether the use of proceeds regressed on the CAR impacts the market reaction of the bond are completed. Gilson and Warner (1998) show the intended use of proceeds by floating a new issue of HYD has an impact on the abnormal return of the issue. Companies are required at the time of registration of a new issue to report to the Securities and Exchange Commission the intended use of proceeds from the issue. I categorize each bond rating classification into dummy variables grouping at the respective use of proceeds as reported by the issuing firm. These classifications include acquisition, general purposes, payments on borrowings, refinancing and other uses. Of these classifications, only the first four classifications will have results as the other uses classification will be lost in the regression. I believe this variable will have a mixed effect on the CAR. I expect to

find a positive coefficient value in the regression results for firms issuing HYD for acquisition and general purposes. This will lower the negative CAR. Debt issued for acquisition implies capital is being issued for firm expansion and growth. Debt issued for general purposes does not clearly express its intended use although it does not send a negative signal to the investment community. Consequently, I expect to find firms issuing HYD for payments on borrowings and refinancing activities to have a negative coefficient value from the regression. This will cause the negative CAR to become more negative. Debt issued to repay previous debts can represent a negative signal by the firm to the marketplace. Historically, firm issuing HYD to pay off other bank-loans and other outstanding bonds is foreseen as a preventative measure to ward off financial distress. Investors should be more willing to purchase equity in firms who raise capital for expansion and new projects in comparison to firms that are facing a distressed position and issue HYD to solve internal capital problems. I hypothesize the more debt issued for mergers and acquisitions and general purposes rather than repayments and refinancing, the less negative the CAR will be. *Impact: (Debt issued for Acquisition and General Purposes) positive variable, positive coefficient. This will reduce the amount of the negative CAR. Impact: (Debt issued for Payments on Borrowings and Refinancing) positive variable, negative coefficient. This will increase the amount of the negative CAR.*

- Coupon Amount – Similar to their investment grade counterparts, HYD issues generally offer an investor coupon payments. These coupon payments are listed at the time of issuance, stated in a fixed value, or can be floating or variable. With floating rate bonds the coupon rate changes are benchmarked on short-term interest rates and can change multiple times per year. Variable rate coupon bonds use long-term interest rates or long-term treasuries as its benchmark for the variable rate and can only adjust once per year. Each coupon type is categorized as a dummy variable in the regression analysis. While it is widely shown in academic research bond investors require higher yield for assuming more risk, the role of the coupon payment with respect to high-yield bonds has been overlooked. The anticipated the sign of the coefficient generated from the regression is negative. This will cause the negative CAR to become more negative. High-yield bonds offer higher coupon payments to their investors compared to their investment grade counterparts. This excess coupon amount paid by issuing firms to lure investors to invest in bonds of higher risk will put excess burden on the financial performance of the firm by having to pay higher interest payments. I hypothesize bonds with a fixed coupon payment will less of an impact over the CAR than a floating or variable coupon payment. The return to the investor is a consistent amount over the life of the bond for a fixed rate coupon, where it is not when the issue is written with a floating or variable coupon amount. I also hypothesize the lower the coupon rate, the less negative the CAR will be. *Impact: positive variable, negative coefficient. This will increase the amount of the negative CAR.*
- Callable – Lee and Loughran (1997) and Fridson and Garman (1998) showed that the callability of a bond, or to retire the bond before its maturity date, adds values to the issue. The issuer can benefit from changes in the economic climate and take advantage of improved interest rate conditions by calling in existing bonds and reissuing new bonds at a lower rate. Similarly, a company may improve its credit standing which qualifies the firm to issue a higher rated bond, which can reduce its interest payments, therefore calling bonds of higher yields. A dummy variable is used to differentiate callable from non-call issues in the database.[19] I expect to find bonds that are callable will produce a positive sign in the regression equation. This is attributed to the likeliness of the issue being called and the simultaneous risk-decreasing event of holding the asset when it is called. I hypothesize that callable bonds will have a less negative CAR than non-callable bonds. *Impact: positive variable, positive coefficient. This will reduce the amount of the negative CAR.*
- Years to Maturity – The years to which the bond matures is being evaluated in order to gain a general understanding whether stockholders react more negatively to bond issued for longer horizons than shorter horizons. Bonds with a longer maturity horizon have a larger risk of default than bonds with a shorter maturity horizon. While the purchaser of the bond is being compensated with a greater default risk premium, stockholders are bearing the additional risk. This should cause the price of the stock to decrease as stockholders will recognize the firm having additional debt obligations. Even in cases where the firm is issuing a high-yield bond for refinancing purposes, in most cases either the interest payments are increased of the term of the debt structure is lengthened or both. It is this rationale that is being tested by categorizing the years to maturity of the issuance into segments using dummy variables to capture if this relationship holds true in the high-yield marketplace. I expect to find that years to maturity will have a negative impact on the CARs at issuance, i.e. the longer the years to maturity of an issue, the more impact on the CAR. I hypothesize that the shorter the term to maturity, the less negative the CAR will be. *Impact: positive variable, negative coefficient. This will increase the amount of the negative CAR.*
- Issue Amount – The amount of the issue creates a direct impact on the capital structure of the firm. The smaller the issue, the less of an impact or unbalance of the firms' existing capital structure.

Firms offering additional debt may run the risk of deviating from the industry norm capital structure and therefore limit their ability to compete in a competitive marketplace for their goods and services. I employ dummy variables in the regression to assess the impact of the issue size. I expect to find the higher the issue amount, the greater the negative reaction to the CAR. Given this rationale, I expect to find a negative sign in the regression equation from the impact of the issue amount and the effect it will have on the firms' capital structure. Stockholders will react through higher abnormal returns given higher issue amounts with respect to how the issue impacts the firms existing capital structure. I hypothesize the lower the issue amount, the less negative the CAR will be. *Impact: positive variable, negative coefficient. This will increase the amount of the negative CAR.*

- First-Time Issuers – A firm's announcement of an issuance of HYD historically has been viewed as a negative signal from management. Gilson and Warner (1998) show stockholders also react negatively to announcements of a high-yield bond IBO's through negative abnormal returns on the firm's equity. I do not expect to find this relationship holds true given the changing nature for the reason of issuance and declining default rates over time. I use a dummy variable to represent first-time issuers in the

[19] Non-callable bonds take on a value of zero while callable bonds are assigned a value of 1 in defining the dummy variables.

regression. I expect to find the coefficient of the variable to be a positive sign in the regression equation therefore lowering the amount of the abnormal return. I hypothesize when the issuer is a first-time issuer of high-yield debt, the less negative the CAR will be. *Impact: positive variable, positive coefficient. This will reduce the amount of the negative CAR.*

- Age at Issuance – The age of the firm at issuance is tested for any significant effects over the CAR. Older, more established firms should present a more stable investment opportunity than younger firms. Firms that are established over the long-term will have better information as to business trends and their respective place within their industry, and the overall marketplace compared to younger firms. Investors also have more historical information to evaluate the firm and better knowledge of firm performance given a longer history of operations for the older firms. I expect to find the age of the firm will have a positive effect, which in turn will lower the negative CAR. I hypothesize the older the issuing firm, the less negative the CAR will be. *Impact: positive variable, positive coefficient. This will reduce the amount of the negative CAR.*
- Market Conditions - Historically investors prefer equity investments when the stock markets are increasing in value and prefer debt instruments when the market takes a downturn. Fridson and Garman (1998) show HYD has characteristics that resemble an equity security where both are sensitive to market conditions. A positive economic climate will lead to increased corporate profits, rising equity prices and growing cash flows. These three factors will generally decrease default risk, which in turn will create investor demand and spark price appreciation creating a higher return. During recessionary periods, these relationships are the opposite. I use a dummy variable in the regression equation to represent market conditions. Market conditions are categorized by evaluating the closing price of the NYSE and NASDAQ to capture whether a given year provided a gain or loss in value. HYD issuances are categorized by the year of issuance. Following the prior research of Fridson and Garman (1998), I expect to find high-yield bonds issued in years of increasing stock market returns will have a negative coefficient in the regression equation. This will cause the negative CAR to become more negative. I hypothesize firms issuing high-yield debt in increasing stock markets, the less negative the CAR will be. *Impact: positive variable, negative coefficient. This will increase the amount of the negative CAR.*

The regression equation[20] after accounting for the impact of the bond characteristics will look like:

$$-abnormal\,return = +a_0 + a_1(\,rating\,) + a_2(\,exchange\,) + a_3(\,use\,of\,proceeds\,)$$
$$+a_4(\,coupon\,) + a_5(\,callable\,) + a_6(\,years\,to\,maturity\,) + a_7(\,issue\,amt\,)$$
$$+a_8(\,1st\,time\,issuer\,) + a_9(\,age\,of\,firm\,) + a_{10}(\,market\,conditions\,) + w_i \qquad (7)$$

where α_0 is the intercept and w_i is the disturbance term. The sign above the intercept terms represents the sign of the intercept as a result of the regression. The sign above the variable represents the sign of the variable in the database.

The next part of this chapter will cross-sectionally test firms with statistically significant CARs using the firm specific accounting ratios. Jain (1984) tested variables of market value and profitability to explain abnormal returns surrounding issuances of equity. Gilson and Warner (1998) used variables of flexibility, implicit information and agency costs to capture CARs and changes in bank monitoring after an issuance. Both sets of variables used by Jain (1984) and Gilson and Warner (1998) were representative of the year the debt instrument was issued. I will regress the firm specific financial ratios to capture whether firm performance is a determinant of abnormal returns. The intent of this line of testing is to determine whether HYD is being issued by firms of poor or declining performance. Investors and analysts rely on financial ratios to help predict future earnings and dividends. Similarly, these ratios will prove to be useful in determining CARs that surround an issuance. The ratios used will be normalized[21] at the general industry level (1000 SIC code level) to capture any industry effects across the data. Normalization is computed by using the ratio of the firm divided by the ratio of the industry average. The following ratios will be used in the regression equation:

- Ratio of Liquidity - the current ratio will be used to capture the firms' liquid assets, or how easily the assets of the firm can be converted to cash at fair market value. This measures whether a firm can meet its current obligations. The current ratio is calculated by dividing the firms' current assets by its current liabilities. Current assets include cash, marketable securities, accounts receivables, inventories and marketable securities. Current liabilities include accounts payable, maturities of long term debt, accrued income taxes, short-term notes payable, current maturity of long-term debt and various accrued expenses such as wages and salaries due. Firms inherently do not have negative values for their current liabilities nor current assets. This creates a positive value for a firms' current and normalized ratios. Previous literature reveals that firms that issue HYD are cash strapped or have no access to traditional financing methods. I expect to find current assets to be lower and current liabilities to be higher than firms that do not issue HYD. This will lead to the regression equation showing the normalized current ratio having a negative impact which will increase the CAR. I hypothesize the higher the firms' current ratio, the less negative the CAR will be. *Sign of the normalized ratio: positive; Impact: positive variable, positive coefficient. This will decrease the amount of the negative CAR.*
- Ratio of Asset Management – an asset management ratio is selected to capture how effectively management is managing the assets of the firm. Poor asset management proves to be unproductive

since excess inventory represents an inefficient investment, albeit with tangible goods, accounting for low or even zero

[20] The expected sign of the intercept is represented in the equation. The sign above the variables represents the expected sign of the variable.

[21] Normalization will take place by identifying the issuances of HYD by SIC code at the 1000 level. Each ratio in the analysis will be grouped by SIC code then divided by the industry average for the given ratio in the year of the issuance. After normalization, the new ration will be employed in the cross-sectional regressions.

rates of return. The total asset turnover ratio captures how effectively management oversees its assets and is derived by dividing sales by total assets. The sign of the total asset turnover and the normalized total asset turnover ratios is positive since sales and total assets do not have negative values. Firms issuing HYD should be cash strapped in part due to poor asset management. The regression results will show the normalized total assets turnover ratio contributes or increases the negative CAR. I hypothesize the higher the firms' total asset turnover ratio, the less negative the CAR will be. *Sign of the normalized ratio: positive; Impact: positive variable, positive coefficient. This will decrease the amount of the negative CAR.*

- Ratio of Debt Management – a debt management ratio will be used to determine to which extent firms are using debt financing. The debt management ratio is derived by dividing the total debts of the firm by their total assets. Total debt includes both current liabilities and total long-term debt while total assets are a measured by the summation of the firm's current and fixed assets. The expected sign of the normalized ratio is positive, albeit lower than firms that use investment grade debt in its capital structure. I expect to find and higher total liabilities and lower total assets for firms that issue HYD due to the lack of cash for investment opportunities or issuances for operating capital. These are two main reasons a firm will pursue issuances of non-investment grade debt. In addition, HYD is more expensive than investment grade debt and will also have impact on the debt management ratio. An increase in the firms' debt management ratio can prove to have a positive impact or increase the negative CAR. Stockholders may believe the firm has taken on too much debt or dampen the firms' probability of future success. I hypothesize the lower the firms' debt management ratio, the less negative the CAR will be. *Sign of the normalized ratio: positive; Impact: positive variable, negative coefficient. This will increase the amount of the negative CAR.*
- Ratio of Profitability – a ratio representing profitability or the profit margin will be used to capture the end result of management's policies and decisions. The basic earnings power ratio will be used to capture the profitability of the firm. This ratio is calculated by dividing the firms' EBIT by its total assets. By using EBIT, this will capture the earnings of the firm before the effects of interest and taxes. The expected sign of the normalized ratio is negative because many firms issue HYD issue to ward off a distress event. I expect to find low or even negative EBIT for issuing firms. That will present a negative or a slightly positive basic earning power ratio. I propose this will create a positive impact on the determination of the CAR. Stockholders purchase HYD on the likelihood of future profitability. Investors take into account the potential earnings of the firm and will reflect a sense of optimism that the earnings of the firm are expected to increase after the issuance. However, the effect of the capital infusion to the firm is unknown at the announcement of an issuance; investor optimism will be overshadowed by potential profitability loss, and create a punishing effect on the firms equity. I hypothesize the higher the firms' basic earnings power ratio is, the less negative the CAR will be. *Sign of the normalized ratio (positive ratio): positive; Impact: positive variable, positive coefficient. This will decrease the amount of the negative CAR. Sign of the normalized ratio (negative ratio): negative; Impact: negative variable, positive coefficient. This will increase the amount of the negative CAR.*

This series of cross-sectional regressions feature ordinary least squares regression and will be conducted using the normalized accounting ratios identified above. The dependent variable in the regression will be the CAR, while the independent variables will be the normalized ratios of financial performance. All variables of firm performance are extracted from the Compustat database and are representative of the year the HYD issuance is announced. The cross-sectional regressions feature ordinary least squares regression using the normalized accounting ratios identified. The regression equation[22] will be:

$$
\begin{aligned}
-abnormal\,return = &+ a_0 + a_1(\,rating\,) + a_2(\,exchange\,) + a_3(\,use\,of\,proceeds\,) \\
&+ a_4(\,coupon\,) + a_5(\,callable\,) + a_6(\,years\,to\,maturity\,) + a_7(\,issue\,amt\,) \\
&+ a_8(\,1st\,time\,issuer\,) + a_9(\,age\,of\,firm\,) + a_{10}(\,market\,conditions\,) \\
&+ a_{11}(ncurrent\,ratio) + a_{12}(ntotal\,asset\,turnover\,ratio) + a_{13}(ndebt\,ratio) \\
&+ a_{14}(nbasic\,earnings\,power\,ratio) + w_i
\end{aligned}
\tag{8}
$$

where α_0 is the intercept and w_i is the disturbance term. The sign above the intercept terms represents the sign of the intercept as a result of the regression. The sign above the variable represents the sign of the variable in the database These cross sectional tests will be performed on a firm by firm basis after taking note whether a significant CAR exists surrounding an announcement of HYD.

The last section of this chapter will include categorizing the bonds by industry classification[23] to capture any industry effects that may be prevalent with issuing debt. The testing process will be identical to the previous section, however, each industry classification will have its own regression and set of results. Current trends in debt issuance reveal that small, young firms and firms that are technology based rely on debt more heavily than older and more established firms. Analysis into this trend will reveal whether various HYD issuers grouped by industry experience more or less CARs and whether bond or firm characteristics are an indicating factor in these trends. Cross-sectional analysis will be conducted in the same manner as the previous section with one exception. The ratios used to measure liquidity, asset management, debt management and profitability will not be normalized due to the issuing firms being categorized at the 1000 SIC code level. The contribution factor is to determine whether one industry has more significant investor reaction to new issuance of HYD, and whether the industry the firm participates in is a contributing factor. I expect to find the coefficient value to be positive given the industry classification is assigned at the 1000 level. Any industry effects should be revealed by the value of the

[22] The expected sign of the intercept is represented in the equation. The sign above the variables represents the expected sign of the variable.

[23] Industry classification will be conducted at the 1000 SIC code level.

intercept. Young and technology based industries should exhibit a lower value intercept having less of a contribution factor than older, more established industries. I hypothesize the older and more established an industry, the less negative the CAR will be. *Impact: positive variable, positive coefficient. This will decrease the amount of the negative CAR.*

The regression equation[24] tested including the firms' industry classification is:

$$-abnormal\,return = +\bar{a}_0 + a_1^{+}(\,rating\,) + a_2^{+}(\,exchange\,) + a_3^{+\backslash -}(\,use\,of\,proceeds\,)$$
$$+\bar{a}_4(\,coupon\,) + a_5^{+}(\,callable\,) + a_6^{+}(\,years\,to\,maturity\,) + \bar{a}_7(\,issue\,amt\,)$$
$$+ a_8^{+}(\,1st\,time\,issuer\,) + a_9^{+}(\,age\,of\,firm\,) + \bar{a}_{10}(\,market\,conditions\,)$$
$$+\bar{a}_{11}(ncurrent\,ratio) + \bar{a}_{12}(ntotal\,asset\,turnover\,ratio) + \bar{a}_{13}(ndebt\,ratio)$$
$$+ a_{14}^{+\backslash -}(nbasic\,earnings\,power\,ratio) + a_{15}^{+}(industry\,classification) + w_i \qquad (9)$$

where α_0 is the intercept and w_i is the disturbance term. The sign above the intercept terms represents the sign of the intercept as a result of the regression. The sign above the variable represents the sign of the variable in the database

4. Evaluation and Testing

Firms issuing HYD instruments are extremely sensitive to liquidity in the high-yield marketplace. Firms using this type of debt have limited themselves to not having the ability to access the more stable bank financing which in return means they face greater problems when trying to raise capital. HYD issuing firms' performance and investment spending relies greatly on cash flow, the ability to leverage, and other balance sheet factors. This implies they are susceptible to current and future expectations toward business cycles and any changes in monetary policy by the Federal Reserve Board.

Bond issuance data is extracted from the SDC database, then matched with the firms permanent number in the CRSP database and finally cross referenced with firm specific financial information in the Compustat database. The initial database of high-yield issuances between 1985-2003 revealed 4,217 observations. After screening the database for varied bond characteristics[25] the database was downsized to 1,517 observations. The remaining 1,517 issuances were then cross-referenced with the Compustat database to find the various firm performance measures[26] to compute the firm specific performance variables which include an issuing firm's: current ratio, debt management ratio, total assets turnover ratio and the basic earnings power ratio. This left 1,186 observations with complete information. The final criterion for the database is for the firm to have a significant abnormal return over the observation period. Firms revealing a significant negative abnormal return on their equity prices surrounding an announcement of a high-yield issuance at the 95% confidence interval or better numbered 700. This provided the final database to be comprised of 700 issuances of HYD which includes 331 bond IBO's and 369 SBO's (seasoned bond offerings).

2.4.1 Sample Characteristics

2.4.1.1 Descriptive statistics

Table 1 reveals the distribution of the database and shows the 700 issuances with complete information have a value of over $120 billion. Table 1 further reveals almost half (58.40%) of the issuances are of firms that participate in the New York Stock Exchange (NYSE) followed by 31.71% of the issuances by NASDAQ participating firms. Less than 10% of the issuances used are from firms that participate in the American Stock Exchange (AMEX) or other domestic markets. Table 2 highlights each issues intended use of proceeds as listed in the SDC Database. The most popular use of newly generated proceeds were for general purposes (308), closely followed by firms retiring or refinancing bank debt (182), firms retiring or refinancing foreign debt (111). These three areas encompass roughly 86% of all issues between 1983-2003. Acquisition purposes listed as the primary reason for issuance is only 39 or 5.57% of the database. The least popular reasons to issue bonds are lumped together as other[27] in the table and represent 8.71% of the issuances.

Table 3 features the distribution of the database accounting for the various ratings of the issuances analyzed.[28] Table 3 shows of the 700 issuances that comprises the database, 44.00% or 308 are of single B rating by Standard and Poors. Bonds of BB rating are second most prevalent in the database accounting for 28.00% of the issuances. Bonds of no rating, BBB and CCC complete the database with 12.14%, 11.71% and 4.14% respectively.

[24] The expected sign of the intercept is represented in the equation. The sign above the variables represents the expected sign of the variable.

[25] Bond characteristics include coupon amount, use of proceeds, callability of the issue, the years to maturity of the issue, the S&P rating of the issue, the exchange the firm participates with its equity, whether the firm has been delisted, the use of the proceeds from the issue, and the industry code

[26] Firm variables extracted were total assets, total current assets, total liabilities, total current liabilities, earnings before interest and taxes (EBIT) and sales.

[27] This group includes stock repurchases, securities acquisition, investment in affiliates, capital expenditures, capital investment funds, working capital, capital acquisition, investment in other companies, general refinancing and secondary financing.

[28] Bonds of non-investment grade as defined by Standard and Poors are evaluated. Credit grades of BBB, BB, B, and CCC compile the sample. The database also was defined by selecting the Moody's Investor Service rating of the issue, however, the categorization of the bonds fell into the same classification level irrespective of the rating agency.

Table 1
Market Distribution of High-Yield Debt Issues 1985-2003

This table presents the market distribution of the entire sample for the issuing period between 1985-2003. The sample is categorized by the year of the issuance, the number issuances per year, the total amount issued in the bond market and the equity market in which the issuing firm participates.

Year	Number	Total Proceeds	American	NASDAQ	NYSE	Exchange Not Listed
1985	40	$1,809.7	7	13	16	4
1986	67	$3,211.7	7	29	29	2
1987	58	$3,907.4	7	30	19	2
1988	15	$2,250.6	2	4	4	5
1989	26	$2,007.7	5	11	9	1
1990	16	$2,821.3	1	3	12	0
1991	26	$4,444.0	1	3	22	0
1992	80	$12,787.5	2	12	64	2
1993	79	$15,829.6	4	29	45	1
1994	27	$3,451.3	2	8	17	0
1995	46	$8,148.7	7	17	19	3
1996	43	$8,804.2	2	15	25	1
1997	33	$6,169.4	0	14	19	0
1998	40	$10,388.0	0	9	31	0
1999	14	$5,845.0	0	3	11	0
2000	25	$11,261.5	0	10	15	0
2001	27	$8,213.0	1	7	19	0
2002	21	$5,772.5	0	4	17	0
2003	17	$4,947.6	0	1	16	0
Totals	700	$120,070.7	48	222	409	21
% of Issue		(millions)	6.86%	31.71%	58.43%	3.00%

Table 2
Distribution of High-Yield Debt Issues by Use of Proceeds

This table presents the market distribution of the entire sample for the issuing period between 1985-2003. The sample is categorized by the specified or intended use of the issuance as reported to the SEC. The sample is highlighted by year of the issuance and the reported use of proceeds.

Year	Acq Financing	General Purposes	Ref Retire Bank Debt	Retire FX Inc Debt	Other*	Total Issue
1985	7	18	10	0	5	40
1986	5	28	19	6	9	67
1987	4	29	9	4	12	58
1988	1	6	6	2	0	15
1989	1	16	7	0	2	26
1990	0	5	6	2	3	16
1991	0	9	7	8	2	26
1992	0	24	32	24	0	80
1993	4	16	24	34	1	79
1994	2	9	12	4	0	27
1995	1	18	16	6	3	43
1996	5	12	11	11	7	46
1997	3	20	7	0	3	33
1998	2	28	4	1	5	40
1999	0	12	2	0	0	14
2000	2	14	4	2	3	25
2001	1	16	4	2	4	27

2002	1	15	1	3	1	21
2003	0	13	1	2	1	17
Totals	39	308	182	111	61	700
% Issues	5.57%	44.00%	26.00%	15.86%	8.71%	
Issue Amt	6,360.4 (millions)	54,446.2 (millions)	28,651.4 (millions)	21,623.3 (millions)	9,989.4 (millions)	121,070.7 (millions)

*Other Includes: Stock Repurchases, Securities Acquisition, Investment in Affiliates, Project Financing, Capital Expenditures, Capital Investment Funds, Working Capital, Capital Acquisition, Investment in Other Companies, Refinancing and Secondary Financing

Table 3. S&P Rating of the Issuance

This table presents the distribution of the entire sample for the issuing period 1985-2003 identifying the issuances by their Standard & Poor's rating as well as the year of issuance. Panel A represents the number of issues in a given year categorized by the rating of the issue. Value represents the amount of the issuance categorized by aggregate amounts.

Panel A: Number of Issues						
Year	BBB	BB	B	CCC	NR	Total
1985	2	6	23	0	9	40
1986	5	9	31	5	17	67
1987	3	5	29	7	14	58
1988	1	3	6	2	3	15
1989	1	3	14	4	4	26
1990	3	6	7	0	0	16
1991	6	11	8	0	1	26
1992	7	33	33	1	6	80
1993	19	16	40	2	2	79
1994	6	4	16	0	1	27
1995	5	6	28	2	2	43
1996	3	19	21	0	3	46
1997	5	13	11	0	4	33
1998	4	26	7	1	2	40
1999	3	5	2	1	3	14
2000	0	9	5	2	9	25
2001	3	10	10	1	3	27
2002	4	9	7	0	1	21
2003	2	3	10	1	1	17
Total	82	196	308	29	85	700
% of Issue	11.71%	28.00%	44.00%	4.14%	12.14%	
Monetary Value						
Total	$17,896.2	$42,197.5	$49,825.2	$4,259.0	$6,892.8	$121,070.7
% of Issue	14.78%	34.85%	41.15%	3.52%	5.69%	

The monetary distribution of the sample is shown in table 3. This finds the same relationships with respect to proportionality as the number of issues based on rating for the first two most prevalent ratings. Bonds of B rating account for 41.15% of the monetary value and accounts for $49,825.3 million of the sample. Second are bonds with a rating of BB with $42,197.5 million. The monetary distribution differs from the aggregate number of issuances from here. The order if value is bonds of BBB rating followed by non-rated then CCC bonds. This trend reveals while more non-rated bonds are being issued than BBB rated bonds, the average amount of the issue is less for non-rated bonds than BBB bonds.[29] Bonds of BBB have an average amount of $218.246 million compared to non-rated bonds have an average issuance of $81.091 million.

2.4.1.2 Industry level

Table 4 shows the distribution of the sample by highlighting the industry in which the issuing firm is classified. This line of research provides descriptive statistics of the sample firms at the 1000 SIC code level.

[29] Average issue amount is computed by: (# of issues in a given credit rating / total dollar value issued with a given credit rating).

Table 4
SIC Distribution of High-Yield Debt Issuances

This table presents the market distribution of the entire sample for the issuing period between 1985-2003 identifying the issuing firms by their Standard Industry Classification as well as the Year of issuance. Panel A represents the number of issues in a given year with respect to the SIC code of the issuing firm. Panel B list the aggregate amount of the issue taking into account the Year of issuance and the SIC code.

Panel A: Number of Issues									
SIC	1000	2000	3000	4000	5000	6000	7000	8000	Total Issue
1985	1	7	11	10	3	1	6	1	40
1986	2	9	23	11	7	3	7	5	67
1987	2	14	19	5	10	0	5	3	58
1988	3	2	3	2	3	0	2	0	15
1989	4	2	8	5	4	0	1	2	26
1990	5	7	3	0	1	0	0	0	16
1991	3	4	5	4	8	0	2	0	26
1992	8	13	16	13	20	0	4	6	80
1993	7	6	22	12	14	0	14	4	79
1994	7	2	7	4	3	0	2	2	27
1995	2	5	6	12	8	0	4	6	43
1996	5	3	9	14	4	0	7	4	46
1997	6	2	8	13	3	0	1	0	33
1998	6	1	7	24	0	1	1	0	40
1999	1	2	2	5	2	0	2	0	14
2000	1	3	6	11	0	0	4	0	25
2001	2	6	4	11	1	0	2	3	29
2002	0	0	8	5	4	1	1	0	19
2003	2	1	1	6	3	0	4	0	17
Totals	67	89	168	167	98	6	69	36	700
	9.57%	12.71%	24.00%	23.86%	14.00%	0.86%	9.86%	5.14%	
Monetary Value									
Totals	$10,437.1	$12,450.0	$27,442.9	$35,942.8	$12,821.0	$856.8	$14,431.0	$6,689.1	$121,070.7
	8.62%	10.28%	22.67%	29.69%	10.59%	0.71%	11.92%	5.52%	

Appendix A includes a comprehensive list of SIC codes and the industries that participates under a given industry classification. Table 4 lists the distribution of the database from the number of issued high-yield bonds from a given industry classification. Panel A reveals firms of the Manufacturing[30] and the Transportation, Utilities and Sanitary Services issuances respectively over the period 1985 – 2003. The financial services sector (6000 sic code) is the least prevalent in the database only being represented by 6 issuances or 0.86% of the total database. This limited number is attributed to the regulation at the federal and state levels and the differences in the required reporting of financials in this industry categorization. The last part of Table 4 highlights the monetary distribution of the sample with respect to SIC code. The monetary distribution is similar to the number of issuances represented with the manufacturing sector having 32.95% of the monetary value at $39,992.9 million while the Transportation, Utilities and Sanitary Services sector accounts for $35,942.8 million or 29.69% of the value represented in the database. The Financial Services sector again is represented with the lowest monetary value at $856.8 million or 0.71% of the total monetary value of the sample. The total monetary value represented in the database is just a bit over $121 billion.

2.4.2 Stock Price Impact

The contribution of the research is to capture the investor reaction that surrounds the announcement of an issuance of HYD. Gilson and Warner (1998) capture investor reactions through the use of event study methodology featuring a market model in an attempt to capture abnormal stock returns around announcements of HYD issues. They use a database of 164 stocks encompassing the NYSE, NASDAQ and the American stock markets. They found a mean CAR of -0.8% for both the (-1,1) and the (0,+1) event date windows. Furthermore they showed that firms issuing HYD for the first time experience a mean CAR of -0.11% for both the (-1,1) and the (0,+1)

[30] includes both the 2000 and 3000 SIC code issuances

event windows. It is along these lines that provided the motivation to run event studies to capture the CARs over a database of 700 HYD issuances.

IBO's with the other half of the issuances are being issued by firms that have previously issued a high-yield debt. The tests show stockholders negatively react to announcements of HYD in four of the five event windows tested for all bonds in the database.

2.4.2.1 General sample – CARs

Table 5 summarizes the results of the event studies over the database as well as accounting for if the firm is a first-time issuer of HYD. It is shown here that roughly half of the issuances in the database are bond

Table 5
Cumulative Abnormal Returns for High-Yield Bond Issuing Firms
Based on Current Position and Number of High-Yield Issuances

Cumulative abnormal return for high-yield debt issuing firms over the period 1985-2003. Day zero in the observation windows are represented as the day of the announcement for a new issuance of high-yield debt. The sample of high-yield bonds is compiled from the SDC database while the cumulative abnormal return is calculated using the Center for Research in Security Prices (CRSP) database. Announcements of new issuance are categorized by the entire sample, a firms current status as operational or being delisted and whether a firm is issuing its first high-yield debt or has multiple high-yield issues over the observation window.

Event Window	1-day (0,1)	3-day (-1,1)	5-day (-2,2)	7-day (-3,3)	9-day (-4,4)	11-day (-5,5)
All Bonds (n=700)	-0.44% *-0.011*	-0.75% *-1.973**	-0.59% *2.702***	-0.74% *3.312****	-0.87% *2.819***	-0.93% *3.599****
First-Time Issuers (n=331)	-0.71% - *3.302****	-1.06% - *3.760****	-1.27% *-3.070***	-1.53% *-2.783***	-1.86% - *3.195****	-1.94% *-3.062***
Non-First Time Issuers (n=369)	-0.20% *3.057***	-0.47% *0.804*	0.02% *6.548****	-0.03% *7.115****	0.02% *6.826****	-0.01% *7.769****

* significant at .05 ** significant at .01 *** significant at .001

The level of significant reaction varied from -0.75% at the 3-day window to -0.93% at the 11-day window with a significance level of 95% over the three, five, seven, nine and 11 day event windows.[31] The second group of tests in this series evaluates firms that issue HYD for the first time compared to firms that issued multiple times.[32] First-time HYD issuing firms faced sharply more negative reaction than multiple issuers. The event study finds stockholders punish first time issuers in all event windows from a range of –0.71% in the 1-day window to –1.94% in the 11-day window. Multiple time issuing firms also exhibit negative investor reaction but not nearly as severe. Significant reaction at the 95% confidence level varies from –0.01% to –0.20% in the 1,5,7,9 and 11-day windows while the 3 day window finds no significant reaction.

2.4.2.2 Industry CARs

Each issuance of HYD is separated by their respective SIC codes at the 1000-level for analysis to capture industry specific investor reaction to new issuances. Table 6 shows the results of the event studies conducted at the 1000 SIC code level. HYD issued by firms with SIC codes of 1000 and 7000 revealed no significant abnormal returns. Firm activities in the 1000 SIC code includes Mining and Construction, while the 7000 SIC code includes the Services industry.[33] Appendix A provides a complete industry list of each business type and its respective general classification.

The 2000 and 3000 SIC codes represent the manufacturing sector. Table 6 shows 89 firms within the 2000 SIC code and 168 firms within the 3000 SIC code. Firms within the 2000 SIC code had significant investor reactions to new issuances of HYD at the 3,7,9 and 11-day event windows. Negative significant abnormal returns ranging from –1.02% at the 3-day window to –1.76% at the 11-day window were found at the 95% confidence level. The 5-day window had significant abnormal returns at the 90% confidence level. The 3000 SIC code firms revealed negative significant abnormal returns over all windows tested with reaction ranging from -0.06% to –0.54%.

[31] The table lists testing windows in actual days before and after a given announcement of an issuance. For example, the (-1,1) day window represents three trading days, the day before the announcement, the day of the announcement and the day following an announcement.

[32] The SDC database has each observation marked whether the issuance is the first for a particular firm.

[33] The services industry is represented by forms of both 7000 and 8000 SIC codes. While the 7000 SIC code firms revealed no significant abnormal returns, the 8000 SIC code did reveal negative reaction to new issuances. The 7000 SCI code is comprised on consumer service firms while the 8000 SIC code is comprised of social service firms.

The 167 4000 SIC code firms, or those with the Transportation, Communications, Electric, Gas and Sanitary Services classification, exhibited significant abnormal returns over the 3 and 5-day windows with losses of –0.52% and –1.10% respectively. Additionally, the 7 and 9-day windows had abnormal returns significant at the 90% confidence level. The 98 5000 SIC code firms, or those with the Wholesale and Retail Trade classification, have significant abnormal returns in all testing windows except the 5-day window. The level of underperformance over the significant windows ranged form –1.02% at the 3-day window to –2.38% at the 11-day window. The 6 6000 SIC code firms, or those with the Finance, Insurance, and Real Estate classification, had 1 and 3-day window negative significant abnormal returns of –0.87% and –1.47%, respectively.

Table 6: Cumulative Abnormal Returns for High-Yield Bond Issuing Firm's Stock Exchange where Firm's Equity Trades

Cumulative abnormal return for high-yield debt issuing firms over the period 1985-2003. Day zero in the observation windows are represented as the day of the announcement for a new issuance of high-yield debt. The sample of high-yield bonds is compiled from the SDC database while the cumulative abnormal return is calculated using the Center for Research in Security Prices (CRSP) database. Announcements of new issues are categorized by the standardized industry code (SIC Code) of the issuing firm.

Event Window	1-day (0,1)	3-day (-1,1)	5-day (-2,2)	7-day (-3,3)	9-day (-4,4)	11-day (-5,5)
SIC Code 1000 (n=67)	0.34% *1.052*	0.35% *1.195*	0.03% *0.567*	0.59% *1.167*	0.17% *0.578*	0.15% *0.17*
2000 (n=69)	-0.42% *-0.978*	-1.02% *-2.098**	-0.32% *-1.351*	-1.21% *-2.165**	-1.61% *-2.023**	-1.76% *-1.762**
3000 (n=168)	-0.37% *4.742****	-0.54% *2.689***	-0.14% *10.221****	-0.33% *10.714****	0.08% *10.151****	-0.06% *11.601****
4000 (n=167)	-0.25% *-1.262*	-0.52% *-1.787**	-1.10% *-2.427***	-0.93% *-1.398*	-1.07% *-1.448*	-0.75% *-1.06*
5000 (n=98)	-1.02% *-2.671***	-1.50% *-3.230****	-0.62% *-1.151*	-1.55% *-1.875**	-1.95% *-2.088**	-2.38% *-2.426***
6000 (n=6)	-0.87% *-2.457***	-1.47% *-2.379***	-0.58% *-0.752*	-0.92% *-0.616*	-2.16% *-0.605*	-2.86% *-0.637*
7000 (n=69)	-0.74% *-0.663*	-0.94% *-0.782*	-0.48% *0.099*	-0.08% *0.467*	-0.03% *0.822*	0.16% *1.049*
8000 (n=36)	-0.99% *-1.63*	-1.64% *-1.992**	-2.33% *-2.387***	-2.14% *-1.909**	-2.97% *-2.288**	-3.56% *-2.517***

* significant at .05 ** significant at .01 *** significant at .001

The 69 7000 SIC code firms had no significant abnormal returns. The 36 8000 SIC code firms, or those with Health, Legal, Educational and Social Services classification had a negative investor reaction to new issuances of HYD over all testing windows. The 1-day window does show negative significant abnormal returns but only at the 90% confidence level The remaining test windows (3,5,7,9,11-days) all reveal significant abnormal returns ranging from –1.64% to –3.56%.

The results of the event studies reveal stockholders do react negatively to new issuances of HYD, with the size and significance of the reaction depending on the SIC code classification of the issuances. In general, stockholders react negatively to new issuances of HYD by reducing the returns of the firms' equity surrounding the announcement of an issuance by nearly 1%. The tests further reveal stockholders exhibit a more negative reaction to issuances by firms in the 8000 SIC code (social services) industry than any other industry classification. In contrast, stockholders have no significant reaction to firms issuing HYD in the 1000 (mining and construction) and 7000 (consumer services) SIC classifications. Attempts to explain investor reaction to new issuances of HYD through negative abnormal returns are investigated further.

2.4.3 Regression Results

2.4.3.1 General sample

The first in the series of regressions uses the abnormal return as the dependent variable, and several explanatory variables which include: the coupon type, the amount of the issuance, whether the issuance is callable or not, the years to maturity of the issuance,

the rating of the issue as categorized by S&P, the exchange where the equity of the issuer participates, whether the firm is a first time issuer of HYD, the intended use of the proceeds from the issue, and whether the equity market is in a bull or bear state at the time of issuance. Table 7 shows the results of the regression analysis using the 1, 3,5,7,9 and 11-day event windows surrounding an announcement of a debt issuance.

The regression tests confirm some of the earlier hypothesis by revealing variables that prove to be significant[34] in determining the abnormal return that surrounds an announcement of a HYD issuance. The first regression analysis (Equation 6) reveals that several variables are statistically significant in determining an abnormal return. These include: the length of the issue, the age of the firm, issue amount, the rating of the issue and whether a firm is a first time issuer. While these test variables prove to be significant, the coupon amount, the exchange where the firms equity trades, the use of proceeds, callability of the issue and market conditions do not have a significant impact on the abnormal return surrounding an announcement of a high-yield bond issuance in the event windows tested.

Variables shown to be significant occur in all the event windows tested. In the 1-day window, which evaluates the announcement day as day zero and the first day after the announcement, it is learned that the age of the firm at issuance and bonds rated BBB, BB and CCC are significant in explaining the abnormal return. The 1-day window revealed an R^2 of .5300 with an adjusted R^2 of .5147 or roughly 53% of the variation explained by the regression equation. The 3-day event window with an R^2 of .5117 (adjusted R^2 of .4958) captures the day before the announcement of an issuance, the announcement day and the day prior to the announcement. The age of the firm at issuance and bonds of CCC rating are no longer found to be significant in this window. Bonds of CCC rating are no longer found to have a significant impact over abnormal return for the remaining observation windows. Variables revealing statistical significance in the 3-day window include the length of the issue, and bond with a BBB or BB rating. The 5-day[35] window (R^2 of .4880) has the same relationships as the 3-day window with one inclusion; bonds of a B rating have a statistical significance.

Beginning with the 7-day event window (R^2 of .4319) and continuing into the 11-day window (R^2 of .4245), the level of variation explained by the regression equation begins to weaken. However, a few new variables show significance in explaining the abnormal return. The 7-day and the 9-day window reveal the same significant variables. The length of the issue, the age of the firm and the issue amount are found to reveal significance along with bonds of BBB, BB and B ratings. The final observation window, or the 11-day observation period has the same relationships as the 7 and 9-day windows with one inclusion. First-time issuers show significance in this window, although this is the only incidence of this variable of the event windows tested.

Section 4 provides an explanation of the variables used in the regression and their believed impact over the abnormal return. The results in table 7 are the first in a series of regression results. The regression results show that the years to maturity and the age of the firm at issuance have a positive coefficient value as predicted, with both being statistically significant in determining an abnormal return. The exchange where the firms' equity trades and whether the issue is callable both have a positive coefficient as predicted, but are not statistically significant in determining a CAR. Variables revealing a positive coefficient value when multiplied with a positive valued variable will lower the amount of the CAR. The amount of the issue retains its predicted intercept (negative) in the regression results, and is significant in determining a CAR. The coupon amount and whether the market is in a bull or bear state both have a negative coefficient as predicted, but are not of statistically significant in determining a CAR. Variables revealing a negative coefficient value when multiplied with a positive valued variable will increase the amount of the CAR.

The final variables tested in this regression (Equation 6) have mixed results to their impact on the CAR. The rating of the issue results show bonds of a rating of BBB, BB and B all have a positive coefficient value which will result in a positive impact over the CAR. Bonds of CCC rating have a negative coefficient value. Bonds issued with a CCC rating will increase the negative CAR. The use of proceed variables also reveal mixed results. Bonds issued for acquisition, general purposes and payments on loans have mixed or changing signs throughout the observation windows. Bonds issued for refinancing have the same sign (negative) for its intercept over the observation window. Both of these variable categories are shown to be not significant in determining an abnormal return. The final variable with mixed results identifies first-time issuers. This variable has a negative intercept value in the 1-day window and a positive intercept value over the rest of the sample.

2.4.3.2 Inclusion of firm specific ratios

The next series of regressions includes variables of firm performance. Here it will be answered whether an abnormal return can be partially explained by the financial performance of the firm. It is routine for investors and analysts to rely on financial ratios to help predict future earnings and dividends. This line of testing includes various ratios of financial

[34] Test of significance are evaluated at the 95% confidence level or above. Variables testing significant are at the 95% confidence level or above.

[35] 5-day window tests the two days before and after the announcement date as well as the announcement date.

performance to identify significance in determining CARs that surround an issuance of HYD. Issuing firms' current, total asset turnover, debt and basic earning power ratios are used in this series of regression tests.

Table 7

Regression Relating the Cumulative Abnormal Return Surrounding an Announcement of a High-Yield Debt Issuance to Bond and Firm Specific Characteristics

The ordinary least squares cross-sectional regression of the cumulative abnormal return is tested surrounding the announcement of a high-yield debt issuance ion a variety of test windows that include the announcement date to the first day after the announcement (0,1) to a range of 5 days before and after the announcement (-5,5) or an 11-day window. Coupon amount is a dummy variable that is categorized based on a fixed, floating or variable amount. Amount of Issuance is a variable based on the size of the issue with respect to dollar amount. The Years to maturity classification distinguishes the issuances by the number of years from issuance the bond will mature. The rating of issue takes a dummy variable format and takes into account the issues Standard and Poor's rating. Age of the firm at issuance is analyzed while a dummy variable is used to for callable bonds in nature. The exchange in which the issuing firms equity trades at time of issuance is represented by dummy variables. A dummy variable is used to identify a firm issuing high-yield debt for the first time is of any significance. A dummy variable is used to determine if market conditions has any effect on the cumulative abnormal return. The use of proceeds is represented with dummy variables noting the issuing firms reported use of proceeds form the issue. The numbers in parentheses are the p-values.

Window	1-Day	3-Day	5-Day	7-Day	9-Day	11-Day
Variable						
Intercept	**-0.0652820**	**-0.0782600**	**-0.1056560**	**-0.1171550**	**-0.1320630**	**-0.1533090**
	[.000]	**[.000]**	**[.000]**	**[.000]**	**[.000]**	**[.000]**
Length of Issue						
Years to Maturity	0.0002425	**0.0004094**	**0.0005564**	**0.0008456**	**0.0007945**	**0.0008969**
	[.075]	**[.013]**	**[.024]**	**[.009]**	**[.015]**	**[.019]**
Age						
Firm Age at Issue	**0.0002080**	0.0001873	0.0002362	**0.0005490**	**0.0005599**	**0.0007953**
	[.040]	[.127]	[.199]	**[.025]**	**[.023]**	**[.006]**
Issue Amount						
Amount of Issue	-0.0000092	-0.0000070	-0.0000112	**-0.0000251**	**-0.0000245**	**-0.0000428**
	[.051]	[.221]	[.187]	**[.026]**	**[.031]**	**[.001]**
Coupon Amount						
Fixed Amount	-0.0065076	-0.0096677	-0.0053649	-0.0106010	-0.0070699	-0.0113830
	[.187]	[.105]	[.546]	[.367]	[.550]	[.413]
Floating	-0.0094699	-0.0105110	-0.0060456	-0.0093913	-0.0118030	-0.0094362
	[.109]	[.142]	[.570]	[.504]	[.404]	[.570]
Variable	-0.0083410	**-0.0150710**	-0.0049640	-0.0047975	-0.0108680	-0.0104890
	[.175]	**[.043]**	[.654]	[.744]	[.462]	[.545]
Standard and Poor's' Rating of the Issue						
BBB	**0.0149690**	**0.0143070**	**0.0236370**	**0.0296500**	**0.0322610**	**0.0354130**
	[.000]	**[.001]**	**[.000]**	**[.001]**	**[.000]**	**[.001]**
BB	**0.0094285**	**0.0099188**	**0.0226570**	**0.0309730**	**0.0297990**	**0.0401160**
	[.002]	**[.008]**	**[.000]**	**[.000]**	**[.000]**	**[.000]**
B	0.0028187	0.0061829	**0.0098323**	**0.0182730**	**0.0158310**	**0.0210660**
	[.303]	[.061]	**[.047]**	**[.005]**	**[.016]**	**[.006]**
CCC	**-0.0104870**	-0.0032921	-0.0031507	-0.0015441	-0.0131380	-0.0103980
	[.026]	[.561]	[.709]	[.890]	[.243]	[.432]

Table 7 continued

Standard and Poor's' Rating of the Issue						
BBB	**0.0149690**	**0.0143070**	**0.0236370**	**0.0296500**	**0.0322610**	**0.0354130**
	[.000]	**[.001]**	**[.000]**	**[.001]**	**[.000]**	**[.001]**
BB	**0.0094285**	**0.0099188**	**0.0226570**	**0.0309730**	**0.0297990**	**0.0401160**
	[.002]	**[.008]**	**[.000]**	**[.000]**	**[.000]**	**[.000]**
B	0.0028187	0.0061829	**0.0098323**	**0.0182730**	**0.0158310**	**0.0210660**
	[.303]	[.061]	**[.047]**	**[.005]**	**[.016]**	**[.006]**
CCC	**-0.0104870**	-0.0032921	-0.0031507	-0.0015441	-0.0131380	-0.0103980
	[.026]	[.561]	[.709]	[.890]	[.243]	[.432]

Exchange where Firms' Equity Trades						
NYSE	0.0091268	0.0018057	0.0047870	0.0111350	0.0067776	0.0101430
	[.117]	[.797]	[.647]	[.422]	[.626]	[.535]
NASDAQ	0.0061875	0.0007552	0.0041780	0.0057923	0.0100300	0.0133370
	[.217]	[.901]	[.644]	[.628]	[.403]	[.344]
AMEX	0.0075849	0.0077587	0.0035747	0.0069582	0.0105440	0.0161000
	[.142]	[.214]	[.700]	[.572]	[.394]	[.268]
Use of Proceeds						
Acquisition	0.0040296	0.0074548	-0.0026539	-0.0148470	-0.0178440	-0.0112350
	[.505]	[.308]	[.807]	[.301]	[.217]	[.508]
General Purposes	0.0004249	0.0050966	-0.0075867	-0.0228560	-0.0227470	-0.0161780
	[.934]	[.413]	[.413]	[.062]	[.065]	[.263]
Payment on Loans	-0.0046747	-0.0029763	-0.0200820	-0.0247510	-0.0226900	0.0076508
	[.556]	[.757]	[.160]	[.191]	[.234]	[.733]
Refinancing	-0.0007455	0.0064487	-0.0050897	-0.0134880	-0.0204580	-0.0117750
	[.885]	[.302]	[.583]	[.272]	[.097]	[.416]
Callability of the Issuance						
CALLLIST	0.0025931	0.0024248	0.0050513	0.0078518	0.0064305	0.0043358
	[.201]	[.319]	[.163]	[.102]	[.184]	[.446]
Market Conditions						
Bull Market	-0.0007138	-0.0009163	-0.0033302	-0.0033259	-0.0051484	-0.0025580
	[.715]	[.698]	[.344]	[.476]	[.272]	[.642]
Number of Issuances						
First-time Issuer	-0.0003586	0.0015593	0.0031734	0.0043725	0.0069142	**0.0109340**
	[.832]	[.446]	[.298]	[.278]	[.088]	**[.022]**
R-squared	0.5300260	0.5117150	0.4880460	0.4319750	0.4452990	0.4245910
Adjusted	0.5147530	0.4958470	0.4714090	0.4135160	0.4272740	0.4058920
observations	700	700	700	700	700	700

All ratios are normalized[36] at the general industry level to capture any industry effects across the data. The testing windows used in this series of test are the same in the previous section.

Table 8 reveals the results from the inclusion of firm ratios into the regression analysis (Equation 7) with the same variables used in the previous regression test. It is here the test results show a slightly increased measure of R^2. In the 1,3 and 5-day windows, the R^2 is .5335, .5158 and .4937 respectively compared to .5300, .5117 and .4880 over the same testing windows. This trend continues over the entire series of regressions when comparing them to the previous series of regressions. The 1-day window finds the age of the firm and bonds of BBB, BB and CCC rating to be of significance as found with the earlier results. The length of the issue, the amount of the issue, and a firm's total asset turnover ratios are also shown to be significant when accounting for firm performance in the regression equation. In the 3-day event window, the length of the issue, a variable coupon amount, binds rated BBB and BB and the total asset turnover ration are found to have significance. The 5-day event window has similar results as the 3-day window except in one instance. In this window the total asset turnover ratio loses its significance while the current ratio is proven to be a significant variable. The 7-day and 9-day event windows find the same variables significant in determining a CAR. Variables identifying years to maturity, the age of the firm at issuance, issue amount and bonds rated BBB, BB and B are represented in both sample windows. The 11-day event window has the same relationships as the 7and 9-day windows with one inclusion. The firms issuing a high-yield bond for the first time are found to have significance.

The impact of the variables tested over the CAR is determined by the sign of the variables as well as the sign of the intercept. The relationships identified and the impact of the variables on the cumulative return in Table 7 remained throughout Table 8. Four new variables are tested in Equation 7 with the results listed in Table 8. These variables are normalized measures of firm performance and include the current, total asset turnover, basic earnings power and a ratio of debt management. All four variables of firm performance have varied signs of the intercept over the observation windows tested. Only the current and the total assets turnover ratios reveal significance in determining a CAR.

[36] Normalization will take place by identifying the issuances of HYD by SIC code at the 1000 level. Each ratio in the analysis will be grouped by SIC code then divided by the industry average for the given ratio in the year of the issuance. After normalization, the new ratio will be employed in the cross-sectional regressions.

Table 8

Regression Relating the Cumulative Abnormal Return Surrounding an Announcement of a High-Yield Debt Issuance to Bond and Firm Specific Characteristics Including Normalized Ratios of Firm performance

The ordinary least squares cross-sectional regression of the cumulative abnormal return is tested surrounding the announcement of a high-yield debt issuance ion a variety of test windows that include the announcement date to the first day after the announcement (0,1) to a range of 5 days before and after the announcement (-5,5) or an 11-day window. Coupon amount is a dummy variable that is categorized based on a fixed, floating or variable amount. Amount of Issuance is a dummy variable based on the size of the issue with respect to dollar amount. The Years to maturity dummy classification distinguishes the issuances by the number of years from issuance the bond will mature. The rating of issue takes a dummy variable format and takes into account the issues Standard and Poor's rating. Age of the firm at issuance is analyzed while a dummy variable is used to for callable bonds in nature. The exchange in which the issuing firms equity trades at time of issuance is also represented by dummy variables. A dummy variable is used to identify whether a firm issuing high-yield debt for the first time is of any significance. A dummy variable is used to determine whether market condition has any effect on the cumulative abnormal return. The use of proceeds is represented with dummy variables noting the issuing firms reported use of proceeds from the issue. Normalized ratios of firm performance are used to capture if firm performance is a determinant of a cumulative abnormal return while the normalization of the variable will remove any industry effects. The number in parentheses are the p-values.

Window	1-Day	3-Day	5-Day	7-Day	9-Day	11-Day
Variable						
Intercept	**-0.0634210**	**-0.0797810**	**-0.0954420**	**-0.1057420**	**-0.1279460**	**-0.1399700**
	[.000]	**[.000]**	**[.000]**	**[.000]**	**[.000]**	**[.000]**
Length of Issue						
Years to Maturity	**0.0002959**	**0.0004741**	**0.0005192**	**0.0007570**	**0.0007318**	**0.0008078**
	[.032]	**[.005]**	**[.037]**	**[.022]**	**[.028]**	**[.038]**
Age						
Firm Age at Issue	**0.0002471**	0.0002146	0.0001862	**0.0005114**	**0.0005101**	**0.0007709**
	[.017]	[.086]	[.319]	**[.040]**	**[.042]**	**[.009]**
Issue Amount						
Amount of Issue	**-0.0000099**	-0.0000075	-0.0000112	**-0.0000250**	**-0.0000244**	**-0.0000430**
	[.036]	[.188]	[.190]	**[.027]**	**[.032]**	**[.001]**
Coupon Amount						
Fixed Amount	-0.0063638	-0.0094669	-0.0075729	-0.0124450	-0.0088317	-0.0132250
	[.198]	[.114]	[.395]	[.292]	[.458]	[.344]
Floating	-0.0097792	-0.0103320	-0.0080114	-0.0112810	-0.0127260	-0.0115060
	[.098]	[.150]	[.452]	[.424]	[.370]	[.490]
Variable	-0.0086382	**-0.0152860**	-0.0048444	-0.0050545	-0.0111980	-0.0109660
	[.160]	**[.040]**	[.662]	[.731]	[.450]	[.528]

Table 8 continued

Standard and Poor's' Rating						
BBB	**0.0146940**	**0.0144790**	**0.0211760**	**0.0276520**	**0.0312320**	**0.0332800**
	[.000]	**[.001]**	**[.001]**	**[.002]**	**[.000]**	**[.001]**
BB	**0.0095916**	**0.0098311**	**0.0209690**	**0.0303750**	**0.0290840**	**0.0398260**
	[.002]	**[.009]**	**[.000]**	**[.000]**	**[.000]**	**[.000]**
B	0.0026752	0.0056209	0.0090041	**0.0188320**	**0.0157910**	**0.0219930**
	[.334]	[.094]	[.073]	**[.005]**	**[.018]**	**[.005]**
CCC	**-0.0111110**	-0.0045226	-0.0014278	0.0013702	-0.0113770	-0.0071331
	[.019]	[.429]	[.867]	[.903]	[.317]	[.593]
Exchange where Firms' Equity Trades						
NYSE	0.0096000	0.0027884	0.0033327	0.0090855	0.0058840	0.0080288

	[.099]	[.692]	[.750]	[.513]	[.673]	[.624]
NASDAQ	0.0058617	0.0008189	0.0035898	0.0049307	0.0093952	0.0121570
	[.242]	[.893]	[.692]	[.681]	[.436]	[.390]
AMEX	0.0069805	0.0074337	0.0024306	0.0062182	0.0103810	0.0152190
	[.176]	[.234]	[.794]	[.615]	[.403]	[.296]
Use of Proceeds						
Acquisition	0.0045094	0.0075442	-0.0028906	-0.0149060	-0.0184460	-0.0111230
	[.455]	[.302]	[.790]	[.300]	[.203]	[.512]
General Purposes	0.0012556	0.0054386	-0.0068604	-0.0223110	-0.0228700	-0.0153350
	[.808]	[.383]	[.459]	[.070]	[.064]	[.290]
Payment on Loans	-0.0044731	-0.0037177	-0.0199290	-0.0233640	-0.0228860	0.0095225
	[.573]	[.699]	[.163]	[.218]	[.232]	[.672]
Refinancing	0.0002221	0.0068254	-0.0051028	-0.0133180	-0.0209900	-0.0111760
	[.966]	[.276]	[.582]	[.279]	[.090]	[.442]
Callable Issue						
CALLLIST	0.0022286	0.0023128	0.0046936	0.0075392	0.0067480	0.0038925
	[.273]	[.344]	[.197]	[.118]	[.166]	[.496]
Market Conditions						
Bull Market	-0.0008343	-0.0012587	-0.0014793	-0.0017235	-0.0041326	-0.0009856
	[.674]	[.600]	[.679]	[.717]	[.387]	[.860]
Number of Issuances						
First-time Issuer	-0.0004204	0.0014789	0.0031312	0.0043592	0.0068151	**0.0108810**
	[.803]	[.469]	[.303]	[.280]	[.093]	**[.023]**
Normalized Ratios of Firm Performance						
Current	-0.0002474	0.0000485	**-0.0013058**	-0.0009478	-0.0001022	-0.0009509
	[.464]	[.906]	**[.033]**	[.242]	[.900]	[.319]
Total Asset Turnover	**-0.0018717**	**-0.0020339**	0.0014954	0.0025261	0.0016709	0.0022480
	[.012]	**[.024]**	[.263]	[.154]	[.350]	[.284]
Basic Earnings Power	-0.0001001	0.0000833	0.0005516	0.0002345	0.0007163	0.0001796
	[.644]	[.751]	[.159]	[.652]	[.171]	[.770]
Debt	-0.0009344	0.0020170	-0.0049371	-0.0081707	-0.0030156	-0.0100600
	[.685]	[.471]	[.236]	[.137]	[.585]	[.121]
R-squared	0.5355760	0.5158100	0.4937000	0.4355960	0.4475870	0.4275590
Adjusted	0.5176340	0.4971040	0.4741400	0.4137910	0.4262460	0.4054440
observations	700	700	700	700	700	700

2.4.3.3 Industry speaking

The final series of cross-sectional regression tests categorizes each issuing firm by the industry they participate as indicated by their respective SIC code. These tests use a firms' industry classification to capture any industry effects that may be prevalent with issuing debt. Appendix A is a descriptive list of the Standardized Industry Classification (SIC Code) codes.[37] Tests taking into consideration a firms' industry code explained the greatest amount of variation in the regression equation (Equation 8). Table 9 reveals the results of this line of testing. The R^2 when including a variable to identify the firms' industry classification ranges from .5429 in the 1-day event window to .4402 in the 11-day window. This compares to a range of .5300 to .4254 in the first series of regressions which does not take into account firm ratios or industry characteristics.

Table 9 shows the results of the regression using Equation 8 which includes categorizing the firm by it's SIC code. The age of the firm, amount of the issue and bonds rated BBB, BB and CCC are shown to have statistical significance in the 1-day window while the length of the issue and bonds with a rating of BBB, BB and B are significant in the 3-day window test. The test over the 5-day window shows the length of the issue, bonds of BBB and BB rating and the current and debt management ratios have significance. The last three windows tested (7-day, 9-day and 11-day event windows) have very similar results. The length of the issue is significant in the 7-day and 11-day windows with the age of the firm at issuance and

[37] Firms of the 2000 and 3000 SIC are tested as industries in the same classification. Service industries categorized at 7000 or 8000 SIC code firms are grouped together for testing purposes as well.

Table 9
Regression Relating the Cumulative Abnormal Return Surrounding an Announcement of a High-Yield Debt Issuance to Bond and Firm Specific Characteristics that Include the Issuing Firms Standardized Industry Classification

The ordinary least squares cross-sectional regression of the cumulative abnormal return is tested surrounding the announcement of a high-yield debt issuance ion a variety of test windows that include the announcement date to the first day after the announcement (0,1) to a range of 5 days before and after the announcement (-5,5) or an 11-day window. Coupon amount is a dummy variable that is categorized based on a fixed, floating or variable amount. Amount of Issuance is a dummy variable based on the size of the issue with respect to dollar amount. The Years to maturity dummy classification distinguishes the issuances by the number of years from issuance the bond will mature. The rating of issue takes a dummy variable format and takes into account the issues Standard and Poor's rating. Age of the firm at issuance is analyzed while a dummy variable is used to for callable bonds in nature. The exchange in which the issuing firms equity trades at time of issuance is also represented by dummy variables. A dummy variable is used to identify whether a firm issuing high-yield debt for the first time is of any significance. A dummy variable is used to determine whether market condition has any effect on the cumulative abnormal return. The use of proceeds is represented with dummy variables noting the issuing firms reported use of proceeds from the issue. Normalized ratios of firm performance are used to capture if firm performance is a determinant of a cumulative abnormal return while the normalization of the variable will remove any industry effects. Dummy variables representing the issuing firms SIC code are included to test for any industry effect over the cumulative abnormal return. P-values are in brackets.

Window	1-Day	3-Day	5-Day	7-Day	9-Day	11-Day
Variable						
Intercept	**-0.0744800** **[.000]**	**-0.0830950** **[.000]**	**-0.0947890** **[.000]**	**-0.0775470** **[.014]**	**-0.1192550** **[.000]**	**-0.1259930** **[.001]**
Length of Issue						
Years to Maturity	0.0002667 [.055]	**0.0004250** **[.012]**	**0.0004927** **[.050]**	**0.0007043** **[.034]**	**0.0006662** **[.045]**	0.0007215 [.064]
Age						
Firm Age at Issue	**0.0002162** **[.039]**	0.0001786 [.162]	0.0002348 [.217]	**0.0005532** **[.029]**	**0.0005101** **[.045]**	**0.0008280** **[.005]**
Issue Amount						
Amount of Issue	**-0.0000109** **[.022]**	-0.0000083 [.154]	-0.0000133 [.123]	**-0.0000271** **[.018]**	**-0.0000263** **[.022]**	**-0.0000461** **[.001]**
Coupon Amount						
Fixed Amount	-0.0056918 [.249]	-0.0089295 [.138]	-0.0056588 [.526]	-0.0112430 [.341]	-0.0071955 [.544]	-0.0125600 [.367]
Floating	-0.0094405 [.111]	-0.0100920 [.162]	-0.0050203 [.638]	-0.0087121 [.537]	-0.0095890 [.499]	-0.0082754 [.618]
Variable	-0.0061518 [.320]	-0.0139630 [.064]	-0.0040383 [.718]	-0.0047572 [.748]	-0.0091004 [.541]	-0.0124200 [.476]
Standard and Poor's' Rating						
BBB	**0.0164550** **[.000]**	**0.0154980** **[.001]**	**0.0206430** **[.002]**	**0.0279310** **[.002]**	**0.0309070** **[.000]**	**0.0312550** **[.003]**
BB	**0.0106930** **[.001]**	**0.0102220** **[.008]**	**0.0195170** **[.001]**	**0.0294460** **[.000]**	**0.0277550** **[.000]**	**0.0369820** **[.000]**
B	0.0041143 [.139]	**0.0067296** **[.047]**	0.0096729 [.055]	**0.0192520** **[.004]**	**0.0164120** **[.014]**	**0.0216580** **[.006]**
CCC	**-0.0097356** **[.040]**	-0.0035668 [.536]	-0.0011775 [.890]	0.0031507 [.780]	-0.0089528 [.430]	-0.0056201 [.673]
Exchange where Firms' Equity Trades						
NYSE	0.0101940 [.082]	0.0024068 [.736]	0.0025619 [.809]	0.0086308 [.538]	0.0056282 [.689]	0.0059064 [.720]
NASDAQ	0.0049793 [.322]	0.0019980 [.745]	0.0022240 [.807]	0.0021718 [.857]	0.0072263 [.550]	0.0087358 [.538]
AMEX	0.0072740 [.161]	0.0072465 [.251]	0.0024938 [.790]	0.0059965 [.629]	0.0110990 [.373]	0.0147280 [.313]
Use of Proceeds						
Acquisition	0.0049993 [.411]	0.0080712 [.276]	-0.0005037 [.963]	-0.0120340 [.405]	-0.0157540 [.278]	-0.0082487 [.628]
General Purposes	0.0018618	0.0058301	-0.0044653	-0.0196600	-0.0201740	-0.0124330

	[.720]	[.355]	[.632]	[.111]	[.104]	[.392]
Payment on Loans	-0.0032873	-0.0028603	-0.0167020	-0.0193460	-0.0187360	0.0128140
	[.681]	[.770]	[.247]	[.311]	[.330]	[.571]
Refinancing	0.0010491	0.0073232	-0.0016566	-0.0100680	-0.0181250	-0.0078197
	[.841]	[.249]	[.860]	[.416]	[.145]	[.592]
Callable Issue						
CALLLIST	0.0022222	0.0025129	0.0043614	0.0077070	0.0067912	0.0046553
	[.275]	[.308]	[.232]	[.111]	[.163]	[.415]
Market Conditions						
Bull Market	-0.0009362	-0.0014275	-0.0013209	-0.0006541	-0.0027211	0.0006139
	[.640]	[.558]	[.715]	[.891]	[.571]	[.913]
Number of Issuances						
First-time Issuer	-0.0005656	0.0013736	0.0028424	0.0051341	0.0076635	0.0116320
	[.738]	[.506]	[.353]	[.205]	[.060]	[.015]
Normalized Ratios of Firm Performance						
Current	-0.0002714	-0.0000929	**-0.0011537**	-0.0011158	-0.0003268	-0.0011015
	[.343]	[.790]	**[.027]**	[.104]	[.635]	[.173]
Total Asset Turnover	-0.0024454	-0.0021334	0.0010314	0.0022848	0.0039504	0.0038150
	[.056]	[.169]	[.654]	[.454]	[.197]	[.288]
Basic Earnings Power	-0.0015952	0.0002345	0.0076231	0.0029837	0.0113520	0.0067432
	[.556]	[.943]	[.120]	[.646]	[.082]	[.378]
Debt	-0.0042215	0.0010026	**-0.0141850**	**-0.0204940**	-0.0154270	**-0.0265160**
	[.251]	[.823]	**[.034]**	**[.019]**	[.080]	**[.010]**
SIC Code						
1000	0.0030390	-0.0024055	-0.0003178	-0.0328110	-0.0125680	-0.0130690
	[.741]	[.830]	[.985]	[.137]	[.570]	[.615]
2000	0.0135870	0.0083501	0.0022841	-0.0257660	-0.0077456	-0.0110710
	[.134]	[.450]	[.889]	[.235]	[.722]	[.664]
3000	0.0125180	0.0043608	-0.0028603	-0.0321690	-0.0149290	-0.0209980
	[.164]	[.691]	[.860]	[.135]	[.489]	[.407]
4000	0.0125510	0.0054465	0.0065560	-0.0210130	0.0020031	-0.0014023
	[.161]	[.617]	[.685]	[.326]	[.926]	[.956]
5000	0.0162970	0.0064042	-0.0011338	-0.0184380	-0.0019860	-0.0064503
	[.076]	[.566]	[.945]	[.401]	[.928]	[.803]
7000	0.0076605	0.0038534	-0.0018093	-0.0219510	-0.0063656	-0.0007815
	[.405]	[.731]	[.913]	[.319]	[.773]	[.976]
8000	0.0132520	0.0034229	0.0055715	-0.0239410	-0.0055802	-0.0115280
	[.164]	[.768]	[.746]	[.293]	[.807]	[.667]
R-squared	0.5429550	0.5174690	0.4995900	0.4452820	0.4588580	0.4402610
Adjusted	0.5203090	0.4935600	0.4747950	0.4177960	0.4320450	0.4125260
observations	700	700	700	700	700	700

the issue amount being significant determinants of the CAR in all three event windows. Bonds with ratings of BBB, BB and B are also shown to be a significant determinate in the latter observation windows. The debt management ratio is the final variable determined to have significance over the CAR. This takes place in the 7-day and 11-day windows.

The inclusion of a test variable segregating the data by the firms' industry classification has mixed results. The sign of the intercept was determined by the cross-sectional regression. The sign of the intercept changes for each industry classification, variant upon the test window. One interesting thing to note is the lack of significance by testing the firms' industry classification in determining a CAR. Given the lack of significance with the SIC code variable, this suggests the industry classification has no impact over the cumulative return.

2.4.4 Variables of the Regression

The intent of this line of research is to identify various characteristics that are significant in determining the abnormal return that surrounds an issuance of HYD.

Using the abnormal return as the dependent variable, and various bond and firm characteristic variables as explanatory variables, it can begin to explain the CAR that surrounds an announcement of a HYD issuance. All observations in the database experience a negative abnormal return surrounding the announcement of a high-yield bond issuance. The age of the firm at issuance is selected as an independent variable and found to be significant in determining the CAR. The intercept is of positive value which will lead to a positive impact on the return. This positive impact lowers the amount of the negative CAR which supports the hypothesis the older the firm at issuance, the lower the CAR will be. The amount of the issuance is found to have a negative intercept as a result of the regression. The negative coefficient will have a negative impact over the CAR; this will contribute to a more negative CAR. This evidence supports the hypothesis of the lower the issue amount, the less negative the CAR, this is also found to have statistical significance. The coupon amount is classified as a fixed amount, floating or variable. In only one instance does this variable show significance. This happens in Equation 7 where the variable coupon rate has statistical significance in the 3-day window. The sign of the intercept is negative showing a variable coupon rate to increase the value of the negative CAR. With only one instance revealing significance, this provides only minimal justification at best supporting the hypothesis of the lower the coupon amount, the less negative the CAR.

The rating of the issue proves to be a significant determinant with all four rating classifications proving this relationship. However, bonds with a rating of BBB, BB and B have a positive intercept while bonds of CCC rating have a negative. Bonds in the "B" range will have a lower the CAR than BBB-rated and BB-rated bonds while CCC-rated bonds will cause it to increase. These relationships support the hypothesis the better the credit rating of the bond, the less negative the CAR. First-time high-yield bond issuers are shown to have a mixed intercept value in the windows observed. First-time issuers are proven to have significance in Equation 6 and 7, being significant at the 11-day window with a positive intercept. This result at the 11-day test window supports the hypothesis stating that first-time issuers will have a lower CAR than seasoned high-yield bond issuers. The debt management ratio also has explanatory power over a CAR. The test results reveal a negative intercept value which would suggest the debt management ratio contributes to the negative CAR. These results support the debt management hypothesis which states the lower the firms' debt management ratio, the less negative the CAR will be.

Several variables tested did not reveal any significance over the CAR, this includes the years to maturity, the exchange where the equity of the firm trades, the use of proceeds, whether the issue is callable or not, and if the market is in a bull or bear state. The regression results show the length of the issue is a statistically significant determinant of a CAR. However, the positive value of the intercept will lead to a positive impact on the return, lowering the CAR. This variable is not significant and does not support the hypothesis the shorter the length of the issue, the lower the CAR. It was hypothesized the better the stock exchange the firm participates, the less the negative CAR. The results do not support this hypothesis. The results also do not support the hypothesis that firms issuing high-yield debt for merger\acquisition and general purposes will have less of a CAR than firms issuing for repayment refinancing purposes. The results of the regression do support the hypotheses for both callable bonds and markets conditions. I expected to find that callable bonds will have less of a less negative CAR than non-callable bonds and bonds issued in bear markets will have a less of a negative CAR than bonds issued in a bull market. While these relationships are supported by the results, these variables are not found to be of significance in determining the CAR.

Measures of liquidity and asset management are found to be statistically significant determinants of the CAR, but the negative intercept value refutes the expected relationship. Ratios of liquidity and asset management are not significant since the results do support the hypotheses stating the higher the firms' current and total asset turnover ratios, the less negative the CAR will be. Additionally, a measure of firm profitability was tested using the basic earning power ratio. This was found to have no explanatory power and does not support the hypothesis stating the higher the basic earning power ratio, the less the negative CAR. In instances where the intercept value is positive, a more negative CAR will happen. The final testing variable infused into the sample is done in Equation 8 with the addition of the industry classification variable. Table 9 reveals the results of this inclusion and shows the industry classification of the firm has no impact over the CAR. The results further do not support the hypothesis stating that older, more established industries should exhibit less negative CAR.

5. Conclusion

The first series of testing conducted in this chapter finds statistically significant negative abnormal stock returns surround an announcement of an issuance of HYD. The second major part of this research attempts to explain the significant return through a series of cross-sectional regressions. This line of research finds significant negative abnormal returns exist surrounding an announcement of HYD issuance. It is also found that various bond and firm characteristics contribute to the composure of an abnormal return. Further work is still necessary to fully understand what causes the significant abnormal return that encumbers an announcement of HYD. The evidence of significant explanatory variables in this research

provides a partial explanation for contributing factors of an abnormal return.

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Appendix A – Standardized Industry Classification List
Source: http://www.osha.gov/pls/imis/sic_manual.html

A. Division A: Agriculture, Forestry, And Fishing
   - Major Group 01: Agricultural Production Crops
   - Major Group 02: Agriculture production livestock and animal specialties
   - Major Group 07: Agricultural Services
   - Major Group 08: Forestry
   - Major Group 09: Fishing, hunting, and trapping

B. Division B: Mining
   - Major Group 10: Metal Mining
   - Major Group 12: Coal Mining
   - Major Group 13: Oil And Gas Extraction

Major Group 14: Mining And Quarrying Of Nonmetallic Minerals, Except Fuels

C. Division C: Construction

Major Group 15: Building Construction General Contractors And Operative Builders

Major Group 16: Heavy Construction Other Than Building Construction Contractors

Major Group 17: Construction Special Trade Contractors

D. Division D: Manufacturing

Major Group 20: Food And Kindred Products

Major Group 21: Tobacco Products

Major Group 22: Textile Mill Products

Major Group 23: Apparel And Other Finished Products Made From Fabrics And Similar Materials

Major Group 24: Lumber And Wood Products, Except Furniture

Major Group 25: Furniture And Fixtures

Major Group 26: Paper And Allied Products

Major Group 27: Printing, Publishing, And Allied Industries

Major Group 28: Chemicals And Allied Products

Major Group 29: Petroleum Refining And Related Industries

Major Group 30: Rubber And Miscellaneous Plastics Products

Major Group 31: Leather And Leather Products

Major Group 32: Stone, Clay, Glass, And Concrete Products

Major Group 33: Primary Metal Industries

Major Group 34: Fabricated Metal Products, Except Machinery And Transportation Equipment

Major Group 35: Industrial And Commercial Machinery And Computer Equipment

Major Group 36: Electronic And Other Electrical Equipment And Components, Except Computer Equipment

Major Group 37: Transportation Equipment

Major Group 38: Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks

Major Group 39: Miscellaneous Manufacturing Industries

E. Division E: Transportation, Communications, Electric, Gas, And Sanitary Services

Major Group 40: Railroad Transportation

Major Group 41: Local And Suburban Transit And Interurban Highway Passenger Transportation

Major Group 42: Motor Freight Transportation And Warehousing

Major Group 43: United States Postal Service

Major Group 44: Water Transportation

Major Group 45: Transportation By Air

Major Group 46: Pipelines, Except Natural Gas

Major Group 47: Transportation Services

Major Group 48: Communications

Major Group 49: Electric, Gas, And Sanitary Services

F. Division F: Wholesale Trade

Major Group 50: Wholesale Trade-durable Goods

Major Group 51: Wholesale Trade-non-durable Goods

G. Division G: Retail Trade

Major Group 52: Building Materials, Hardware, Garden Supply, And Mobile Home Dealers

Major Group 53: General Merchandise Stores

Major Group 54: Food Stores

Major Group 55: Automotive Dealers And Gasoline Service Stations

Major Group 56: Apparel And Accessory Stores

Major Group 57: Home Furniture, Furnishings, And Equipment Stores

Major Group 58: Eating And Drinking Places

Major Group 59: Miscellaneous Retail

H. Division H: Finance, Insurance, And Real Estate

Major Group 60: Depository Institutions

Major Group 61: Non-depository Credit Institutions

Major Group 62: Security And Commodity Brokers, Dealers, Exchanges, And Services

Major Group 63: Insurance Carriers

Major Group 64: Insurance Agents, Brokers, And Service

Major Group 65: Real Estate

Major Group 67: Holding And Other Investment Offices

I. Division I: Services

Major Group 70: Hotels, Rooming Houses, Camps, And Other Lodging Places

Major Group 72: Personal Services

Major Group 73: Business Services

Major Group 75: Automotive Repair, Services, And Parking

Major Group 76: Miscellaneous Repair Services

Major Group 78: Motion Pictures

Major Group 79: Amusement And Recreation Services

Major Group 80: Health Services

Major Group 81: Legal Services

Major Group 82: Educational Services

Major Group 83: Social Services

Major Group 84: Museums, Art Galleries, And Botanical And Zoological Gardens

Major Group 86: Membership Organizations

Major Group 87: Engineering, Accounting, Research, Management, And Related Services

Major Group 88: Private Households

Major Group 89: Miscellaneous Services

J. Division J: Public Administration

Major Group 91: Executive, Legislative, And General Government, Except Finance

Major Group 92: Justice, Public Order, And Safety

Major Group 93: Public Finance, Taxation, And Monetary Policy

Major Group 94: Administration Of Human Resource Programs

Major Group 95: Administration Of Environmental Quality And Housing Programs

Major Group 96: Administration Of Economic Programs

Major Group 97: National Security And International Affairs

Major Group 99: Nonclassifiable Establishments