A SURVEY OF THE ISSUE AND ISSUER CHARACTERISTICS AND THEIR IMPACT ON STOCK PRICE PERFORMANCE IN SEASONED EQUITY OFFERINGS

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ABSTRACT

This paper examines the stock price reactions to the announcement of seasoned equity offerings. Extant research in finance shows that stocks generally react negatively to the announcement of equity offerings. The highest positive reaction (as a percentage of the number of issues) observed was 27 percent. To better study the price performance of the stocks, this paper controlled for the issuers' industry and exchange listings, leverage and growth potential of the issuer, and the size of the issue. It is found that size of the issue has the largest negative effect.

INTRODUCTION

Existing research demonstrates that market reactions to seasoned equity issues are mostly negative. Still, some studies reported positive reaction to seasoned equity offerings [Barclay and Litzenberger (1988), Bradford (1987), Choi, Masulis, and Nanda (1992), and Varma (1995)]. The reported number of positive responses ranged from 19 percent (Barclay and Litzenberger) to 27 percent (Varma). Thus it appears that about one quarter of the sample firms experience positive abnormal return. Since issue and issuer characteristics differ, researchers need to control for the factors differentiating the issuers. This paper examines how leverage, growth opportunities, and the issuers industry might be linked to the observed stock price reaction.

LITERATURE REVIEW

Smith (1986) put forth four generalizations of the impact of external financing on the value of firms: 1) external financing does not increase the value of the firm; 2) equity financing is more value decreasing than debt or preferred stock financing; 3) convertible debt carries a more negative impact than straight debt; 4) industrial firms suffer more value loss with external financing than do the utilities.

Myers and Majluf (1984) hold that equity financing shall always have negative valuation consequences due to information asymmetry between the management and the existing shareholders. A test by Diekerns (1991) showed that firms time their equity issue announcement when the level of information asymmetry is relatively low. In the extreme, a fully levered firm should suffer minimal loss due to information asymmetry, whereas, a fully unlevered firm should suffer maximum value loss.

Proponents of "Growth Theory" argue that the market's reaction to seasoned equity offerings is a function of issuing firms' level of growth opportunities when the financing decision is announced. Some researchers used the book to market value ratio as the proxy for growth opportunities, while others used Tobin's Q. Dennis (1994) reported that the equity issue announcement effects are significantly negative

for low-growth firms, and negative but not significant for high-growth firms. But some studies produced very different results while examining the relationship between issuers' growth opportunities and announcement effect of seasoned equity issues. McLaughlin, Safieddine, and Vasudevan (1998) have documented that market reaction to seasoned equity offering is more negative for high growth firms. They also argue that bigger firms have relatively lower level of information asymmetry than smaller firms, because more analysts follow large capitalization firms.

All of the studies mentioned so far, treated leverage, growth, and issue-size variables in isolation. This paper offers a different angle into observed stock price reaction by looking at the interaction of these variables.

DATA

Data on twelve years of seasoned equity offerings were collected from *Investment Dealer's Digest*. The collected data include: the offering date, the offering price, and the number of shares offered. The financial year end date for each firm was collected from the Wall Street Journal Index (WSJI). Initially 4876 issue events were identified. The following criteria were used in the screening process:

a. For the financial data, Compustat tape was used. If the sample firm was not in Compustat, then events related to that company were deleted.

b. For market data, the daily return data from CRSP tape was used. Abnormal return calculation methodology required that each sample event must have had return data from day –187 to +15 relative to the event date.

c. In order to avoid the confounding effect, if a firm had seasoned or combined (seasoned plus secondary) issues within the past or subsequent 12 months of the event date, that firm was deleted from the list.

The above selection criteria brought the sample down to 1353 sample events for 984 companies. Table 1 shows the distribution of sample firms and events by year, exchange listing, and by industry. Issue and issuing firm characteristics used to differentiate different samples were leverage and growth opportunities of the issuers and the issue size. Also, issuers' industries and exchange listings were also identified.

Firm's leverage ratio was defined as the book value of debt divided by the sum of book value of debt, market value of common stock, and liquidating value of preferred stock [Pilotte (1992)]. Growth was estimated by Tobin's Q. High Tobin's Q firms were those who possessed higher growth opportunities at the time of making seasoned equity offerings. We used Chung and Pruitt's model (1994) to estimate Tobin's Q:

$$\text{Tobin's Q} = (MVA + PS + D) / TA \tag{1}$$

Where, MVA = market value of common stock, PS = liquidating value of firm's preferred stock, D= book value of total debt, TA= book value of total assets. Calculated Tobin's Q was adjusted by industry median. If the ratio was greater than one, the firm was placed in high growth group. Issue size was another variable considered. Size of the issue was normalized by the total asset of the firm.

For each sample or sub-sample, excess returns were calculated around the announcement dates. The announcement date (event date) was day 'zero' and time period was –162 to –36 relative to the event date. Abnormal returns were calculated over days –15 to +15. Market model was used to estimate the expected return. The abnormal returns were the difference between actual returns and expected returns:

$$AR_{jt} = R_{jt} - E(R_{jt}) \tag{2}$$

Daily abnormal or excess returns were calculated for each sample event over the event window (days –15 to +15). For a sample of N events, the average abnormal return for each day "t" was estimated as:

$$AR_t = AR_{jt} / N \quad (3)$$

The expected value of $AR_{jt} = 0$ by definition. The cumulative abnormal returns (CAR) for each security 'j' over a period of k to l were estimated as follows:

$$CAR_{j,k,l} = AR_{jt} \quad (4)$$

And the cumulative average abnormal return,

$$CAR_{k,l} = CAR_{j,k,l} \quad (5)$$

A cross sectional regression analysis was employed in this study to identify the relationships between the identified variables with the dependent variable. Cumulative abnormal return was the dependent variable, and the independent variables were Tobin's Q, leverage ratio, market value of assets, cash flow to total asset, and size of the issue adjusted by the total assets.

TABLE 1

The distribution of Sample Events1 and Sample Firms2 by Exchange listing3 - New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and NASDAQ Market system (NSDQ); by Industry classification4 - Industrial (IND), Banks and Financial Institutions (BNK) and Utilities (UTL). And by the Event year.

YEAR	SAMPLE **EVENTS** BY **EXCHANGE**				SAMPLE **FIRMS** BY **EXCHANGE**				SAMPLE **EVENTS** BY **INDUSTRY**				SAMPLE **FIRMS** BY **INDUSTRY**			
	NYSE	AMEX	NSDQ	**TOTAL**	NYSE	AMEX	NSDQ	**TOTAL**	IND	BNK	UTL	**TOTAL**	IND	BNK	UTL	**TOTAL**
1	126	16	65	**207**	126	16	65	**207**	179	11	17	**207**	179	11	17	**207**
2	30	03	17	**50**	27	03	15	**45**	25	09	16	**50**	22	08	15	**45**
3	61	06	43	**110**	53	05	37	**95**	67	30	13	**110**	56	30	09	**95**
4	73	08	45	**126**	58	06	37	**101**	85	31	10	**126**	73	22	06	**101**
5	56	09	20	**85**	34	06	16	**56**	65	10	10	**85**	45	06	05	**56**
6	22	03	11	**36**	11	02	08	**21**	25	05	06	**36**	15	03	03	**21**
7	43	14	29	**86**	30	10	25	**65**	50	16	20	**86**	43	08	14	**65**
8	35	03	23	**61**	22	03	14	**39**	41	08	12	**61**	29	05	05	**39**
9	94	10	61	**165**	55	04	42	**101**	107	36	22	**165**	74	22	05	**101**
10	89	15	43	**147**	52	07	29	**88**	98	27	22	**147**	64	13	11	**88**
11	120	15	52	**187**	61	09	32	**102**	117	35	35	**187**	69	20	13	**102**
12	58	06	29	**93**	41	05	18	**64**	67	18	08	**93**	46	16	02	**64**
TOTAL	**807**	**108**	**438**	**1353**	**570**	**76**	**338**	**984**	**926**	**236**	**191**	**1353**	**715**	**164**	**105**	**984**

1 Sample Events are the Seasoned Equity issue events between 1993 and 2004.
2 Sample Firms are the Seasoned Equity issuing firms.
3 Exchange listing is identified through the exchange listing code available in the Compustat Annual data tape.
4 Industry classification is done using the two-digit SIC code, available in the Compustat data Tape.

DATA ANALYSIS

Table 2 contains the descriptive statistics of the overall sample, showing mean and median. Other variables included in the table are properties of the issue such as issue price, issue size, leverage of the issuing firms, Tobin's Q, 1-year and 3-year growth in return on sales (ROS), performance measures like return on sales (ROS), return on assets (ROA), market value of assets and cash flow to total assets. Table 2 shows that issuers of seasoned equity offerings generally have higher leverage and higher growth. They are also relatively higher priced as evident from the adjusted market to book value ratio.

TABLE 2

Descriptive statistics for the overall sample. Relative primary and combined issues refers to issue size relative to Market value of Assets. Adjusted (Adj.) variable are the difference in the value of variable from its respective Industry (two-digit SIC) and Exchange median value. For details of the calculation process of the variables please refer to Appendix B.

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Issue Price	1353	24.0276	14.1349	21.25	1.375	146
Relative Primary Issue	970	0.261	0.3533	0.13	0.00136	3.3174
Relative Combined Issue	383	0.762	0.9942	0.4877	0.0137	10.5573
Leverage	1344	0.2667	0.2187	0.2319	0	1
Adj. Leverage	1343	0.0272	0.1811	0	-0.5203	0.9553
Tobins Q	1353	1.2311	1.3168	0.8643	-0.1737	12.4019
Market-to-Book	1353	1.9208	2.0311	1.3472	1.0053	27.8118
1-Yr growth on ROS	1272	-0.1625	13.9209	0.0217	-340.9	296.9
3-Yr growth on ROS	1276	-0.1646	13.8993	0.0217	-340.9	296.9
Adj. Tobin's Q	1353	0.4823	1.2052	0.0629	-1.6617	11.748
Adj. Market-to-Book	1353	0.1186	1.2477	-0.0021	-5.871	22.6087
adj. 1-Yr growth on ROS	1272	-0.1446	13.9205	0.0285	-341.1	296.8
adj. 3-Yr growth on ROS	1272	-0.1446	13.9205	0.0285	-341.1	296.8
Return on Sales(ROS)	1313	-0.078	3.729	0.1361	-117.6	0.883
Return on Assets	1315	0.1218	0.121	0.1222	-0.661	0.9479
Cash-Flow to Total Assets	1315	0.0551	0.0955	0.0541	-0.6624	0.564
Market Value of Assets	1353	1233.6	4804.3	166.3	2.708	122639

Table 3 contains the cumulative average abnormal return (CAR) on the event date ($CAR_{0,0}$), 3-day period ($CAR_{-1,1}$), and 5-day period ($CAR_{-2,2}$). In the overall sample it is found that the average abnormal return on the event date is –0.8416% (t= -11.8163). Three day CAR is –2.1626% (t=-1.93871) and five day CAR is –2.4328% (t=-1.70849). Previous studies reported average three-day abnormal return of 3.1% which is lower than the cumulative abnormal return observed in this study. The most plausible reason could be this papers' stringent sample screening process.

TABLE 3

Event-day abnormal return, 3-days cumulative abnormal return, and 5-days cumulative abnormal return around the event date. Event date is the seasoned equity offering date. Sample are broken down by Industry, Exchange listing, Type of the issue, and the multiplicity of the issuer. Numbers in the Italic are the t-statistics for the abnormal returns. Combined offerings are where on the same event date both primary and secondary seasoned equity is offered. Multiple issuers are those issue events issuers of which issued more than one seasoned equity issue over the sample period (1983-1994). For Exchange identification of the sample events Compustat assigned code is used. The same procedure is used to separate the sample events between the Industries.

	% OF POSITIVE ON EVENT-DAY	$CAR_{0,0}$	$CAR_{-1,1}$	$CAR_{-2,2}$
Total Sample (1353)	34.885%	-0.008416	-0.021626	-0.024328
		(-11.8163)	(-1.93871)	(-1.7085)
Banks (236)	41.949%	-0.0061584	-0.0174887	-0.020792
		(-4.2232)	(-7.0945)	(-6.1614)
Industrial (926)	33.153%	-0.0097866	-0.0249151	-0.027326
		(-9.6227)	(-14.4787)	(-12.335)
Utilities (191)	34.555%	-0.0045605	-0.017934	-0.014165
		(-3.8706)	(-5.3319)	(-5.2658)
American Stock Exchange (108)	29.630%	-0.0118388	-0.0258581	-0.030098
		(-4.2486)	(-5.4790)	(-5.0175)
NASDAQ Market System (438)	34.932%	-0.0096865	-0.026187	-0.029278
		(-5.6966)	(-10.0125)	(-8.5659)
New York Stock Exchange (807)	35.564%	-0.0072684	-0.0185847	-0.020870
		(-9.1119)	(-12.3480)	(-10.747)
Multiple Issues (600)	36.167%	-0.0077751	-0.0195346	-0.022475
		(-7.6902)	(-10.9226)	(-9.8468)
Single Issues (753)	33.864%	-0.0089268	-0.0232929	-0.025805
		(-8.0736)	(-12.7017)	(-10.767)
Combined Issues (383)	33.420%	-0.0114059	-0.0272091	-0.028946
		(-6.8148)	(-9.5281)	(-7.8069)
Primary Issues (970)	35.464%	-0.0072355	-0.0194219	-0.225050
		(-8.7313)	(-13.8481)	(-12.380)

Table 3 also reports the percentage of positive returns on the event date. These numbers are also higher than those reported by previous researchers. The percentage of positive returns on event day for the overall sample is 34.885%. Previous studies reported percentage of positive returns ranging from 19-27%. The difference again may probably be attributed to the sample screening process. The table also contains the breakdown of the abnormal returns by the type of industry. The event day and 3-day abnormal returns for the industrial firms are -0.97866% (t= -9.6227) and –2.4915% (t=-14.4787434) respectively which are lower than the issues from the banking and utility companies. As a matter of fact, for all the measurement periods (event day, 3-day, and 5-day) industrial sample had the most negative cumulative abnormal returns (CAR).

When the samples are grouped by exchange listing, it is found that firms listed on the American Stock Exchange (AMEX) and the National Association of Securities Dealers Automated Quotations (NASDAQ) market system have higher negative returns compared to those listed on the New York Stock Exchange (NYSE). This finding does not support the argument by Ambarish, John, and William (1988) that firms listed on the AMEX and the NYSE are mostly mature firms and should experience more value

loss than the firms listed on NASDAQ as the average growth of the later group is higher. The greater negative reaction for NASDAQ listed firms indicate that there are other factors beyond growth opportunities contributing to the market reaction to such offerings. It is also reported in this table that multiple issuers experience higher percentage of positive returns than single issuers. This may be due to the fact that market has fewer uncertainties about firms which raise capital more often.

If the issue is associated with secondary issue (i.e., if it is a combined issue), than the value loss is observed to be greater. When a primary issue is associated with a secondary issue, it implies that block holders are also selling their shares at the time the company is trying to sell more shares. So, negative pressure is coming from two sources: 1) more shares are available; 2) block holders (who are generally believed to have more information) intention to sell could have a negative effect on the issue as well as the firm.

In this paper growth opportunities were measured by Tobin's Q. Descriptive statistics for Tobin's Q are given in table 4. It is observed that the mean and median Tobin's Q for the overall sample and sub-samples are high. This implies that issuing firms generally have higher growth prospects. High growth firms were those with adjusted Tobin's Q of greater than one.

Theoretical arguments suggest that a firm's high growth opportunities minimize value loss associated with seasoned equity offerings. But empirical evidence does not support it.

TABLE 4

The descriptive statistics of Tobin's Q variable used to differentiate between high-growth firms and low-growth firms. Q1-Q3 refers to the difference between the upper and lower quartiles of the Tobin's Q ratio. Samples are broken down by the type of industry, exchange listing, multiplicity of the issue and by the type of the issue.

	MEAN	MEDIAN	Q1-Q3
Total Sample (1353)	1.229851	0.862519	0.880239
Banks (236)	1.125218	0.181806	0.954754
Industrial (926)	1.419943	0.995048	1.065508
Utilities (191)	0.900343	0.815083	0.160610
American Stock Exchange (108)	1.423621	1.039118	1.120032
NASDAQ Market System (438)	1.626855	1.137566	1.500464
New York Stock Exchange (807)	0.988445	0.796136	0.631616
Multiple Issues (600)	1.254251	1.609755	0.849879
Single Issues (753)	1.210509	1.385209	0.922627
Combined Issues (383)	1.612180	1.139653	1.181697
Primary Issues (970)	1.078890	0.799130	0.751509

A cross-sectional regression analysis was performed with event day cumulative average abnormal return as the dependent variable and Tobin's Q, leverage ratio, issue size, cash flow, level of diversification, and the log of the market value of assets. Also, dummy or categorical variables were used to classify the samples by primary or combined issue, single or multiple issue, and exchange listing. Table 5 contains the results of this analysis.

TABLE 5

Regression results of cross-sectional regression analysis of Overall sample (Panel A), and Industrial sample (Panel B). The dependent variable is the Event-days abnormal return. Independent variables are: Leverage ratio (LEVRG), Tobin's Q ratio(T-Q), Size of the seasoned equity Issue adjusted by the Market value of assets (ISUSIZE), Cash flow to total Assets (CFTA), Log of Market value of Assets (L(MVA)), Dummy for the Type of the Issue (TYPE) if the issue is a combined issue then TYPE takes value 1, zero otherwise, and another dummy for the Multiplicity of the Issue(MLTPL) where, if the issue is by a multiple issuer then MLTPL takes value 1 else takes the value zero. Dummy XNG1 takes value 1(one) is the issue is listed in NASDAQ, 0(zero) otherwise, and dummy XNG2 takes value 1(one) is the issue is listed in NYSE else take value 0(zero).

	INTRCPT	T-Q	LEVRG	ISUSIZE	CFTA	L(MVA)	TYPE	MLTPL	XNG1	XNG2	ADJ R-SQ	PROB>F
Pane1-A												
MODEL -1	-0.00578***	-0.00220***									0.0100	0.0002
MODEL -2	-0.00990***		+0.00525								0.0009	0.1409
MODEL -3	-0.00550***	-0.00226***	-0.00079								0.0093	0.0008
MODEL -4	-0.00357**	-0.00099	-0.00427	-0.00001***							0.0248	0.0001
MODEL -5	-0.00369*	-0.00098	-0.00415	-0.00001***	+0.00144						0.0241	0.0001
MODEL -6	-0.00679*	-0.00094	-0.00567	-0.00001***	+0.00262	+0.00059					0.0243	0.0001
MODEL -7	-0.00644*	-0.00096	-0.00568	-0.00001***	+0.00380	+0.00052	-0.00095	+0.00034			0.0230	0.0001
MODEL -8	-0.00913**	-0.00096	-0.00533	-0.00001***	+0.00340	+0.00056	-0.00104	+0.00033	+0.00368	0.00224	0.0227	0.0001
Panel-B												
MODEL -1	-0.00644***	-0.00233***									0.0103	0.0011
MODEL -2	-0.00963***		-0.00070								-0.0011	0.8845
MODEL -3	-0.00302	-0.00305***	-0.01036*								0.0132	0.0008
MODEL -4	-0.00137	-0.00211**	-0.01265**	-0.00001***							0.0200	0.0001
MODEL -5	-0.00151	-0.00209**	-0.01252**	-0.00001***	+0.00140						0.0189	0.0002
MODEL -6	-0.00416	-0.00214**	-0.01421**	-0.00001**	+0.00162	+0.00057					0.0184	0.0005
MODEL -7	-0.00304	-0.00218**	-0.01394**	-0.00001*	+0.00422	+0.00042	-0.00250	+0.00022			0.0176	0.0015
MODEL -8	-0.00738	-0.00224**	-0.01304**	-0.00001*	+0.00374	+0.00059	-0.00275	+0.00019	+0.00580	+0.002798	0.0186	0.0019

* (**) (***) denotes significant at the 0.10 (0.05) (0.01) level

The results for the overall sample are produced in panel A and panel B is for industrial firms (we only reported the industrials because they are about 70 percent of the total sample). Results for the overall sample show that Tobin's Q has a consistently negative coefficient, whereas, the coefficient for leverage

is negative but not significant. When the size of the issue is introduced into the model, it's explanatory power (adjusted R-squared) increases significantly (model-4), and the coefficient of the issues size itself is significant. Introducing other variables does not improve the explanatory power of the model. Coefficients for the "type of issue" dummy variable are negative and that for multiplicity of issue is positive.

In panel B (industrial sample), results are different. Coefficients for both leverage and growth variables are negative and significant for all of the models. Coefficient of issue size is significant but the level of significance drops as other variables are introduced. Coefficients for cash flow to total assets and the log of market value of assets are negative, implying that market the already knows that these firms are high value firms.

CONCLUSION

This study attempted to identify the characteristics of seasoned equity issuing firms, which might affect the announcement day return. Variables examined were leverage and growth potential of the issuers, and issue size. The following factors were also considered: issuer's industry (banking, utility, and industrial) and their exchange listings (New York Stock Exchange, American Stock Exchange, and NASDAQ). Of the total sample, stocks of about 65 percent of the companies experienced negative price reactions. But the results changed when the samples were homogenized. Issues from the banking sector fared the best with about 42 percent showing positive reaction on the event date and the performance of the industrial sector was the worst (33 percent positive). Among the stock exchanges, issues from companies listed on the NYSE had the most positive price reaction (36 percent) while companies listed on the AMEX were the worst performers (about 30 percent positive). For non-dummy variables, the coefficient of Tobin's Q (measure of growth) is negative and significant for the industrial sector. Coefficient leverage is negative, but not significant. It has been observed that on the average (industry adjusted) leverage and growth opportunities of the issuers are higher than their peer group. Coefficient of 'issue size' is significantly negative for all models. Coefficients of cash flow to total assets and the log of market value of assets are positive implying that market already knows that these are high value firms.

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