Seasoned Equity Offerings: Characteristics of Firms

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Abstract

Seasoned equity offerings (SEOs) are sales of stock after the initial public offering. They are a means to raise funds through the sale of stock rather than the issuance of additional debt. We propose a method to predict the characteristics of firms that undertake this form of financing. Our procedure is based on logistic regression where firm-specific variables are obtained from the perspective of the firm's need to raise cash such as high debt ratios, high current liabilities, reduction and changes in current debt, significant increase in capital expenditure, and cash flows in terms of cash as a percentage of assets.

Keywords: Seasoned equity offerings, firm characteristics, balance sheet accounts, income statement accounts

1. Introduction

Seasoned equity offerings (SEOs), more descriptively termed secondary equity offerings are the issue of stock by a firm that has already completed a primary issue. From a capital structure perspective, a firm can raise long-term funds by using internal financing if it has the funds available. Given the likelihood that internal funds may be insufficient to meet long-term needs for new product development, expansion of facilities, or research and development investment, all of which require significant amounts of capital, raising funds, from external sources becomes the only viable alternative. This may take the form of borrowing from financial institutions (acquiring debt), or issuing common stock through a seasoned equity offering to existing or new shareholders (selling equity). This paper is directed toward forecasting the likelihood that a firm would choose equity. The SEO research is limited. Only a few studies (Masulis & Korwar, 1986; Mikkelson & Partch, 1986) investigate the reasons for using SEOs as a means of external funding. Others focus on a the single variable as a determinant of the SEO alternative. For example, Masulis's (1983) emphasis was on debt reductions, Hull, and Moellenberndt (1994) examined bank debt reductions, Hull (1999) on the failure to meet industry debt standards, and Johnson, Serrano, and Thompson (1996) on the ability to capitalize on investment opportunities.

We suggest that it is a complex interplay of factors that determine the SEO choice decision, particularly the availability of debt, current cash flow, and investment opportunities so that any analysis must consider the simultaneous effect of all three groups of variables. Cash flow considerations, in particular, have been omitted from the above studies. Why would a firm choose equity over debt ? The tax deductibility of the interest on debt renders debt the cheaper source of capital and does not result in the dilution of ownership as would be the case if additional shares are issued to new stockholders. Myers and Majluf (1984) theorized that managers have privileged information about the firm. They are aware of its cash flows, its retention of earnings, sales prospects and the need for capital and research expenditure. If managers act rationally and have the firm's best interests at heart, they will invest in positive NPV projects and raise firm value. The amount of capital for investment in these projects may have to be obtained externally; excessive debt may alarm existing shareholders given that the tax deductibility of interest on debt is substantially offset by the risk of financial distress and bankruptcy in the event that the firm's future cash flows are insufficient to meet fixed payments of principal and interest.

That future cash flows may be insufficient is a real concern given the uncertainty of the current economic environment. In other words, multiple signals influence the choice of financing, negative signals from the escalation of the risk of financial distress from use of debt, positive signals from the tax benefit of debt and the lack of dilution of ownership, positive signals from management's prudent undertaking of projects, and negative signals from management submitting to pressure from existing shareholders not to issue stock. Ambarish et al. (1987) concluded that positive signals dominate in favor of issuing additional debt, empirically documenting positive announcement effects from seasoned equity issues.

2. Review of the Literature

Information asymmetry is at the cornerstone of the financing decision. By definition, it is the examination of transactions in which there is an imbalance of information, with one party to the transaction having more valuable information that has the potential to influence the outcome. Managers have inside information on day to day performance which motivates them to select the optimal method of financing. The question becomes, how the information advantage may be gleaned by outsiders. Such denouement of management intentions was referred to by Stigler (1960), the originator of the concept, as screening. The uninformed party (investors and us, in this case) may use observations of the behavior of the informed party to close the imbalance in information by evaluating the choices of managers, which were based on their private information.Walker and Yost (2008) attempted to accomplish this goal by observing the financial performance of firms following SEO announcement. Like us, they recognized the need to in corporate variables that measure diverse motivations for selecting SEOs, namely, debt reduction, capitalizing on investment opportunities, and general operational reasons, particularly declining performance.

However, they measured these effects on an ex ante basis in terms of future SEO performance after announcement, in terms of both financial statement information and statements made by management at announcement. This study, measures SEO motivations ex post, before announcement takes place using financial statements only as we maintain that there are issues of response bias in self-report measures. We also wish to update and extend their sample which consisted of 2 years of pre-2001 data during a term rapid economic expansion to suit the slower growth of the current era. We approach the issue from a forecasting perspective in which we use a large sample based on the entire Compustat database that meets our criteria, instead of confining our analysis to just firms that made SEO announcements as we wish to use firm characteristics to predict the likelihood of SEO offering.

Walker and Yost (2008) observed that expansion was the dominant goal for firms so that those with high levels of debt concentrated on capitalizing on growth opportunities rather than debt reduction. Any debt retirement consisted of paying off old debt contracts and acquiring significant levels of new debt of up to 50-90% of total capital. Both operating cash flow and liquidity declined in the 2 years following SEO announcement, suggesting that internal operational factors may have played a role in motivating management to select SEOs. However, as the data was obtained ex ante it is possible that prevailing conditions following announcement confounded the results so that business conditions after announcement made expansion the primary objective over debt reduction or that a sudden decline in operating performance could have occurred independently of the SEO financing decision. Operating cash flow was measured by operating income before depreciation. As depreciation tax shields provide a major impetus to firms seeking the purchase of new capital equipment, thereby increasing the level of investment in equipment, their exclusion could lead to the overstatement of operating income. Overstatements of operating income lessen the likelihood of SEO choice as general financial health of the firm appears unduly optimistic. Liquidity was measured by the ratio of net working capital to total assets.

The rationale was that net working capital or the extra funds from liquid sources after payment of current debts declined following announcement so that such firms use lack of liquidity as a criterion in their choice of SEOs. We prefer to focus on cash flow mainly as cash is the most liquid of all current assets. Net working capital includes accounts receivable and inventory, which are less liquid assets than cash. Accounts receivable typically takes 90 days to be liquidated, if liquidated in less time it is due to factoring which involves significant losses. Inventory is the least liquid of the current assets with goods remaining unsold for months, so that their ultimate conversion to cash is certainly not timely, but may even be questionable. Further, we take the position that multiple measures of liquidity are necessary as they reveal different aspects of cash flow, and provide a fuller picture of a firm's liquidity position.

We supplement overall cash flow measures with cash flow investing to cover unexpected expenses during expansion, and cash flow financing to explain reductions in cash flow to cover dividend payouts.
Hypothesis Development If a firm needs to raise additional funds, it is apparent that this need emerges from a perceived need for cash in the immediate future. Therefore, the first group of variables are cash flow variables.

Cash Flow. The first source of cash flow is income, which is the net profit of the business after payment of all expenses, interest, and taxes. If the firm generates sufficient income, it would have the funds needed to meet all of its current expenses and reinvest retained earnings in the firm. Therefore, the change in retained earnings would forecast the need to generate funds externally. If retained earnings continue to increase in conjunction with debt, it appears that the firm has exhausted its internal source of funds and needs a seasoned equity offering.

Cash Flow Investing. If the firm has rapidly rising capital expenditures, it may be involved in a major expansion. This could take the form of investing in foreign markets, expanding production for the domestic market, or new product development for either market. The change in capital expenditure should act as an explanatory variable in determining the likelihood of seasoned equity offerings.

Cash Flow Financing. Cash flow financing refers to the methods of disbursement of idle cash generated by business operations. The first payout is dividends. Initial and subsequent dividend announcements send a strong positive signal about the financial health of the firm in that they disseminate information to the investing public that the firm is financially strong enough to sustain the distribution of cash to its shareholders, and that it wishes shareholders to benefit from the continued success of the firm (John et al., 2000). Rising dividend payouts during economic prosperity and the maintenance of dividends at a stable level during economic downturns bolster investor confidence and are likely to be employed by firms who feel that investors have the confidence to continue investing through seasoned equity offerings.

Long Term Debt Reduction. Our position is that firms that engage in a plan of long term debt reduction to reduce the threat of financial distress and bankruptcy. Such firms do not wish to return to dependence of debt and may therefore be likely to seek additional funding from equity sources.

Changes in Current Debt. Coupled with long term debt reduction are changes in current debt. Falling current debt indicates the desire to forego debt as a source of financing. Given that internal financing may be insufficient, equity becomes the only alternative.

Balance Sheet Variables

The balance sheet, by definition, indicates the financial position of a firm at a particular point in time. The most important variable may be total assets. Given that a seasoned equity offering will only be attractive to investors who have sufficient confidence that their funds will be used wisely, it is highly plausible that they will seek large, visible firms who will disseminate sufficient information about their future expansion and investment plans. Only such firms will have stock that is liquid enough to be traded regularly and in sufficient quantities to enable funds to be raised for significant capital expenditures. Small firms have little collateral value and cannot raise funds easily through equity due to high issuance costs and lack of credibility (Myers & Majluf, 1984). If any funds are raised through equity, it is due to their inability to obtain sources of debt funding as documented by Fama and French (2002). We will use total assets as a discriminator by excluding the lowest 75 percent of firms as being unable to raise funds due to lack of perceived liquidity. Other balance sheet variables that merit consideration include cash and short-term investments, investment and advances, current liabilities, and long term debt.

Cash and Short-Term Investments. Cash and short-term investments refers to the cash balance in a demand deposit account as well as investments in marketable securities which consist of short-term bills and stocks held for a 1-3 month duration that act as interest-earning repositories for idle cash. Declining levels of cash as a percentage of total assets indicate short-term needs for cash usually to meet high interest or other fixed payments such as leases of capital equipment or debt repayment. Such firms are less likely to increase fixed payments through increased dependence on debt and would opt for equity financing.

Long Term Debt. An annual increase in long-term debt would be detrimental to the firm from the perspective of controlling risk. Debt is inherently risky in that it imposes restrictions of the use of future cash flows. Firms that show rapid increases in debt are less likely to choose further debt financing and will choose seasoned equity offerings.

Common Equity. Common equity acts as a proxy for retained earnings. As common equity includes both capital stock and retained earnings. An increase in retained earnings could mean that more funds are being generated by the business and possibly there is less need for external funding in the form of an SEO offering. However, it is more realistic to consider an increase in retained earnings as an indicator of greater reinvestment capability and more interest by management to promote the growth and future development of the enterprise. In such cases, more ambitious capital investment projects will be undertaken, possibly those that involve the creation of new products and markets. Such projects may be too risky for traditional financial institutions limiting the amount of capital to be raised through debt. In such cases, equity becomes the preferred investment choice. The final category consists of income statement variables. Income statement variables may not be as useful as balance sheet variables in gauging external funding sources as they tend to have a short-term focus on quarterly rather than long-term results. However, the case can be made for the value of examining net income and capital expenditure.

Net income: This is the single measure of final profitability of the firm. Firms with rising net incomes are successful firms with products that continue to find customers and managers who are committed to the long-term success of the enterprise. They do not engage in agency conflicting behaviors that promote individual self-interest at the expense of the firm's prospects, therefore , such firms continue to be profitable year after year, so that any expansions that they undertake from external funding are fully justifiable to shareholders and the public. Such firms would not wish to see a decline in income by raising funds through debt as interest expense would reverse the trend of rising net income. Further, foregoing potentially profitable products would not be a choice as such managers are focused on continually raising profits.

Capital Expenditures. An increase in capital expenditures represents an increasing in funding new equipment, research expenditure, new product development, and new market expansion. In keeping with Walker and Yost (2008), we employ the measure of capital expenditure/total assets which includes research expenditure. Rising capital expenditures mandate the need forsignificant capital spending on new projects with uncertain potential. Financial institutions may be reluctant to finance such projects so that SEOs become the major source of investment capital.

The above discussion leads to the following hypotheses:

The probability of use of seasoned equity offerings increases with:

H1: The combined effect of a rise in retained earnings and debt,

H2: An increase in capital expenditure,

H3: An increase in dividends,

H4: Long term debt reduction,

H5: The decrease in current debt,

H6: The decline in levels of cash and short-term investments,

H7: The increase in long term debt: This hypothesis is the alternative to H4,

H8: The rise in net income.

3. Methodology

The entire Computstat North America database of 10,000 stocks was screened to arrive at a sample of stocks with SEO potential. Using total assets as the discriminator, firms that had total assets in the 95 th percentile were isolated. As stated only large, visible firms were considered to be possible SEO candidates. Four years of annual financial statement data for each of these firms was extracted including data from 2002-2005. This ensured predictive accuracy based upon the effect of normal market conditions without the confounding effect of the economic downturn of 2007-2009. They included retained earnings, long term debt, capital expenditure, dividends, long-term debt reduction, change in current debt, cash and short-term investment, net income, interest expense, and operating income after depreciation. Each variable was scaled by total assets to account for variations in size of the firm. Asset size was used to estimate the probability of SEO offering, with a dichotomous variable taking on values of 0 and 1 being used to indicate if the firm had a probability of SEO offering (score of 1) or no probability of SEO offering (score of 0). The data was subjected to the following logistic regression:

$$P(\text{SEO offering}) = \alpha + \beta_1 RE + \beta_2 LTD + \beta_3 CE + \beta_4 D + \beta_5 DR + \beta_6 CD + \beta_7 C + \beta_8 NI \quad (1)$$

where

RE = retained earnings measured by common equity

CE = capital expenditure

LTD = long-term debt
D = dividends
DR = debt reduction
CD = current debt
C = cash and short-term investments
NI = net income
P(SEO offering) = a dichotomous variable based on asset size. Firms which had asset sizes > the mean were designated values of "1" while those with asset sizes < the mean were assigned values of "0."

4. Results

Annual observations over years 2002-2005 for 300 separate stocks in the final sample with the highest likelihood of being selected for seasoned equity offerings were subjected to a logistic regression with the probability of selection as dependent variable and capital expenditure, cash and short-term investments, debt reduction, current debt, dividends, long-term debt, and net income as independent variables. The final model used 1228 observations with 1031 correct cases thereby accurately predicting the probability of SEO offerings with 83.96 percent accuracy. As shown by Table 1, Hypothesis 1 was partly supported with the decline in both common equity but no significant reduction in debt as the coefficient for change in common equity was a significant -2.07×10^{-5}, $p<.01$ and that for debt reduction was a non significant -1.697×10^{-5}, $p>.1$. Hypothesis 2 was supported contrary to the hypothesized direction as the reduction in capital expenditure led to an increased probability of choosing SEOs as a method of financing (coefficient = -2.388×10^{-4}, $p<.001$). Hypothesis 3 was not supported. Firms that pay higher dividends as a percentage of assets are unlikely to seek SEOs as a method of financing ($\beta = -1.495 \times 10^{-4}$, $p>.1$).

Hypothesis 4 was not supported; there was no significant reduction in debt (coefficient of -1.697×10^{-5}, $p>.1$). We may conclude that long term debt reduction does not significantly influence the selection of firms for seasoned equity offerings. Hypothesis 5 was supported at the .1 level of significance ($\beta = 4.61 \times 10^{-6}$, $p<.1$), though not at the more stringent .05 level of significance (β = 4.61 x 10-6, p = .07). The reduction in current debt marginally increases the likelihood of selection for seasoned equity offerings. Hypothesis 6 was supported contrary to the hypothesized direction. Rising levels of cash and short-term investments, or a strong liquidity position, was associated with the likelihood of opting for seasoned equity offerings as the preferred method of financing (coefficient = 1.107×10^{-5}, $p<.01$). Hypothesis 7 was not supported; as Hypothesis 7 is the alternative to Hypothesis 4, the question is which of them is supported, a decrease (hypothesis 4) or an increase (hypothesis 7) to which the response is neither as there was no significant effect of the reduction in debt on the probability of selection for an SEO. The increase in net income was associated strongly with the choice of seasoned equity offerings (coefficient = 2.874×10^{-4}, $p<.001$) supporting Hypothesis 8.

5. Conclusions and Recommendations for Future Research

The sum total of all of the hypotheses indicates that firms are strong fundamentally are more likely to select seasoned equity offerings as a method of financing. Such firms have rising net incomes suggesting that they produce profitable products targeted at growing markets, either domestically or internationally. They do not necessarily pay high dividends and do not use a large amount of common equity to fund expansion. As common equity declines, they rely to an increasing extent on retained earnings or internal financing. They are averse to relying on financial leverage to fund expansion. The attitude towards debt is apparent in that they have declining levels of existing debt, or old debt that is in the process of being retired, without a firm policy of debt reduction, whereby they aggressively pay off existing debt. They maintain high and strengthening cash balances which reduce exposure in uncertain economic times and provide a cushion of capital in an economic downturn. This suggests a high level of conservatism even prior to the economic downturn of 2007-2009. Another relevant result is the decline in capital expenditures being associated with the probability of selection for seasoned equity offerings. At first glance, this may seem puzzling, given the implicit assumption that firms seek more expensive equity funding to finance capital projects. However, we need to be aware of the fact that our measure is of current capital expenditure. Perhaps these firms have reached their limit and are facing diminishing returns on current capital investment projects. Given their rising net incomes, it is likely that they wish to fund new, innovative projects with uncertain profit potential so that they do not wish to raise debt and choose equity as the optimal method of financing.

This study adds to the existing body of literature on the characteristics of firms that undertake seasoned equity offerings. Together with Walker and Yost (2008), it provides the only body of knowledge that seeks multiple characteristics to explain the choice of seasoned equity for financing. In addition, it is both contemporary and complete. The data set is very current using data from the post 2002 time period. It provides for a longer span of data than Walker and (2008) who employed two years of data versus four in this study. Our examination of the entire Compustat database with a full 10,000 list of stocks makes this study uniquely comprehensive.

Future research should consider operating performance as a determinant of seasoned equity offerings. The particularly relevant variable in this case is operating income after depreciation. Firms that invest in research and development by purchasing new equipment are able to write off significant amounts of this new cost as depreciation expense. This depresses their operating income after depreciation. As research and development expenditures continue to rise, it is likely that there will come a point at which a rapidly expanding firm will be unable to meet its research and development expenditures from internal funds. Debt would reduce the level of internal funding, so that equity financing in the form of SEOs offers the more attractive alternative. Another method of confirming the growing trend towards foregoing debt as a means of financing would be to use interest expense as a determinant of SEO offerings. The arguments against the use of debt apply to raising interest expense. Interest expense places a burden on operations and pressure on managers to generate sufficient income from operations to meet fixed payments. Declining interest expense is an indicator of declining dependence on debt and the increasing probability of relying upon new equity.

In summary, this paper adds to the literature on capital structure by focusing on the an area in which there is a paucity of research, i.e. on the firm characteristics that underlie the selection of stocks for seasoned equity offerings by offering a comprehensive approach to forecasting the prevalence of such offerings.

References

Ambarish, R., John, K., & Williams, J. (1987). Efficient signaling with dividends and investments. Journal of Finance, 42, 321-344.

Fama, E. & French, K. (2002). Testing trade-off and pecking order predictions about dividends and debt. Review of Financial Studies, 15, 1-33.

Hull, R. (1999). Leverage ratios, industry norm, and stock price reaction: An empirical investigation. Financial Management, 28, 32-45.

Hull, R., & Moellenberndt, R. (1994). Bank debt reduction announcements and negative signaling. Financial Management, 23, 21-30.

John, K., Koticha, A., Narayanan, R., & Subrahmanyam, M (2000). Margin rules, informed trading in derivatives, and price dynamics, Working paper, New York University.

Johnson, D., J. Serrano, & G. Thompson (1996). Seasoned equity offerings for new investments, *The Journal of Financial Research*, 19, 91-103.

Masulis, R., & A. Korwar (1986). Seasoned equity offerings: An empirical investigation. Journal of Financial Economics, 15, 31-60.

Mikkelson, W., and Partch, M. (1986) Valuation effects of security offerings and the issuance process, Journal of Financial Economics, 15, 31-60.

Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 13, 187-221.

Walker, M. D., & Yost, K. (2008). Seasoned equity offerings: What firms say, do, and how the market reacts. Journal of Corporate Finance, 14, 376-386.

Stigler, G. J. (1960). The economics of information. Journal of Political Economy, 69, 213-225.

Table 1: Results of Logistic Regression of the Probability of Selecting Seasoned Equity Offerings on Firm Characteristics

Variable	Coefficient	t -ratio
Capital Expenditure	$-2.388 \times 10^{-4***}$	-4.53, p = .0000
Common Equity	$-2.079 \times 10^{-5**}$	-2.73, p = .006
Cash and Short-Term Investments	$1.107 \times 10^{-5**}$	2.69, p = .007
Debt Reduction	-1.697×10^{-5}	-1.56, p = .117
Current Debt	-4.612×10^{-6}	-1.78, p = .074
Dividends	-1.495×10^{-4}	-1.33, p = .184
Long-Term Debt	$-1.378 \times 10^{-4***}$	-9.28, p = .00
Net Income	$2.874 \times 10^{-4***}$	8.29, p = .00
Percent Accuracy	83.96	
Average Likelihood	0.576	
Pseudo R^2	-0.225	

*p<.05, **p<.01, **p<.001

Table 2: Descriptive Statistics for Firm Characteristics

Capital Expenditure N = 1228			
Mean	1461	Skewness	4.98
Variance	824404.00	Kurtosis	37.70
25th Percentile	0		
Median	444.5		
75th Percentile	1608.25		
Maximum	33274		
Minimum	0		

Common Equity N = 1228			
Mean	11085	Skewness	3.12
Variance	2.4904×10^8	Kurtosis	12.18
25th Percentile	1911		
Median	6445		
75th Percentile	12823.25		
Maximum	111412		
Minimum	0		

Cash and Short-Term Investments N = 1228			
Mean	9250.59	Skewness	6.33
Variance	9.113×10^8	Kurtosis	47.44
25th Percentile	207.75		
Median	1462.5		
75th Percentile	4612.25		
Maximum	339136		
Minimum	0		

Debt Reduction N = 1228			
Mean	4104.33	Skewness	10.24
Variance	3.21×10^8	Kurtosis	120.78
25th Percentile	0		
Median	617		
75th Percentile	2248.00		
Maximum	280684		
Minimum	0		

Current Debt N = 1228			
Mean	19379.97	Skewness	6.09
Variance	2.94×10^9	Kurtosis	43.79
25th Percentile	1315.25		
Median	5626		
75th Percentile	12287.75		
Maximum	542569		
Minimum	0		

Dividends N = 1228			
Mean	486.60	Skewness	4.67
Variance	1168108.98	Kurtosis	26.52
25th Percentile	0		
Median	107		
75th Percentile	501		
Maximum	9352		
Minimum	0		

Long Term Debt N = 1228			
Mean	4179.23	Skewness	5.15
Variance	75399151.77	Kurtosis	41.76
25th Percentile	0		
Median	0		
75th Percentile	5619.25		
Maximum	105502		
Minimum	-24615		

Net Income N = 1228			
Mean	1335.12	Skewness	1.13
Variance	9397749.18	Kurtosis	19.59
25th Percentile	0		
Median	623		
75th Percentile	1743		
Maximum	24521		
Minimum	-25780		