

On the Conditioning of the Financial Market's Reaction to Seasoned Equity Offerings*

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Abstract

Consistent with asymmetric information arguments, prior research has shown that the financial market typically responds negatively to the announcement of a seasoned equity offering (SEO). Korajczyk and Levy (2003), however, suggest that while some firms time the issuance of their common stock to take advantage of outside investor overvaluations, financially constrained firms do not. We examine whether prior information on how financially constrained a firm is along with its growth prospects influences the financial market's response to the firm's announcement to sell common stock. We find evidence that the financial market does condition its response upon such information using a sample of SEOs from the U.S. Our results also have implications for the financial market's reaction to SEOs/rights offerings in emerging markets.

I. Introduction

Prior evidence suggests that, on average, the market reacts negatively to the announcements of seasoned equity offerings (SEOs) (see Asquith and Mullins (1986), Masulis and Korwar (1986), and Mikkelson and Partch (1986) for U.S. evidence). The leading explanations for the negative reaction to SEO announcements are based upon managers having private information that outside investors do not have. One explanation, developed in Myers (1984) and Myers and Majluf (1984), suggests that

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managers seek to serve the interests of current shareholders by issuing additional stock only when either the company's stock is overvalued based on managers' private information about the company or when the company lacks demonstrably good investment prospects. Another explanation is the timing argument first presented in Baker and Wurgler (2002). Baker and Wurgler argue that a firm's current capital structure is primarily an artifact of its managers' past efforts to time the market in the issuance of securities.¹

LaPorta *et al.* (1997) argue that firms located in emerging markets are characterized by high levels of information asymmetry. This suggests that the investors in emerging markets would react more negatively to the announcements of SEOs. However, Ariff and Finn (1989), Kang (1990), Tsangarakis (1996), and Lukose and Sapar (2004) find positive market reactions to announcements of rights issues in Singapore, Korea, Greece, and India, respectively.²

The differences in market reaction to equity offerings around the world demand an investigation of conditions that may explain those differences. Tsangarakis (1996) finds that the rights issues in Greece are perceived as conveying positive information about the firms' future prospects. He points out that the large ownership concentration in developing markets may mitigate the agency and adverse information effects compared to developed markets with large ownership dispersion. He also notes that different institutional settings may impact the market reaction to equity issues. Similarly, Bigelli (1998) finds a positive market reaction to combined rights offerings in Italy and shows two factors to be effective in explaining the contrasting market reaction to European rights issues when compared with the U.S. public equity issues: active insiders and an increase in the dividend yield associated with the rights offering.

Consistent with the earlier arguments, Baker and Wurgler (2000) find that when the percentage of new equity is higher than normal for their sample of U.S. firms, low stock market returns usually follow, which is consistent with overvaluation at the time of equity issuance. Examining a sample of seasoned equity offerings in the U.S., Long, Malitz, and Sefcik (1992) find that the stocks of firms issuing seasoned common equity are significantly overvalued in the market prior to the issue but

¹ Strictly speaking, the timing argument does not require managers to have private information that other investors do not if they only time relative to past prices instead of relative to future prices.

² In most European and Asian equity markets firms sell seasoned equity almost exclusively through rights offerings.

decline to their original levels in the year following. Moreover, Denis and Sarin (2001) focus on a sample of U.S. companies and examine the stock price reaction to earnings announcements in the five years following SEOs. On average, post-SEO announcements have a significantly negative abnormal stock price reaction. This finding is consistent with the hypothesis that firms issue equity when the market overestimates the firms' future earnings performance, which is consistent with the notion that managers are using private information to time the issuance of common stock.

Such behavior, however, might not be true for all firms. Recently, Korajczyk and Levy (2003) investigate how macroeconomic conditions affect capital structure choice. They model target capital structures as a function of macroeconomic conditions and firm-specific variables, splitting their U.S. sample based on a measure of financial constraints. They find that macroeconomic conditions are significant for issue choice for financially unconstrained firms but less so for financially constrained firms. Their conclusion is that financially unconstrained firms are able to time their issue choice to periods when macroeconomic conditions are favorable, but financially constrained firms have to go to the markets when they need funds.

If Korajczyk and Levy's (2003) conclusion is correct, then one should expect to observe a difference in the market's reaction to a firm's announcement of a plan to sell stock if the market recognizes that financially constrained firms are not timing the market's misvaluation of their stock. This argument leads us to conjecture that the market's response to the announcement of an SEO will be conditioned upon prior information about the firm's growth prospects and lack of financial resources.

In this connection, it is worth noting that prior literature suggests that the market does not condition on a firm's growth prospects alone. Brous and Kini (1992) examine whether revisions in analysts' earnings forecasts and abnormal stock returns associated with equity offering announcements are related to the issuing firm's Q ratio. They find an inverse relation between revisions in analysts' earnings forecasts and Q ratios, but no relation between announcement-period abnormal returns and Q ratios for their sample of U.S. firms. Denis (1994) also examines the relation between the market reaction to primary SEO announcements and alternative measures of the profitability of the issuing firm's growth opportunities and concludes that investment opportunities play, at best, a minor role in explaining the cross-sectional distribution of equity offering

announcement effects for his U.S. sample. Consequently, good investment prospects alone are not sufficient to shape the market's reaction to the announcement of a seasoned equity offering.

To test our hypothesis that the market's response to the announcement of an SEO will be conditioned upon prior information about the firm's growth prospects and lack of financial resources, we organize this paper as follows. Section II provides a description of the sample and sources of data on sample firms. Section III describes various ways of measuring an announcing firm's growth prospects and lack of financial resources. Section IV presents the analysis of the market's reaction to the announcement of an SEO conditional on proxies for a firm's growth prospects and lack of financial resources. Section V summarizes the paper and presents the conclusions. Consistent with our hypothesis, we find evidence that the market does condition its response to the announcement of an SEO on prior financial information about both the firm's growth prospects and its lack of financial resources. Our evidence, thereby, supplements the evidence provided in Korajczyk and Levy (2003) on the heterogeneity of firms issuing seasoned equity.

II. Sample and Data Sources

To obtain our sample, we first identify all sales of common stock in the United States from January 1990 through December 1998 in the Securities Data Corporation's (SDC) New Issues Database. We then delete from that list all initial public offerings of common stock to derive a list of seasoned common stock offerings. To be consistent with some prior research, we delete foreign firms, financial institutions, and regulated utilities from the sample. If there are multiple seasoned equity issues for a sample firm, we keep only the first offering as D'Mello, Tawatnuntachai, and Yaman (2003) show that the market reaction becomes less negative for successive issues of industrial firms. As a result, our final sample consists of 971 SEOs. We supplement the information from the SDC's New Issues Database with financial data from Compustat and stock price data from Center for Research in Security Prices (CRSP).

III. Measurement of a Firm's Growth Prospects and Lack of Financial Resources

Clearly, testing of our hypothesis depends on how one measures a firm's growth prospects and lack of financial resources. Unfortunately, there is no common agreement in the literature on how to measure either firm characteristic. Consequently, we start with Korajczyk and Levy's (2003)

method of identifying “financially constrained” firms and “growth” firms, and explore several alternative approaches to test the robustness of our results to the definitions employed.

(i) Method 1

Korajczyk and Levy (2003) define “financially constrained” firms as firms that (a) do not have net repurchases of debt or stock and do not pay cash dividends, and (b) have a Tobin’s Q greater than one. They identify “growth” firms based on the level of capital expenditures as a fraction of assets, the level of selling expenses as a fraction of sales, and Tobin’s Q. Therefore, our first method defines a “financially constrained” firm as one that (1) does not have a net repurchase of stock in the year preceding the event, (2) does not have a net repurchase of debt in the year preceding the event, (3) does not pay cash dividends in the year preceding the event, and (4) has a Tobin’s Q greater than one, where Tobin’s Q is defined as $(\text{Market Value of Equity} + \text{Book Value of Debt}) / \text{Book Value of Assets}$, following Korajczyk and Levy (2003). A “growth” firm, on the other hand, is one that (1) has capital expenditures as a fraction of assets greater than the mean of all firms, (2) has selling expenses as a fraction of sales greater than the mean of all firms, and (3) has a Tobin’s Q greater than one.

(ii) Method 2

Method two is identical to method one except that instead of zero dividends, a low dividend payout is used, and the restriction concerning the repurchase of debt is eliminated. To be specific, our second method defines a “financially constrained” firm as one that (1) does not have a net repurchase of stock in the year preceding the event, (2) has a dividend payout less than ten percent of earnings, and (3) has a Tobin’s Q greater than one. The identification of “growth” firms remains the same as in the first method. Effectively, method 2 relaxes the definition of “financially constrained.”

(iii) Method 3

As a third approach, we use a “debt to assets” ratio and a “financing” ratio to identify “financially constrained” firms. The “debt to assets” ratio is defined as the sum of short-term debt and long-term debt divided by the firm’s book value of assets. The “financing” ratio is defined as the difference between capital expenditures and retained earnings divided by the firm’s book value of assets. A firm is “financially constrained” if it (1) does not have a net repurchase of stock in the year preceding the event, (2) does not pay

dividends in the year preceding the event, (3) has a “debt to assets” ratio greater than the median of all firms, and (4) has a “financing” ratio greater than the median of all firms. To identify firms with growth opportunities, a different estimate of the Q ratio is used. Specifically, we follow Smith and Watts (1992) and use their definition of Tobin’s Q ratio: (Book value of assets – book value of common stock + market value of common stock) divided by the firm’s book value of assets. We classify firms as “growth” firms if their Q ratio is greater than the mean of all the companies’ Q ratios.

(iv) Method 4

Method four is a variation of method three in which the no net repurchase of stock requirement is dropped and the definition of “financing” ratio is altered. The “financing” ratio is now defined as [capital expenditures – (cash flow from operations - repurchases of stock)] / book value of assets. A firm has financial constraint if it (1) does not pay dividends in the year preceding the event, (2) has a “debt to assets” ratio greater than the median of all firms, and (3) has a “financing” ratio greater than the median of all firms. Classification of “growth” firms remains the same as in method three.

Table-1 summarizes the different criteria used to classify firms according to each method:

Table-1: Classification of Firms According to Different Methods

Method	With Financial Constraint	Without Financial Constraint	High Growth	Low Growth
1	(1) no net repurchase of stock in the year preceding the event, (2) no net repurchase of debt in the year preceding the event, (3) no dividend payment in the year preceding the event, and (4) Tobin's Q greater than one, where Tobin's Q is defined as $(\text{Market Value of Equity} + \text{Book Value of Debt}) / \text{Book Value of Assets}$	otherwise	(1) capital expenditures as a fraction of assets greater than the mean of all firms, (2) selling expenses as a fraction of sales greater than the mean of all firms, and (3) Tobin's Q greater than one	otherwise
2	(1) no net repurchase of stock in the year preceding the event, (2) dividend payment less than ten percent of earnings, and (3) Tobin's Q greater than one, where Tobin's Q is defined as $(\text{Market Value of Equity} + \text{Book Value of Debt}) / \text{Book Value of Assets}$	otherwise	(1) capital expenditures as a fraction of assets greater than the mean of all firms, (2) selling expenses as a fraction of sales greater than the mean of all firms, and (3) Tobin's Q greater than one	otherwise
3	(1) no net repurchase of stock in the year preceding the event, (2) no dividend payment in the year preceding the event, (3) debt to assets ratio greater than the median of all firms, and (4) financing ratio greater than the median of all firms, where debt to assets ratio is defined as the sum of short-term debt and long-term debt divided by the firm's book value of assets, and financing ratio is defined as the difference between capital expenditures and retained earnings divided by the firm's book value of assets	otherwise	Q ratio greater than the mean of all companies' Q ratios, where the Q ratio is defined as $(\text{book value of assets} - \text{book value of common stock} + \text{market value of common stock}) / \text{firm's book value of assets}$ following Smith and Watts (1992)	otherwise
4	(1) no dividend payment in the year preceding the event, (2) debt to assets ratio greater than the median of all firms, and (3) financing ratio greater than the median of all firms, where debt to assets ratio is defined as the sum of short-term debt and long-term debt divided by the firm's book value of assets, and financing ratio is defined as $[\text{capital expenditures} - (\text{cash flow from operations} - \text{repurchases of stock})] / \text{book value of assets}$	otherwise	Q ratio greater than the mean of all companies' Q ratios, where the Q ratio is defined as $(\text{book value of assets} - \text{book value of common stock} + \text{market value of common stock}) / \text{firm's book value of assets}$ following Smith and Watts (1992)	otherwise

IV. Results

If our hypothesis is correct, then the market recognizes the differences between “growth” firms that are “financially constrained” and other firms in how it reacts to their announcement of the sale of seasoned equity. More specifically, the announcement period abnormal returns for firms classified as “financially constrained” and with “high growth” prospects should be insignificantly different from zero, while these same announcement period abnormal returns should be significantly negative for firms classified in the other categories, particularly those identified as “financially unconstrained” and with “low growth” prospects. To summarize our expectations, Table-2 presents the predicted market reaction to SEO announcements for firms according to their financial constraints and growth opportunities:

Table-2: Predicted Market Reaction to Seasoned Equity Offering Announcement

	Low Growth	High Growth
With Financial Constraint	Negative and Significant Effect	Insignificant Effect
Without Financial Constraint	Negative and Significant Effect	Negative and Significant Effect

To test these expectations, we investigate the market’s reaction to the seasoned equity offering using a standard event study methodology. First, we identify as event date the announcement date of the seasoned equity offering. Second, we obtain daily returns for the sample firm and the S&P 500 Index. Third, we define the estimation period from 80 days prior to the announcement till 10 days prior to the announcement, and estimate the following market parameters for each firm during this period:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \quad t = [-80, -10]$$

where R_{it} is the return on stock i for day t , α_i is the constant term for stock i , β_i is the beta for stock i , R_{mt} is the S&P 500 Index return on day t , and ε_{it} is the error term.

The three-day window (the day before, the event day, and the day after) surrounding the announcement day is considered as the event period.

In order to find the abnormal returns during the event period, we utilize the estimated alpha and beta from the estimation period.

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt}, \quad t = -1, 0, 1$$

where AR_{it} is the abnormal return on stock i for day t . We then use the abnormal returns to compute the cumulative abnormal return over the event period:

$$CAR_i = \sum_{t=-1}^1 AR_{it}.$$

Next, we examine the significance of these abnormal returns for each of the four groups identified according to the four methods introduced in the previous section. We use Brown and Warner (1980) to compute the t-statistics. Table-3 Panel A reports the results of using Korajczyk and Levy's (2003) identifications of "financially constrained" and with "good growth" prospects. The reported results are consistent with our hypothesis: the market does not react significantly negatively to the announcement of seasoned equity offerings by "financially constrained" firms with "good growth" prospects. Further, and just as importantly, the market reacts significantly negatively to the announcement of seasoned equity offerings by "financially unconstrained" firms with "poor growth" prospects.

Table-3: Market Reaction According to Different Groupings

Panel A: Method 1 Grouping		
	Low Growth	High Growth
With Financial Constraint	-0.044 (-5.36)** n=75	-0.011 (-0.28) n=7
Without Financial Constraint	-0.030 (-12.31)** n=862	-0.040 (-4.11)** n=27
Panel B: Method 2 Grouping		
	Low Growth	High Growth
With Financial Constraint	-0.031 (-10.01)** n=443	-0.025 (-1.87)* n=25
Without Financial Constraint	-0.031 (-9.02)** n=494	-0.059 (-3.50)** n=9
Panel C: Method 3 Grouping		
	Low Growth	High Growth
With Financial Constraint	-0.027 (-3.97)** n=137	-0.024 (-1.78)* n=19
Without Financial Constraint	-0.034 (-11.25)** n=589	-0.028 (-6.54)** n=226
Panel D: Method 4 Grouping		
	Low Growth	High Growth
With Financial Constraint	-0.028 (-5.52)** n=159	-0.027 (-2.01)* n=21
Without Financial Constraint	-0.033 (-10.52)** n=567	-0.029 (-6.45)** n=224

*Abnormal returns are reported with t-statistics in parenthesis followed by the number of observations for each group. * and ** indicate statistical significance at the 10 percent and 5 percent levels, respectively.*

To examine the robustness of these results we relax how we measure whether a firm has financial constraints and good growth prospects. First, in Table-3 Panel B we report the results of relaxing our definition of “financially constrained” to allow more firms to be identified as being such. As one might expect, the differences become less pronounced and the market reaction to the “financially constrained” group with “good growth” prospects is significantly negative at the 10 percent level, but not so at the 5 percent level.

Similarly, in Table-3 Panels C and D, we report results for when we relax first how we measure a firm’s “growth” prospects, and then how “financially constrained” it is. Again, as in Panel B, the differences become less pronounced and the negative market reaction for the “financially constrained” group with “good growth” prospects is significant at the 10 percent level, but still not significant at the 5 percent level. Altogether the above reported results are consistent with our hypothesis that the market conditions its response to a firm’s announcement of its intent to sell seasoned equity upon available information about the firm’s lack of financial resources and possession of good growth opportunities.

V. Summary and Conclusions

Prior research has tended to find evidence consistent with the argument that firms time the secondary issuance of stock to take advantage of managers’ private information. Korajczyk and Levy (2003), however, recently provide evidence that only some firms time their issuance of stock, while other firms are so “financially constrained” that they must issue stock in order to act on their growth options. We conjecture that the market recognizes these differences and reacts to seasoned equity announcements accordingly.

To test this conjecture, we identify a sample of 971 SEO announcements from the U.S. and allocate these firms to one of four groups according to whether they were “financially constrained” or not, and whether they possess “good growth” prospects or not. We find that the market’s reaction to SEO announcements of those firms identified as being “financially constrained” and possessing “good growth” prospects is insignificantly different from zero, while the market’s reaction to the same announcement by firms classified as “financially unconstrained” and lacking “good growth” prospects is significantly negative. These contrasting results are consistent with our hypothesis in that the market reacts differently to a firm’s announcement of a seasoned equity offering based upon its growth prospects and the availability of financial resources.

Overall, our evidence not only supplements the evidence provided in Korajczyk and Levy (2003) on the heterogeneity of firms issuing seasoned equity but also contributes to the research investigating the factors that mitigate the negative market reaction to seasoned equity offerings announcements. For example, Hadlock, Ryngaert, and Thomas (2001) focus on a sample of 641 seasoned equity offerings in the U.S. during 1983-1994 and find that firm diversification is one such factor.

Daniel, Hirshleifer, and Subrahmanyam (1998) propose a theory of securities market under- and overreactions based on two psychological biases: investor overconfidence about the precision of private information and biased self-attribution. They show that overconfidence implies negative long-lag autocorrelations, excess volatility, and public-event-based return predictability especially when managerial actions are correlated with stock mispricing. Their theory implies that investors overreact to private information signals and underreact to public information signals. To the extent that the negative market reaction to seasoned equity offerings is an overreaction, the lack of such a reaction, as we observe for the “financially constrained” firms with “good growth” prospects, would be consistent with the heterogeneity of seasoned equity offerings in terms of the information content of their announcements.

Our evidence and the theory proposed by Daniel, Hirshleifer, and Subrahmanyam (1998) can also shed light on the differences in market reaction to SEO announcements in different markets across the world. The lack of negative market reaction to SEO announcements in emerging markets may be due to the fact that the firms performing these SEOs are usually not characterized as “financially unconstrained” and lacking “good growth” prospects by the investors in those markets. It could also be due to variations in the signaling effect of the information content of seasoned equity announcements across the world. Our findings highlight the need for future work that aims to better understand the determinants of market reaction to SEO or rights offering announcements in emerging markets taking into account the different institutional settings and the potentially different mix of companies coming back to these markets for raising more equity capital.

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