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AUTHORS	William J. Bertin David Michayluk Laurie Prather
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William J. Bertin (Australia), David Michayluk (Australia), Laurie Prather (Australia)

Liquidity issues surrounding neglected firms

Abstract

The neglected firm effect is the phenomenon where stocks of less widely-known firms have larger returns than that predicted by asset pricing models. Researchers have found mitigating variables, such as the price of the stock, that have partially explained the performance of neglected firms. Neglect and price may be proxies for the liquidity of each firm's stock, and the higher observed returns may actually be a premium for the lack of liquidity. This paper compares two definitions of neglect and their relationship with liquidity. When neglect is measured by the number of analysts following a stock, more analysts are associated with higher liquidity for the stock. An even stronger relationship is observed when the proxy for neglect is widely disseminated earnings announcements. These results are confirmed in regression analyses that control for the stock price.

Introduction

The possibility of finding abnormal returns associated with neglected firms is appealing to investors seeking to exploit pricing discrepancies. Alternatively, these returns may simply reflect a risk-based and/or a liquidity premium for these firms. As with any pricing relationship, the determination of the abnormal return depends on proper assessment of risk and return, and the problems associated with both market efficiency and proper model specification make this a joint test[1]. Earlier studies reveal a relationship between a firm's neglect and the price of its stock or its market capitalization. These variables, however, are not intuitively appealing as justifications for a return premium in an efficient market, since managers could simply perform a reverse stock split to increase the price of a stock to lower their equity cost of capital. Hence an examination of the relationship between neglect and liquidity may shed some light on the pricing issue.

The relationship between neglect and liquidity is complex. One example of this complexity is the case of lower priced stocks, since they are likely to have higher percentage bid-ask spreads due to the nature of the pricing grid. Further, these lower priced stocks may be excluded from portfolios requiring the arbitrary 'prudent man' rule of investing in stocks with values greater than $5, resulting in legitimately neglected stocks. Yet all facets of liquidity are not necessarily related to price, and thus other liquidity components should be considered. By examining different measures of liquidity, the explanatory power of neglect upon returns can be better ascertained.

As the literature suggests the definition of neglect can be quite arbitrary, creating difficulties in precisely determining what constitutes neglect. Defining different classifications will assist in understanding the meaning of neglect and establishing those elements that comprise it. Thus we consider the impact of liquidity on neglected firms based on different neglect classifications.

This paper proceeds as follows: Section 2 examines the concept of neglected firm in prior research. Data and methodology are explained in Section 3. Results are reported in Section 4, while Section 5 concludes.

1. Neglected firms

By their nature neglected firms are defined as not being included in a group of firms that receive attention from the investment community. Arbel and Strebel (1983) measured attention in terms of the number of analysts who regularly follow a stock, and divided their sample of stocks into three groups. During the period of 1970-1979, they found that the returns of neglected firms were higher than more widely-followed firms, although volatility was also higher. These firms had a lack of information and limited institutional interest leading the authors to suggest a possible inefficiency of pricing because these small firms were not followed. They further suggested that there may be a premium associated with the risk of a firm that does not have as much information available. This finding is particularly distressing as the number of analysts has declined with the separation of analysts from the investment banking function following the conflict of interest controversy on Wall Street.

Institutions may also play a role in the pricing of firms. Arbel, Carvell and Strebel (1983) and Arbel (1985) argue that institutional forces and transactions costs can delay the process of information incorporation for less visible, segmented firms. This

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[1] See Roll (1977).

finding suggests that proper marketing may enhance the pricing of these firms, although this activity may be futile in an efficient market.

More recently Beard and Sias (1997) sorted the performance of 7,117 stocks between 1982 and 1995 by both the degree of neglect defined as the number of security analysts following the stock and by market capitalization. Using neglect alone, the authors found that neglected firms outperformed widely followed firms, however, when combining neglect with market capitalization, the effect of neglect was subsumed by the small stocks. The authors conclude that the return premium is a premium for small stocks during the period.

The literature also examines neglect relating to the degree of uncertainty regarding each firm as Jo (2003) finds that neglected firms have more uncertainty. Jo further suggests that neglected firms are identified as not necessarily being of lower quality, but of an uncertain quality that may be low and thus undesirable. If neglect is considered to be a measure of uncertainty, then the discount rate for the neglected firms in any valuation analysis would be larger resulting in a firm value reduction.

Neglect can also be considered to be the time delay involved as firms respond to information. Barry and Brown (1984) proxy neglect by the availability of information and find it predicts stock returns after adjusting for firm size. Using weekly data, Hou and Moskowitz (2003) find that the most severely delayed firms command a large return premium that captures the size effect and half the value premium. They use traditional liquidity proxies and find no premium or predictability associated with the explanatory power of cross-sectional returns once their empirically-determined measure of time delay response is included. Although the lack of liquidity may be arguably the cause of this delay, their time delay variable is a stronger explanatory measure than their liquidity measures. It is not surprising that regression-determined response measures have explanatory power in the cross-section, and Hou and Moskowitz acknowledge that the small segment of neglected firms (0.02% of the market) captures a sizeable amount of the cross-sectional variation in average returns.

2. Data and methodology

This analysis considers all firms in the 2000 CRSP database with share classification code of 10 or 11. While this code restriction excludes preferred stock, REITs, ADRs and closed end funds, the sample is further reduced to include only those stocks on the New York Stock Exchange (NYSE). The final sample consists of 1,544 firms grouped according to two different neglect classifications. First, using the

First Call – IBES database, the number of analysts following each stock is recorded and four neglect groupings are identified. The first group contains those firms with no analyst following, group two consists of firms with only one analyst, and groups three and four identify those firms with two to five and six or more analysts, respectively. The second neglect category is based on reported earnings for each firm during the year. The reported earnings announcements are hand collected from the E*trade online broker's website.

Table 1 reports that of the total sample of 1,544 stocks, the IBES database includes 76 firms with no analysts, 53 firms with one analyst, 253 with two to five analysts, and 1,162 with more than five analysts. Additionally, 721 of the firms' earnings announcements are reported on the website, and 823 of the firms do not. Those firms with reported earnings are classified as having widely-disseminated earnings announcements (WEarnings) and those without reported earnings are classified as not having widely-disseminated earnings (No WEarnings). As indicated in Table 1, identifying neglect based on the number of analysts suggests that most of the firms are not neglected as only 76 and 53 fall into the no and one analyst categories, respectively. The number of firms with No WEarnings, however, suggests a greater overall potential for neglect with the no and one analyst classified firms having the greatest potential.

The New York Stock Exchange Trades and Quotes database provides intraday data to analyze liquidity. This paper examines friction measures (the cost of trading) as well as activity measures (the ability to trade). Friction measures include the bid-ask spread variables, while activity measures consider quoted depth and volume variables.

In order to analyze the relationship between the neglected firm return premium and liquidity, the following hypotheses are formulated and tested:

H_0: There is no difference in liquidity across neglect groups.

H_A: There are differences in liquidity across neglect groups.

The hypotheses are tested using both the parametric ANOVA and the non-parametric Wilcoxon rank-sums statistics. Regression analysis is also implemented to determine the impact of neglect on liquidity measures.

3. Results

Table 2 reports the quoted bid-ask spread for the sample of 1,544 firms during the year 2000. The

average quoted bid-ask spread is 0.0803 for stocks with widely disseminated earnings compared to 0.125 for their no earnings counterparts and the lower average bid-ask spread is statistically different using both parametric and non-parametric tests statistics (reported in the last two columns of the table). In each analyst subcategory the stocks with widely disseminated earnings have smaller quoted bid-ask spreads, however, only the subcategory of stocks with six or more analysts has a statistically significant difference at a level of 1% between the two earnings groups. For the subcategory of stocks that have between 2 and 5 analysts as shown on the IBES/First Call database, those stocks with widely disseminated earnings announcements have a much smaller quoted bid-ask spread, but the level of statistical significance is 10% for the parametric test and 5% for the non-parametric test.

It is also interesting to note that the larger the number of analysts is, the smaller the quoted bid-ask spread appears to be. Since there is only one widely disseminated stock in each of the first two analyst subgroups, no meaningful comparison can be made within these categories. However, when the 2-5 and 6 or more analyst subgroups are compared, the greater number of analysts results in smaller quoted bid-ask spreads. There is statistical significance across these four subcategories on an overall basis, and within the group of firms, both with and without wide dissemination of earnings.

The qualitative differences between the two groups suggest that both the number of analysts and the wide dissemination of earnings announcements are indicative of neglect and directly related to the quoted bid-ask spread. The wider quoted bid-ask spread for those stocks with earnings announcements that are not widely disseminated suggests that liquidity may be related to small investors. The number of analysts is also related to the quoted bid-ask spread but these two neglect measures are different.

Table 3 reports that the percentage bid-ask spread is approximately four times larger for those stocks without widely reported earnings announcements. On an overall basis, the percentage bid-ask spreads of 0.39% and 1.55% for firms with widely reported earnings and for firms without widely reported announcements, respectively, are significantly different at the 1% level. When the total observations are broken down into the analyst subcategories those stocks with 2-5 analysts and 6 or more analysts both have significant differences between the stocks with and without widely disseminated earnings announcements.

The quoted bid-ask spread and percentage bid-ask spread are relevant to small investors who may not obtain any price improvement on the NYSE. However, large investors may be able to obtain price improvement. Table 4 reports that the effective dollar bid-ask spread is larger for those firms without earnings announcements reported widely. These estimates are smaller than the quoted bid-ask spread reported in Table 2, but the same qualitative conclusions are observed. Similarly, Table 5 reveals that the effective percentage bid-ask spread is also larger for those firms without earnings announcements reported widely and the pattern of estimates is similar to the percentage quoted bid-ask spread.

Table 6 reveals that the bid depth as measured by the number of shares is larger for those stocks with widely disseminated earnings. This pattern is not consistent across each of the analyst subcategories. For those stocks with more than 5 analysts the depth is larger for those stocks with widely disseminated earnings. For those stocks with 2 to 5 analysts, there is a higher depth for those stocks without widely disseminated earnings. For this subcategory, the difference is not statistically significant using either parametric or non-parametric tests.

Table 7 reports the dollar bid depth is larger for those firms with widely disseminated earnings announcements. This pattern is consistent across the analyst subcategories that have 2-5 and more than 5 analysts and suggests that the inconsistent pattern observed in Table 6 using the number of shares is caused by the share price. When the dollar value of share offered at the bid depth is considered the shares of firms that have widely disseminated earnings is larger in both the analyst subcategory with 2-5 analysts and more than 5 analysts.

Table 8 reports ask depth in number of shares, and Table 9 reports the ask depth in dollar value of shares. The results are similar to the bid depth liquidity measures. For the subcategory of shares with more than 5 analysts, the dollar value of the shares on the ask side is much larger than the bid side, and there are much more shares offered than in case of fewer analysts. This finding suggests that the increased number of analysts allows the specialist to increase the number of shares offered perhaps because there is a lower likelihood of transacting with someone with better information since the increased number of analysts are generating information and reducing any informational asymmetry. There is an especially large increase in the dollar value of the ask side (Table 9) versus the bid side (Table 7) suggesting that there still remains more information asymmetry on the bid side of the bid-ask spread.

Table 10 reports the number of shares traded per day is much larger for those firms with widely disseminated earnings announcements. For the analyst subcategory of 2-5 analysts there is approximately twice as much volume for those firms with widely disseminated earnings announcements. For the analyst subcategory of more than 5 analysts, the volume is approximately ten times larger for those firms with widely disseminated earnings announcements. The daily dollar value of shares traded is an even larger multiple as reported in Table 11. Both of these tables suggest that the activity is related to the wide dissemination of earnings announcements and not necessarily the number of analysts following the stocks.

The average transaction size is reported in Table 12 and reveals that the wide dissemination of earnings corresponds with a larger average transaction size. For the analyst subcategories the multiple is 2 times larger for the 2-5 analysts but is over 4 times larger for the firms with more than 5 analysts. This finding suggests that larger investors use the wide dissemination of earnings as an indicator, but the greater effect for large investors is the number of analysts. This observation confirms the patterns observed when the total value of transactions was examined.

The final pattern examined across the two neglect categories is the percentage of transactions that occur within the spread. Table 13 reports the percentage of trades inside the bid-ask spread using the number of transactions. The only analyst subcategory where there is a statistical difference between the two percentages based on whether each firm's earnings announcements are widely disseminated occurs when there are more than 5 analysts. For this subcategory, firms with wide dissemination of earnings announcements have a higher percentage of trades inside the bid-ask spread. The difference between the two groups is slightly under 2% suggesting the difference may be economically insignificant.

A series of regression analyses is reported in Table 14. In these regressions the dependent variable is the liquidity variable examined in each of the earlier tables. The independent variables are two neglect proxies, as well as the stock price. Earlier literature on the neglected firm effect suggested that the neglected firm effect may be a manifestation of the price effect since smaller priced stocks may have lower liquidity. By explicitly including this variable the robustness of the results can be determined. The neglect proxies are set up as indicator variables. The first neglect measure (Neglect Wide) is an indicator variable equal to one if that firm's earnings announcements are widely disseminated. The second neglect variable (Neglect 6+) is an indicator

equal to zero if there are between 2 and 5 analysts, and equal to one if there are more than 5 analysts.

The results indicate that price is highly significant in each of the 12 regressions. The neglect proxy for wide dissemination of earnings is also significant in each of the 12 regressions. This proxy for neglect has a negative coefficient for the bid-ask spread liquidity measures indicating that those stocks with widely disseminated earnings announcements have smaller bid-ask spreads and higher 'friction-based' liquidity. The coefficients on the remaining 'activity-based' liquidity measures are all positive indicating that those stocks with widely disseminated earnings announcements have more activity and higher liquidity. Overall, these results indicate that price does have an influence on liquidity measures, but the effect does not subsume the neglect effect as measured by the wide dissemination of earnings announcements.

The neglect proxy for the number of analysts is significant for the bid-ask spread measures indicating that more analysts are associated with smaller bid-ask spreads and higher 'friction-based' liquidity measures. There is some significance for the other 'activity-based' liquidity measures. The coefficient for the neglect proxy is statistically significant at the 5% level for the dollar bid-depth and ask-depth liquidity measures. In addition, the coefficient for the neglect proxy is statistically significant at the 1% level for the transaction size liquidity measure. These results suggest that more analysts are associated with a larger transaction size and a high dollar amount offered at the bid and ask quotes. The coefficient for the neglect proxy is negative and statistically significant at the level of 10% for the percentage of transactions within the bid-ask spread. This result suggests that more analysts following a stock decrease the price improvement in the market and indicate a reduction in liquidity.

These results suggest that stock prices do influence the neglected firm effect, but the influence is separate from the proxy for neglect that is based on the wide dissemination of earnings announcements. The other proxy for neglect, the commonly used number of analysts, also exhibits some statistical significance even after controlling for the stock price effect and the other neglected firm proxy.

Conclusion

The two measures of neglect, the wide dissemination of earnings announcements and the number of analysts following each stock are characterized by very different liquidity features. While improved liquidity as measured by spread and volume variables

is associated with widely disseminated earnings announcements and greater analyst following, firms with widely disseminated earnings announcements but low analyst following experience lower liquidity relative to depth measures.

The two neglected firm proxies and the share price are included in regressions that seek to explain the changes in liquidity. The share price is found to be significant in each regression, while the neglected firm proxy based on the wide dissemination of earnings is robust when including the share price and the other neglected firm proxy in the regression. The other proxy is the number of analysts, which is statistically significant especially when friction liquidity measures associated with the bid-ask spread are included.

The main implications of these findings suggest that the neglected firm return premium is justified on the basis of liquidity cost. Firms seeking to reduce these costs may consider two possible methods. Activities that focus on increasing the number of analysts is one method, but our results indicate that the improvement in liquidity is more substantial when earnings announcements are widely disseminated. While it may be possible for companies to attract analysts, it may be more difficult to effect a wide dissemination of earnings announcements. The direction of causation between the wide dissemination of earnings announcements and the liquidity measures is unclear since additional liquidity may prompt wide dissemination or wide dissemination may increase liquidity. What is clear is that neglected firms, by whatever neglect construct, are much less liquid than their counterparts, and thus the observed return premium is a logical result.

References

1. Arbel, Avner and Paul Stebel (1982), The Neglected and Small Firm Effects, *The Financial Review* 7, 201-218.
2. Arbel, Avner, Steven Carvell and Paul Strebel (1983), Giraffes, Institutions and Neglected Firms, *Financial Analysts Journal* 39, 57-63.
3. Arbel, Avner and Paul Strebel (1983), Pay Attention to Neglected Firms! *Journal of Portfolio Management*.
4. Barry, C.R. and S.J. Brown (1984), Differential Information and the Small Firm Effect. *Journal of Financial Economics*.
5. Beard, Craig G. and Richard W. Sias (1997), Is There a Neglected-Firm Effect? *Financial Analysts Journal* 63, 19-23.
6. Edelmen, Richard B. and H. Kent Baker (1987), The Dynamics of Neglect and Return, *Journal of Portfolio Management* 14, 52-55.
7. Jo, Hoje (2003), Financial Analysts, Firm Quality, and Social Responsibility: Perspective from Behavioral Finance, *working paper*, Santa Clara University.
8. Hou, Kewei and Tobias J. Moskowitz (2003), Market Frictions, Price Delay, and the Cross-Section of Expected Returns, *working paper*, University of Chicago.
9. Roll, Richard (1977), A Critique of Asset Pricing Theory's Tests, *Journal of Financial Economics*, 129-176.

Appendix A

Table 1. Number of firms in each neglect category

Category	IBES Number of analysts				
	0	1	2-5	6+	Total
No WEarnings	75	52	228	468	823
WEarnings	1	1	25	694	721
Total	76	53	253	1162	1544

This table reports the number of NYSE firms in each of the two categories for neglect. The first category is the number of analysts as reported on the IBES tapes during the year 2000. The second category consists of firms with earnings announcements included in the E*Trade website source for financial data.

Table 2. Quoted bid-ask spread

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	*Mean*	0.1716	0.1335	0.1324	0.1132	0.125	8.3***	52.6***
	(S.D.)	(0.1689)	(0.0525)	(0.0601)	(0.1015)	(0.0994)		
WEarnings	*Mean*	0.156	0.0865	0.1111	0.079	0.0803	10.3***	20.0***
	(S.D.)			(0.0455)	(0.0309)	(0.0321)		
Total	*Mean*	0.1714	0.1326	0.1302	0.0927	0.1094	40.3***	208.2***
	(S.D.)	(0.1677)	(0.0524)	(0.0590)	(0.0705)	(0.0900)		
F		0	0.8	2.9*	68.7***	133.3***		
X2		0.1	1.2	4.5**	152.4***	295.0***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the quoted bid-ask spread for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 3. Percentage bid-ask spread

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	0.0164	0.0279	0.0193	0.0112	0.0155	12.8***	93.2***
	(S.D.)	(0.0228)	(0.0339)	(0.0267)	(0.0183)	(0.0229)		
WEarnings	Mean	0.0118	0.0039	0.0089	0.0037	0.0039	12***	29.9***
	(S.D.)			(0.0076)	(0.0043)	(0.0046)		
Total	Mean	0.1631	0.0275	0.0183	0.0067	0.0101	55.7***	328.9***
	(S.D.)	(0.0227)	(0.0337)	(0.0265)	(0.0126)	(0.0187)		
F		0	0.5	3.8**	107.2***	161***		
X2		0.1	2.2	7.2***	250.2***	464.1***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the percentage bid-spread for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 4. Effective bid-ask spread

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	0.1172	0.0926	0.0908	0.0769	0.0854	10.8***	58.9***
	(S.D.)	(0.1088)	(0.0377)	(0.0430)	(0.0577)	(0.0608)		
WEarnings	Mean	0.0948	0.0599	0.0610	0.0578	0.0584	2.3*	17.6***
	(S.D.)			(0.0534)	(0.0371)	(0.0369)		
Total	Mean	0.1169	0.0919	0.0893	0.0654	0.0727	37.7***	202.5***
	(S.D.)	(0.1081)	(0.0376)	(0.0421)	(0.0474)	(0.0527)		
F		0	0.7	2.8*	47.3***	106.3***		
X2		0	0.8	4.7**	131.7***	266.6***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the effective bid-spread for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 5. Effective percentage bid-ask spread

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	0.0116	0.0195	0.0162	0.008	0.0113	6.8***	91.9***
	(S.D.)	(0.0187)	(0.0233)	(0.0415)	(0.0145)	(0.0260)		
WEarnings	Mean	0.0072	0.0027	0.0061	0.0028	0.0029	5.5***	28.6***
	(S.D.)			(0.0053)	(0.0042)	(0.0042)		
Total	Mean	0.0116	0.0192	0.0152	0.0049	0.0074	28.1***	317.2***
	(S.D.)	(0.0186)	(0.0232)	(0.0395)	(0.0101)	(0.0196)		
F		0.1	0.5	1.5	81.3***	74***		
X2		0	2.1	6.9***	230.6***	436.3***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the effective percentage bid-spread for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 6. Bid depth

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	18.4	18.0	17.8	15.8	16.7	0.5	0.6
	(S.D.)	(33.4)	(18.8)	(28.3)	(24.9)	(26.4)		
WEarnings	Mean	12.5	16.4	12.4	19.1	18.9	1.4	9.3**
	(S.D.)			(5.9)	(16.4)	(16.1)		
Total	Mean	18.3	18.0	17.3	17.8	17.7	0.1	27.3***
	(S.D.)	(33.2)	(18.6)	(27.0)	(20.3)	(22.2)		
F		0	0	0.9	7.5***	3.5*		
X2		0	0.3	0.2	81.5***	97.9***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the bid depth for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 7. Dollar bid depth

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	251.4	185.0	175.3	244.0	222.0	4.1***	57.9***
	(S.D.)	(283.6)	(319.9)	(246.2)	(256.7)	(262.3)		
WEarnings	Mean	164.2	364.8	219.2	546.7	534.5	4.5***	31.3***
	(S.D.)			(145.4)	(457.4)	(453.7)		
Total	Mean	250.2	188.4	179.7	425.6	369.0	34.5***	256.5***
	(S.D.)	(281.9)	(317.7)	(238.2)	(416.9)	(397.0)		
F		0.1	0.3	0.8	166.9***	278.7***		
X2		0	2.1	4.9**	296.2***	458.6***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the dollar bid depth for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 8. Ask depth

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	20.5	18.2	18.5	18.1	18.4	0.3	4.8
	(S.D.)	(28.8)	(17.3)	(22.9)	(16.2)	(19.7)		
WEarnings	Mean	17.3	22.2	16.6	26.1	25.8	1.6	14***
	(S.D.)			(11.5)	(21.8)	(21.5)		
Total	Mean	20.4	18.3	18.3	22.9	21.9	3.9***	69.3***
	(S.D.)	(28.6)	(17.1)	(22.0)	(20.1)	(20.9)		
F		0	0.1	0.2	46.2***	48.7***		
X2		0.2	0.1	0.1	124.1***	170.6***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the ask depth for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that

time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 9. Dollar ask depth

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	284.7	208.3	210.7	319.0	279.0	11***	59.8***
	(S.D.)	(262.1)	(203.4)	(203.5)	(261.0)	(252.7)		
WEarnings	Mean	231.4	486.1	291.6	781.5	763.2	4.7***	30.6***
	(S.D.)			(207.5)	(667.6)	(662.5)		
Total	Mean	284.0	213.7	218.9	596.4	506.8	46.1***	258.9***
	(S.D.)	(260.4)	(284.6)	(204.9)	(588.0)	(546.5)		
F		0	0.1	3.5*	200.7***	370.8***		
X2		0.1	1.9	6.2**	292.2***	460.4***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the dollar ask depth for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 10. Daily volume – shares (1,000s)

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	189.2	60.4	83.2	189.1	151.8	7.9***	131.1***
	(S.D.)	(529.0)	(115.8)	(190.4)	(318.0)	(310.1)		
WEarnings	Mean	32.6	379.5	160.8	1540.5	1488.7	2.2*	47.3***
	(S.D.)			(149.9)	(2753.0)	(2713.5)		
Total	Mean	187.1	66.6	91.0	999.7	780.8	19.7***	416.3***
	(S.D.)	(525.7)	(122.9)	(187.9)	(2241.1)	(1989.6)		
F		0.1	7.5***	3.9**	110.1***	193.3***		
X2		0.1	2.5	21.6***	487.1***	731.9***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the daily volume for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 11. Daily volume – dollar value (1000s)

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	Mean	4164.7	1448.0	1864.6	4999.4	3834.6	7.1***	125.2***
	(S.D.)	(13516.7)	(3495.7)	(7350.7)	(9551.5)	(9281.2)		
WEarnings	Mean	433.4	8433.0	4744.8	57544.6	55558.2	2.3*	40.4***
	(S.D.)			(8286.1)	(105068.2)	(103571.6)		
Total	Mean	4114.3	1582.3	2154.9	36517.4	28171.0	19.7***	402.4***
	(S.D.)	(13430.9)	(3594.3)	(7482.7)	(85543.0)	(75868.2)		
F		0.1	3.9*	3.4*	114.6***	199.7***		
X2		0	2.1	18.6***	425.6***	671.4***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the daily volume for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of

difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 12. Average transaction size

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	*Mean*	101.4	42.4	72.0	156.4	120.9	19.4***	147.5***
	(S.D.)	(216.9)	(77.8)	(128.2)	(166.5)	(163.4)		
WEarnings	*Mean*	59	193.6	166.7	728.2	707.0	5.4***	43.2***
	(S.D.)			(159.3)	(730.3)	(725.0)		
Total	*Mean*	100.8	45.2	81.6	499.4	396.7	52.6***	437.1***
	(S.D.)	(215.5)	(79.8)	(134.4)	(639.8)	(588.9)		
F		0	3.7*	11.6***	273.2***	499.5***		
X2		0.5	2.5	24.1***	468.9***	730.2***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the transaction size for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 13. Percentage of volume inside the bid-ask spread

Category		IBES Number of analysts				Total	F	X2
		0	1	2-5	6+			
No WEarnings	*Mean*	0.4756	0.4833	0.4839	0.4731	0.4769	0.9	4.3
	(S.D.)	(0.1286)	(0.0880)	(0.0959)	(0.0731)	(0.0869)		
WEarnings	*Mean*	0.5476	0.4418	0.4815	0.4900	0.4898	0.6	2.9
	(S.D.)			(0.0871)	(0.0642)	(0.0649)		
Total	*Mean*	0.4766	0.4825	0.4836	0.4833	0.4830	0.2	0.95
	(S.D.)	(0.1279)	(0.0874)	(0.0949)	(0.0683)	(0.0776)		
F		0.3	0.2	0	17.1***	10.4***		
X2		0.7	0.6	0.2	14.5***	8.9***		

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the mean (standard deviation) of the percentage of volume inside the bid-spread for all firms traded on NYSE in the year 2000. The table is subdivided into those stocks that had earnings reported widely (WEarnings) and those without wide dissemination (No WEarnings). The table is further subdivided into categories based on the number of analysts reported on the IBES database at that time. Tests of difference are performed across the two wide dissemination groups as well as across all the analyst categories using parametric ANOVA tests and non-parametric Wilcoxon tests.

Table 14. Regression analysis

Reg#	Variable	Price	Neglect wide	Neglect 6+	R^2	F-value
1	Quoted bid-ask spread	0.0021***	-0.0538***	-0.0416***	0.41	323.5***
2	Percentage bid-ask spread	-0.0002***	-0.0061***	-0.0065***	0.19	110.2***
3	Effective bid-ask spread	0.0011***	-0.0292***	-0.0237***	0.38	280.7***
4	Effective percentage bid-ask spread	-0.0001***	-0.0043***	-0.0062***	0.09	46.9***
5	Bid-depth	-0.1946***	4.4810***	0.7814	0.05	23.7***
6	Dollar bid-depth	6.03***	227.04***	54.33**	0.29	185.7***
7	Ask-depth	-0.1822***	9.0097***	2.4264	0.08	39.5***
8	Dollar ask-depth	9.01***	349.66***	86.13**	0.34	239.0***
9	Daily volume-shares (1000)	5.3**	1206.0***	237.8	0.11	58.2***
10	Daily volume-dollar value	808.9***	41260.0***	3276.2	0.17	94.3***
11	Transaction size	5.51***	484.6***	104.5***	0.28	184.4***
12	% Volume inside bid-ask spread	0.0002**	0.0138***	-0.0095*	0.01	5.9***

Notes: * significance at 10%, ** significance at 5%, *** significance at 1%.

This table reports the regression coefficients of a series of regressions explaining liquidity measures. The independent variables are the two neglect measures as well as the price of the stock. The first neglect measure (Neglect Wide) is an indicator variable equal to one if that firm's earnings announcements are widely disseminated. The second neglect variable (Neglect 6+) is an indicator equal to zero if there are between 2 and 5 analysts, and equal to one if there are more than 5 analysts.