Block-ownership structure, bank nominee director and crash-risk

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Abstract

We study the effect of *outside* block-ownership on the future firm-specific crash-risk of Indian firms. Major and dedicated block-owners play a significant role in aggravating the firm's susceptibility towards crash-risk. Within a novel regulatory setup in India, where borrowing firms are entitled to a bank nominated board-member, we find an ancillary influence of bank nominee's presence in dissipating block-owners influence on firm-level crash-risk. These results support the *monitoring hypothesis* in alleviating future firm-level crash-risk. Our results are robust to alternate model specifications, different crash-risk and block-ownership measures, clustering, and an array of control variables.

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Keywords: Block-ownership, crash-risk, bank nominee, agency problem.

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We are responsible for all the remaining errors and the usual caveat applies.

1. Introduction

A little over eight decades ago, Berle and Means's (1932) seminal paper raised the daunting issue of agency problem stemming from the separation of ownership and control. Practitioners and academicians share common opinion that block-owners may effectively shrink the agency problem. By holding a significant share of the firm's equity, block-owners are likely to have higher incentives to safeguard their investment over minority shareholders. Consistent with *monitoring hypothesis* of agency problem, a number of studies in last three decades provide empirical evidence on the benefits of block-ownership. Simultaneously, if monitoring is expensive and an easy low-cost exit is possible, block-owners may also exacerbate rather than solve agency problem. Alternately, block-owners can maximize their private benefits rather than firm value (Hirschman, 1970), and worse, they may even collude with managers to optimize their personal benefits at the cost of long-term firm value (Bushee, 1998). Managers may also be tempted to withhold bad news since their performance and incentives are tied with stock prices (Kim et al., 2011). Jin and Myers (2006) argue that there is an upper bound to the extent of bad news that can be accumulated by managers. When the accumulation of bad news touches the threshold then it drains out at once and leads to a significant drop in stock prices.

Therefore an important question to investigate is, "Do block-owners mitigate the risk of managerial expropriation (withholding bad news) through their monitoring role?" If block-owners are apparent to be effective monitors, then their presence should diminish stock price crash-risk. Nevertheless, long-term benefits derived from effective monitoring are unlikely to align with the transient block-owners who are expected to hold stocks for short-term periods. Overall, the direction of the impact of block-ownership on crash-risk is debatable. In particular, we analyze how the incentives of managers to withhold bad news are influenced due to the presence of *outside* block-owners who have ability and motivation to monitor

managers. We focus on the emerging Indian market since investor risk is proportional to ownership concentration (LaPorta et al., 1998) and *inside* block-owners are likely to exercise inappropriate rights via complex ownership structure (Claessens et al., 2000). Since weak legal and regulatory institutions that offer inadequate protection to minority shareholders has led for a search of effective corporate governance mechanism, we believe that the role of block-owners has become more eminent as an external governance mechanism.

In this paper, following popular literature (Kim et al., 2011), we use two proxies of firm-specific crash-risk: (1) the negative conditional skewness of firm-specific daily return and (2) log of down-to-up volatility of firm-specific daily return. We find that block-ownership is positively and significantly related to one-quarter ahead crash-risk. We examine the impact of the investment horizon of block-owners on firm-specific crash-risk. Our empirical findings are in vein with *monitoring hypothesis*, *i.e.* dedicated long-term block-owners minimize the propensity of crash-risk while transient short-term block-owners adopt a myopic firm-value inflation motivation. We next examine whether the presence of a lending bank deputed nominee on the firm's board moderate the relationship of block-ownership and crash-risk. Corporate finance theories postulate that the manager of a highly leveraged firm prefers high-risk projects with lower probability of success compared to low-risk projects with higher probability of success (Jensen and Meckling, 1976). Generally in such firms, most of the benefits are cashed by the shareholders and most of the losses borne by the creditors. Basically lenders can discipline managers either by the threat of bankruptcy or by direct intervention in the decision making. Thus we study the direct role of lenders via bank nominated directors to discipline managers.

These findings contribute to existing literature in several ways. One, several studies that relate *overall* block-owners with various parameters, *viz.* information efficiency (Boehmer and Kelley, 2009), firm-specific information (Brockman and Yan, 2009) and

corporate governance (Chung et al., 2010), show that institutional investors increase future crash-risk for developed markets but in this paper, we relate *outside* block-ownership with stock price crash-risk in the emerging economy where weak legal and regulatory efficacy offer inadequate protection to retail investors. Two, by focusing towards block-owners, our study adds to the literature that explains the complexity of the separation of ownership from control. Finally, we establish that in the presence of a weak institutional setup with a greater likelihood of expropriation, the role of creditors (banks) towards effective corporate governance is potentially far more critical.

2. Data and variable construction

2.1 Data

Our sample period is from 2001 to 2012, covering the firms listed on National Stock Exchange and Bombay Stock Exchange of India. Primary source of firm-level data *i.e.* both stock-prices and accounting data is obtained from the Prowess database compiled by the Centre for Monitoring Indian Economy (CMIE). Prowess also provides shareholding data of the firms on a quarterly frequency. After including quarterly observations for the firms with the firm-level equity, block-ownership shareholding, and accounting data available from Prowess, our final sample includes 45,878 firm-quarter observations.

2.2 Measuring stock crash-risk

Following Kim et al. (2011), we incorporate two measures of crash-risk – negative conditional skewness (*NCSKEW*) and down-to-up volatility (*DUVOL*) of firm-specific daily returns. Firm-specific daily returns are estimated using the natural log of one plus residual returns, denoted by *W*, from the following extended market model:

$$r_{i,t} = \alpha_j + \beta_{1,i} rm_{m,t-2} + \beta_{2,i} rm_{m,t-1} + \beta_{3,i} rm_{m,t} + \beta_{4,i} rm_{m,t+1} + \beta_{5,i} rm_{m,t+2} + \varepsilon_{i,t} \quad (1)$$

Here $r_{i,t}$ is daily return of stock *i* on trading day *t*, and $rm_{m,t}$is daily market return (S&P NIFTY 500 index) on trading day *t*. In order to account for the effect of non-synchronous

trading, we include up to two days of lag and lead market return terms in *EQ1*. Next, for every quarter *q*, *NCSKEW*, a proxy for crash-risk, is estimated by dividing the negative of the third moment of quarterly firm-specific daily returns with the standard deviation of firm-specific returns for firm *i* in quarter *q*:

$$NCSKEW_{i,q} = -[n\,(n-1)^{\frac{3}{2}}\,(\sum W_{1,q}^{3}\,)/(n-1)(n-2)(\sum W_{1,q}^{2})^{3/2}\,] \qquad (2)$$

Here *n* is the number of firm-specific return observations during quarter *q*. Conventionally, negative value of NCSKEW represents left-skewed stock return distribution.

The second parameter for stock-specific crash-risk is down-to-up volatility (*DUVOL*). For each quarter, we compute average quarterly returns using firm-specific daily returns for i^{th} firm. Next we identify a pool of daily returns in a specific quarter above the quarterly average as the up-day returns and below the quarterly-average as the down-day returns. Thereafter, *DUVOL* is estimated as the log of the standard deviation of the down-day returns to standard deviation of the up-day returns. By formation, the higher value of *DUVOL* indicates higher crash-risk.

2.3 Measuring block-ownership

The effect of the block-ownership ($BLOCK^{Own}$) of a firm on the future firm-specific crash-risk is calculated by summing-up the total percentage shareholding of all the investors in a firm, with equity-holding more than one percent off all the outstanding shares. We only account for more than one percent outstanding shareholding since fundamentally we are interested in analyzing the impact of the block-owners with sufficient access to management or have financial incentives to pursue their investment in the firm. Although, insiders' *viz.* managers and promoters may satisfy our criterion of being block-owners, however their motivation of being block-owners and influencing the future stock price can be markedly different from *outside* block-owners. In order to avoid any form of internal biasedness, we purposely exclude managers and promoters from our block-ownership sample. We further

split the block-ownership ($BLOCK^{Own}$) variable into major ($BLOCK^{Major}$) and minor block-owners ($BLOCK^{Minor}$). Major block-owners are characterized as those with substantially high shareholding in the firm.

2.4 Measuring short-term and long-term block-ownership

To identify dedicated (long-term) block-owners from transient (short-term) block-owners, we follow Bushee (1998) methodology. In particular, we classify block-ownership into short-term and long-term ownership on the basis of portfolio turnover over the past four quarters. We start by estimating aggregate purchase and sale *i.e.* churning rate (*CR*) for each block-owner on a quarterly basis using the following relation;

$If\ S_{k,i,q} > S_{k,i,q-1}\ then$

$$CR\ (Buy)_{q,k} = \sum_{i=1}^{Nk} |S_{k,i,q} *\ P_{i,q} - S_{k,i,q-1} *\ P_{i,q-1} - [S_{k,i,q-1} * (P_{i,q} -\ P_{i,q-1})]| \quad (3)$$

$If\ S_{k,i,q} =< S_{k,i,q-1}\ then$

$$CR\ (Sell)_{q,k} = \sum_{i=1}^{Nk} |S_{k,i,q} *\ P_{i,q} - S_{k,i,q-1} *\ P_{i,q-1} - [S_{k,i,q-1} * (P_{i,q} -\ P_{i,q-1})]| \quad (4)$$

where $P_{i,q}$ and $P_{i,q-1}$ are the stock's adjusted closing prices after taking into account the corporate actions at the end of two successive quarters q and *q-1*. $S_{k,i,q}$ and $S_{k,i,q-1}$ are number of stocks for the i^{th} firm held by the k^{th} block-owner at the end of two successive quarters q and *q-1* respectively. Here, $CR\ (Buy)_{q,k}$ indicates the scenario when a specific block-owner increases his aggregate shareholding in a particular quarter from the previous quarter and vice-versa for $CR\ (Sell)_{q,k}$. *CR* of each block-owner for quarter q is given as:

$$CR_{k,q} = Min\ \{CR\ (buy)_{k,q}, CR\ (Sell)_{k,q}\} / \sum_{i=1}^{Nk} \{(S_{k,i,q} * P_{i,q}) + (S_{k,i,q-1} *\ P_{i,q-1})\}/2 \quad (5)$$

Next, we estimate the rolling average of the $CR_{k,q}$ over four quarters for the sample period. Finally, for each quarter we sort block-owners based on average churn rate ($CR_{k,q}$). Top 33% block-owners are representative of investors with quick turnaround time, called short-term block-owners with a relatively shorter (transient) investment horizon in the firm (*hereafter*

BLOCK^{Short}) while bottom 33% block-owners characterizes long-term block-owners with a relatively dedicated interest in the firm (*hereafter BLOCK*^{Long}). To isolate the effect of block shareholding on firm-level crash-risk, we include several control variables that have been used as the related information proxies in the crash-risk literature and the description of these variables is given in table 1.

[Table 1]

3. Empirical Analysis

3.1 Descriptive statistics

Table 2 shows the descriptive statistics of all the variables used in the regressions based on firm-quarter observations between 2001 and 2012. The mean (median) value of one quarter ahead crash-risk measures – $NCSKEW_{q+1}$ and $DUVOL_{q+1}$ is -0.48 (-0.42) and -0.25 (-0.26) respectively. Average shareholding of the block-owners (*BLOCK*^{Own}) in our twelve year sample period is 14.31%. We also find that on average short-term block-owners (*BLOCK*^{Short}) hold 5.46% of total outstanding stocks, while long-term block-owners (*BLOCK*^{Long}) own 10.66% of total outstanding stocks.

[Table 2]

3.2 Block-ownership and crash-risk

In line with prior studies that examine the relation between block-ownership on future stock price crash-risk, we run the following regression:

$$Crash\ Risk_{q+1,i} = \alpha + \beta_1 BLOCK^{Own}{}_{q,i} + \sum_n \beta_n\ Control^n_{q,i} + Ind. + Time + \varepsilon_{q,i} \quad (6)$$

The dependent variable in above equation is measured for quarter $q+1$, while independent variables are measured for quarter q. Table 3 presents pooled regression results for popular firm-level crash-risk measures $NCSKEW_{q+1}$and $DUVOL_{q+1}$. We find a strong positive relation between block-ownership concentration of a firm and its future crash-risk for both negative skewness (0.30; t-stat=5.96) and down-to-up volatility movement (0.14; t-stat=5.92). When

we break down the block-ownership concentration among major and minor block-owners, we witness a significantly higher instance of crash-risk due to the presence of major block-owners for next quarter *NCSKEW* (0.11; t-stat=2.14) and *DUVOL* (0.06; t-stat=2.58). Expectedly, we are unable to document any significant effect of minor shareholders in negatively influencing its stock price. These empirical findings nicely align with our key hypothesis *i.e.* a highly concentrated block-ownership in a firm will lead to a higher future firm-level crash-risk clearly indicating that block-ownership increases crash-risk. We interpret it as a strong evidence of expropriation of firm-assets by the block-owners.

The estimated coefficient for $BLOCK^{Long}$ for negative skewness (down-to-up volatility) is -0.02 (-0.01) and is significant at one percent level. Contrarily, $BLOCK^{Short}$ only marginally influences the firm's future chances of unexpected negative price movement. Here, we find a higher influence of dedicated investors on the future firm performance where they are likely to act as a watchdog in order to align the interest of the management in firm-value maximization.

[Table 3]

In our empirical examinations, we did not consider issues relating to any potential self-selection bias or endogeneity that might arise from the fact that either major block-owners choose to invest in crash-risk prone firms or dedicated block-owners knowingly handpick firms with lower susceptibility to crash-risk for long-term investment. Another potential concern is reverse causality *i.e.* instead of level and investment duration of the block-ownership in the firm affecting the future firm-level chances of surprise negative stock movement; it is possible that the firm-specific sensitivity towards stock price crash causes the observed patterns in block-ownership. Although it is a widely anticipated generic problem in corporate finance literature, we assume that reverse causality is highly unlikely to drive our results since it is not at all obvious why major block-owners prefer to invest in firms prone to

crash-risk. Nevertheless, we conduct an additional test to address these concerns by regressing the change in firm-specific crash-risk measures on changes in the ownership variables. The first difference approach explicitly considers how change in specific type of ownership structure in the firm over two successive quarters influences the firm-level responsiveness towards crash-risk. Additionally, this model also mitigates the concerns related to the omitted variable and endogeneity from our model specification (Wooldridge, 2006). In table 4, we present our results of change in dependent and explanatory variable regression. We find a positive coefficient of 0.35 (0.40) with significant t-statistics of 3.21 (1.74) for change in ownership concentration – D_BLOCK^{Own}. However the effect dissipates when we split the ownership concentration into major and minor block-owners.

[Table 4]

3.3 Bank nominee board director and crash-risk

Lastly, we examine the moderating role of a bank appointed nominee as a board director with respect to firm-level block-ownership and future crash-risk. Based on the presence of a bank appointed nominee(s) on the firm's board, we categorize our sample into either Bank-Nominee group or No-Bank Nominee group. Bank Nominee group consists of those firms where at least one director has been nominated by the lending financial institute while the No-Bank Nominee group does not have any such board member. Table 5 shows the sub-sample regression results, and consistent with our prediction, we find the coefficient of $BLOCK^{Own}$ is significantly positive only for firms that do not have a single bank designated nominee as a board member. It is evident in model 1 of Panel A-I and B-I that both future *NCSKEW* (0.25; t-stat=3.79) and *DUVOL* (0.11; t-stat=3.72) markedly increases in absence of bank nominee, wherein the firm's odds of experiencing a stock price crash stems from its major block-owners. Expectedly, in the absence of a bank nominee, long-term external block shareholders continue with their role of monitoring the management. Next, as envisaged; in

the presence of a bank nominated board of director, we fail to find any evidence of block-owners inflating the prospects of stock price crash. These statistical results also support *monitoring hypothesis* of agency theory. It suggests that in emerging markets, bank nominees can be an effective corporate governance mechanism to reduce firm-level agency issues.

[Table 5]

4. Conclusion

In this study, we test three hypotheses. First, we examine if a highly concentrated *outside* block-ownership will increase the firm's chances of crash-risk. After controlling for an array of firm-level factors which are highly sensitive to crash-risk, we find that crash-risk does increase with an increased ownership clustering and more in case of major block-owners. Next, we find that dedicated long-term block-owners taking a superior *monitoring* role in alleviating the firm's instances of witnessing a surprised decline in stock prices. Our final finding suggests bank nominees taking a disciplinarian role in firms with them as a board member since these firms do not witness or show any sign of crash-risk. Our findings are robust to a battery of sensitivity analysis, number of alternative model specifications, clustering and sample decompositions.

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Table 1: Variable description.

Variables	Definitions
Negative skewness – NCSKEW	Proxy for firm-specific crash-risk. It is the negative of the third moment divided by the standard deviation of quarterly firm-specific daily returns.
Down-to-up volatility – DUVOL	Proxy for firm-specific crash-risk. It is the ratio of the natural logarithm of the standard deviation of firm-level quarterly down-day up-day returns.
Block-ownership – $BLOCK^{Own}$	Total Percentage of quarterly shareholding for all the outside block-owners with 1% or higher equity-holding in the firm. We discount the shareholding of the inside block-owners *i.e.* managers and promoters.
$BLOCK^{Major}$ & $BLOCK^{Minor}$	$BLOCK^{Major}$ ($BLOCK^{Minor}$) is the sum of quarterly firm-level block-ownership of all the outside shareholders with more (less) than median quarterly equity–holding.
$BLOCK^{Long}$ & $BLOCK^{Short}$	$BLOCK^{Long}$ ($BLOCK^{Short}$) is the sum of firm-specific long-term (short-term) quarterly firm-level outside block-ownership.
Turnover change – DTURNOVER	Relative change in stock–level turnover over two successive quarters where turnover is ratio of quarterly trading volume by total outstanding shares.
Amihud illiquidity – Amihud	Amihud (2002) illiquidity factor.
Skewness – SKEW	Quarterly firm–level skewness using daily returns.
Volatility – SIGMA	Quarterly firm–level standard deviation using daily returns.
Stock return – RET	Cumulative quarterly firm–level stock returns using daily returns.
Kurtosis – KURTO	Quarterly firm–level kurtosis using daily returns.
Price to book – PB	End of quarter market to book value of equity.
Firm size – SIZE	Natural logarithm of the end of quarter market value of equity, in Million Indian Rupees (INR).

Table 2: Descriptive statistics for the quarterly firm-level variables. N is the number of firm-quarters.

Variables	N	Mean	5%	Q1	Median	Q3	95%	Std. dev.
Crash-risk Variables								
$NCSKEW_{q+1}$	45,878	-0.48	-2.11	-0.96	-0.42	0.00	0.64	0.96
$DUVOL_{q+1}$	45,878	-0.25	-0.94	-0.53	-0.26	-0.01	0.32	0.45
Block-ownership Concentration								
$BLOCK^{Own}$(%)	45,878	14.31	2.10	3.03	10.92	22.42	41.05	13.35
$BLOCK^{Major}$(%)	45,878	14.60	2.10	5.99	11.73	19.72	36.53	12.05
$BLOCK^{Minor}$(%)	45,878	6.13	1.26	3.37	5.43	8.06	13.14	4.08
$BLOCK^{Long}$(%)	18,616	10.66	1.09	3.41	7.40	14.64	16.52	10.60
$BLOCK^{Short}$(%)	18,616	5.46	1.19	2.09	4.09	7.16	20.95	4.96
Control Variables								
DTURNOVER	45,878	-0.03	-0.47	-0.059	0.00	0.05	0.40	0.78
Amihud (x 10^{-6})	45,878	1.91	0.00	0.00	0.01	0.08	8.60	10.46
SKEW	45,878	0.48	-0.77	0.00	0.42	0.96	2.02	0.98
SIGMA	45,878	0.04	0.01	0.02	0.03	0.04	0.06	0.04
RET(%)	45,878	0.24	-0.42	-15.07	-1.60	12.01	0.39	56.02
KURTO	45,878	2.33	-0.77	0.15	1.14	2.96	9.14	4.48
PB	45,878	2.47	0.28	0.68	1.31	2.60	6.86	13.78
SIZE	45,878	8.17	5.22	6.72	7.99	9.51	11.81	2.03

Table 3: Regression results of one-quarter ahead crash-risk parameters on quarterly outside block-ownership. Robust t-statistics are calculated by dual clustering of the standard errors across firm and time. We control for year and industry fixed effects.

	Panel A: $NCSKEW_{q+1}$			**Panel B: $DUVOL_{q+1}$**		
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**
$BLOCK^{Own}$	0.30***			0.14***		
$BLOCK^{Major}$		0.11**			0.06***	
$BLOCK^{Minor}$		-0.03			-0.04	
$BLOCK^{Long}$			-0.02***			-0.01***
$BLOCK^{Short}$			0.03*			0.01*
DTURNOVER	0.03***	0.017**	0.03***	0.01***	0.01***	0.01***
Amihud	0.001	0.002	0.002*	0.001***	0.004	0.005***
SKEW	-0.06***	-0.068***	-0.05***	-0.03***	-0.03***	-0.02***
SIGMA	0.70***	1.81***	-0.17	0.41***	0.74***	-0.03
RET	0.06***	-0.03	0.10***	0.02**	-0.01	0.03***
KURTO	-0.01***	-0.013***	-0.001**	-0.003***	-0.01***	-0.023***
PB	0.001	0.003	0.005	0.003	0.003	0.001
SIZE	0.04***	0.05***	0.06***	0.02***	0.02***	0.03***
Intercept	-0.83***	-1.076***	-0.97***	-0.43***	-0.51***	-0.50***
Adj. R^2	0.08	0.11	0.07	0.10	0.11	0.08
Observations	45,878	45,878	18,616	45,878	45,878	18,616

Table 4: Regression results of one-quarter ahead change in crash-risk parameters on successive change in quarterly outside block-ownership. D_NCSKEW (D_DUVOL) is the firm-specific successive change in negative skewness (down-to-up volatility) of the firm's equity from quarter *q-1* to quarter *q*. D_BLOCK^{Own} refers to the firm-specific difference in outside block shareholding in the firm. Refer notes in table 3 for the regression model details.

	Panel A: D_NCSKEW_{q+1}			**Panel B: D_DUVOL_{q+1}**		
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**
D_BLOCK^{Own}	0.40*			0.35***		
D_BLOCK^{Major}		0.02			0.01	
D_BLOCK^{Minor}		0.32			0.02*	
D_BLOCK^{Long}			-0.15***			-0.47***
D_BLOCK^{Short}			0.06			0.10
DTURNOVER	0.04***	0.02***	0.04**	0.02***	0.01***	0.02***
Amihud	0.002**	0.001	0.002***	0.003*	0.001	0.000***
SKEW	0.88***	0.65***	0.90***	0.38***	0.26***	0.38***
SIGMA	-0.43	-1.82***	-0.87	-1.01***	-0.86***	-1.63***
RET	0.07***	0.12***	0.10***	0.10***	0.05***	0.08***
KURTO	-0.01***	-0.03***	-0.001	-0.01***	-0.01***	-0.01
PB	0.001	0.002	0.001	0.004	-0.001***	0.006
SIZE	0.06***	0.05***	0.07***	0.03***	0.02***	0.03***
Intercept	-0.89***	-0.97***	-0.94***	-0.36***	-0.44***	-0.37***
Adj. R^2	0.06	0.28	0.06	0.07	0.28	0.07
Observations	43,878	33,012	17,616	43,878	33,012	17,616

Table 5: Regression results of sub-sample analysis of one-quarter ahead crash-risk on quarterly outside block-ownership for firms segregated based on the presence of Bank appointed nominee on the Board of the firm. Refer notes in table 3 for the regression model details.

	Panel A: $NCSKEW_{q+1}$						**Panel B: $DUVOL_{q+1}$**					
	Panel A-I: No-Bank Nominee			**Panel A-II: Bank Nominee**			**Panel B-I: No-Bank Nominee**			**Panel B-II: Bank Nominee**		
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**
$BLOCK^{Own}$	0.25***			0.12			0.11***			0.06		
$BLOCK^{Major}$		0.14**			-0.02			0.08***			-0.01	
$BLOCK^{Minor}$		(0.14)			0.61*			-0.001			0.29*	
$BLOCK^{Long}$			-0.16**			-0.34**			-0.10**			-0.15**
$BLOCK^{Short}$			0.24			0.29			0.12			0.15
DTURNOVER	0.02***	0.02*	0.031***	0.06***	0.03*	0.02	0.01***	0.100**	0.011***	0.02**	0.01*	0.01
Amihud	0.002**	0.001	0.001	0.001*	0.005	0.004**	0.004	0.003	0.001***	0.006	0.003	0.004***
SKEW	-0.05***	-0.06	-0.05***	-0.03*	-0.06***	-0.04**	-0.02***	-0.03	-0.02***	-0.02**	-0.03***	-0.02**
SIGMA	0.42**	1.88***	-0.26	0.30	1.47*	-0.03	0.20**	0.71***	-0.03	0.18	0.74	-0.05
RET	0.06***	-0.04	0.10***	0.08**	0.03	0.09*	0.02***	-0.02	0.04***	0.03	0.001	0.03
KURTO	-0.01***	-0.01	-0.001*	-0.01*	-0.01	0.01	-0.003***	-0.01***	-0.001***	0.001*	-0.01***	0.02
PB	0.001	0.001	0.002	0.001*	0.003	0.003*	0.002	0.005	-0.006	0.002*	0.001	0.004
SIZE	0.05***	0.05***	0.06***	0.07***	0.06***	0.08***	0.02***	0.02***	0.03***	0.03***	0.03***	0.04***
Intercept	-0.87***	-1.04***	-0.92***	-1.10***	-1.24***	-1.13***	-0.44***	-0.49***	-0.49***	-0.54***	-0.57***	-0.53***
Adj. R^2	0.07	0.13	0.07	0.12	0.18	0.06	0.07	0.13	0.07	0.01	0.18	0.06
Observations	35,350	26,668	15,053	5,828	5,828	3,460	35,350	26,668	15,053	5,828	5,828	3,460