Price Limit

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Do Stocks in the Tehran market that hit upper price limits typically exhibit high returns and volumes ?

1 Return

1.1 Depended Variables

Close to Open return is calculated using the closing price at the event day and the open price on the next day.

Open to Close return is calculated using the open price and closing price on the next day.

Forward return is day 1,2, 3, 4, 5 and so on returns from the event day.

1.2 Control Variables

Upper hit and **Lower hit** are dummy variables that indicates upper and lower limit touched at time t.

Upper and **Lower** are dummy variables that indicates maximum or minimum trading price is above and lower than half of daily limit.

Middle is dummy variable that indicates maximum and minimum trading price is lower than half of daily limit.

Limit Change is dummy variable that indicated changing in price limit at time t.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	closetoopen	opentoclose	ret_f1	ret_f2	ret_f3	ret_f4	ret_f5
upperhit	2.193***	-1.349***	1.341***	3.101***	3.169***	4.586***	4.303***
	(8.93)	(-20.92)	(15.60)	(24.70)	(18.28)	(21.39)	(16.29)
upper	-0.669**	-0.908***	-0.944***	0.438***	-0.238	1.156***	0.233
	(-3.13)	(-17.62)	(-11.79)	(4.33)	(-1.74)	(7.32)	(1.21)
middle	-7.938***	-0.458***	-0.422***	0.847***	0.524***	1.533***	0.840***
	(-13.64)	(-8.11)	(-5.39)	(7.99)	(3.64)	(8.95)	(4.12)
lower	-2.092***	-0.143***	-0.485***	0.894***	0.501***	1.646***	1.135***
	(-12.75)	(-3.77)	(-7.98)	(11.35)	(4.70)	(13.45)	(7.62)
lowerhit	-3.868***	0.720***	-1.743***	-0.751***	-1.703***	-0.656*	-1.572***
	(-13.23)	(8.47)	(-14.48)	(-4.15)	(-7.17)	(-2.33)	(-4.78)
limitchange	-0.652	-0.0403	-0.0513	-0.135	0.336	0.253	0.605
	(-1.65)	(-0.76)	(-0.50)	(-0.76)	(1.29)	(0.82)	(1.77)
marketratio	205.1***	6.408***	1.282	0.374	-8.702	-11.22	-21.87*
	(13.35)	(3.33)	(0.47)	(0.08)	(-1.41)	(-1.48)	(-2.41)
_cons	-1.747***	0.478***	0.684***	-0.351**	0.499**	-0.331	0.780**
	(-6.47)	(7.32)	(7.33)	(-2.61)	(2.79)	(-1.51)	(3.00)
N	148060	141284	148060	147757	147471	147181	146904

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 1: OLS regression, Clustered by calendar date

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ret_f10	ret_f20	ret_f30	ret_f50	ret_f100	ret_f200	ret_f300
upperhit	7.073***	11.00***	14.84***	23.32***	32.17***	102.5***	153.4***
	(15.00)	(14.21)	(13.53)	(13.03)	(9.76)	(16.51)	(9.05)
upper	2.217***	4.164***	5.886***	9.563***	14.96***	51.43***	68.18***
	(7.82)	(9.05)	(9.03)	(9.33)	(6.84)	(10.40)	(5.29)
middle	1.741***	1.979***	1.930**	1.361	-4.418	12.89*	8.027
	(5.68)	(3.79)	(2.67)	(1.19)	(-1.64)	(2.54)	(0.69)
lower	2.718***	3.933***	5.660***	8.120***	7.232***	24.15***	18.11
	(12.08)	(11.57)	(11.39)	(9.18)	(3.78)	(6.47)	(1.62)
lowerhit	-0.299	1.552	4.523***	8.614***	17.55***	82.37***	41.42
	(-0.59)	(1.75)	(3.50)	(4.58)	(4.08)	(8.58)	(1.64)
limitchange	0.826	1.034	1.600	3.641*	6.650	6.907	-71.91*
	(1.50)	(1.25)	(1.42)	(2.09)	(1.22)	(0.55)	(-2.57)
marketratio	-62.93***	-142.2***	-214.5***	-229.1***	-759.6***	-3307.3***	-7867.9***
	(-4.05)	(-5.21)	(-5.44)	(-3.44)	(-6.74)	(-14.16)	(-18.32)
_cons	1.354***	4.576***	8.032***	15.24***	50.93***	107.9***	272.0***
	(3.39)	(6.98)	(8.11)	(9.18)	(14.10)	(13.18)	(13.39)
N	145814	144028	143286	142837	137093	107424	85975

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: OLS regression, Clustered by calendar date

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	closetoopen	opentoclose	ret_f1	ret_f2	ret_f3	ret_f4	ret_f5
upperhit	5.206***	-1.323***	1.669***	3.116***	3.411***	4.515***	4.443***
	(16.72)	(-31.40)	(5.92)	(58.72)	(11.81)	(47.26)	(14.64)
upper	2.171***	-0.876***	-0.126	0.505***	0.517*	1.220***	0.958***
	(9.78)	(-24.82)	(-0.49)	(10.31)	(2.00)	(16.31)	(3.58)
middle	-3.397***	-0.411***	0.195	0.945***	1.163***	1.680***	1.499***
	(-5.78)	(-10.48)	(0.90)	(17.24)	(5.21)	(18.60)	(6.26)
lower	0.838***	-0.125***	0.120	0.972***	1.096***	1.735***	1.720***
	(4.35)	(-4.72)	(0.77)	(21.44)	(6.68)	(23.74)	(9.64)
lowerhit	0.0743	0.725***	-1.251***	-0.694***	-1.250***	-0.631***	-1.162***
	(0.24)	(22.84)	(-4.03)	(-12.58)	(-4.07)	(-6.59)	(-3.61)
limitchange	1.585***	-0.0147	0.187	-0.101	0.517*	0.253	0.736**
	(5.68)	(-0.48)	(0.85)	(-0.99)	(2.19)	(1.59)	(2.78)
marketratio	68.36	-2.600	-53.98	-91.02***	-169.7***	-228.4***	-314.6***
	(1.48)	(-0.30)	(-1.46)	(-4.77)	(-3.57)	(-5.49)	(-4.79)
_cons	-5.885***	0.463***	0.0606	-0.261***	0.123	0.0153	0.697*
	(-23.72)	(12.22)	(0.20)	(-4.04)	(0.39)	(0.13)	(2.08)
N	148060	141284	148060	147757	147471	147181	146904

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3: Fixed effect regression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ret_f10	ret_f20	ret_f30	ret_f50	ret_f100	ret_f200	ret_f300
upperhit	6.622***	9.860***	13.13***	20.31***	25.66***	84.44***	127.0***
	(30.36)	(23.56)	(20.75)	(18.15)	(9.99)	(9.53)	(7.53)
upper	2.181***	3.936***	5.540***	8.892***	13.44***	46.39***	67.55***
	(15.32)	(16.13)	(15.49)	(14.77)	(9.73)	(10.52)	(6.96)
middle	1.863***	2.053***	2.034***	1.312	-3.998*	6.728	4.413
	(9.08)	(5.49)	(3.70)	(1.48)	(-2.25)	(1.38)	(0.33)
lower	2.727***	3.780***	5.451***	7.877***	7.446***	24.25***	17.95
	(16.59)	(12.62)	(12.20)	(10.83)	(5.11)	(5.83)	(1.77)
lowerhit	-0.454*	1.040*	3.732***	7.265***	14.80***	73.09***	33.42**
	(-2.07)	(2.51)	(5.95)	(6.42)	(5.33)	(7.88)	(2.64)
limitchange	0.653**	0.560	0.721	1.681	2.757	0.969	-69.88***
	(2.64)	(1.37)	(1.21)	(1.55)	(1.23)	(0.13)	(-7.36)
marketratio	-671.5***	-1503.2***	-2379.9***	-4563.2***	-10264.3***	-21348.2***	-44078.3***
	(-5.62)	(-5.51)	(-5.59)	(-5.23)	(-5.96)	(-5.79)	(-3.94)
_cons	2.645***	7.671***	12.92***	24.85***	71.63***	151.2***	352.1***
	(8.71)	(12.04)	(13.21)	(13.05)	(18.12)	(15.70)	(13.86)
N	145814	144028	143286	142837	137093	107424	85975

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: Fixed effect regression

2 Volume

2.1 Depended Variables

Turn$_{k,t}$ Stock k's turnover on date t is defined as the amount traded in Rial divided by the market capitalization of the free float.

$$\text{Turn}_{k,t} = \frac{\text{Volume(Rial)}_{k,t}}{\text{MarketCap(FreeFloat)}_{k,t}} \tag{1}$$

Relative turnover is defined as the ratio of the turnover of stock k on date t to the average turnover of stock k during our sample period.

$$\text{RelTurn}_{k,t} = \frac{\text{Turn}_{k,t}}{AVG(\text{Turn}_{k,t})} \tag{2}$$

	(1)	(2)	(3)
	lnvolume	turnk	relturnk
upperhit	1.228***	0.0209***	1.024***
	(18.88)	(3.42)	(29.26)
upper	0.547***	0.00707**	0.357***
	(10.65)	(2.90)	(14.48)
middle	-0.832***	-0.000354	-0.209***
	(-13.63)	(-0.07)	(-6.98)
lower	-0.565***	0.00190	-0.197***
	(-14.53)	(0.29)	(-8.63)
lowerhit	0.0944	0.00632**	0.407***
	(1.31)	(3.09)	(9.68)
limitchange	-0.0481	0.0326	0.0964*
	(-0.54)	(1.06)	(2.21)
marketratio	96.71***	-0.569***	9.106***
	(55.55)	(-10.71)	(3.77)
_cons	13.33***	0.00723	0.611***
	(170.42)	(1.24)	(17.85)
N	148354	148355	148355

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: OLS regression, Clustered by calendar date

	(1)	(2)	(3)
	lnvolume	turnk	relturnk
upperhit	1.499***	0.0162***	1.095***
	(34.00)	(14.51)	(37.76)
upper	0.730***	0.00588***	0.385***
	(24.37)	(6.61)	(19.86)
middle	-0.493***	-0.000592	-0.210***
	(-15.53)	(-0.23)	(-7.51)
lower	-0.147***	-0.000821	-0.163***
	(-6.90)	(-0.34)	(-7.50)
lowerhit	0.606***	0.00196	0.485***
	(15.50)	(0.59)	(14.05)
limitchange	-0.137***	0.0361	0.115**
	(-4.50)	(1.05)	(3.20)
marketratio	-68.97***	-0.00956	-46.96*
	(-3.74)	(-0.04)	(-2.03)
_cons	13.20***	0.00955***	0.658***
	(281.68)	(3.34)	(14.79)
N	148354	148355	148355

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Fixed effect regression