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Impacts of Corporate Governance on Stock Liquidity: A Panel Quintile Regression

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Motivation

Importance of Liquidity

Stock liquidity affects the value of firm (Amihud & Mendelson, 2008)

Prior literature

In asset pricing, there are many liquidity and stock return relationship studies.

- Prior studies use specific characteristics of corporate governance, not a general corporate governance index, which represent all perspective of corporate governance
- Most studies focus on developed markets.

Objective

- It investigates corporate governance and liquidity relationship.

Hypothesis

- High corporate governance firm has more stock liquidity than low corporate governance firm.

Literature Review

Adverse selection problem of investor behavior (Glosten & Milgrom, 1985; Easley, Kiefer, O'Hara, & Paperman, 1996)

Low CG, high information asymmetry

The gap between trader increases adverse selection

Bid-ask spreads will be wider, which implies illiquidity

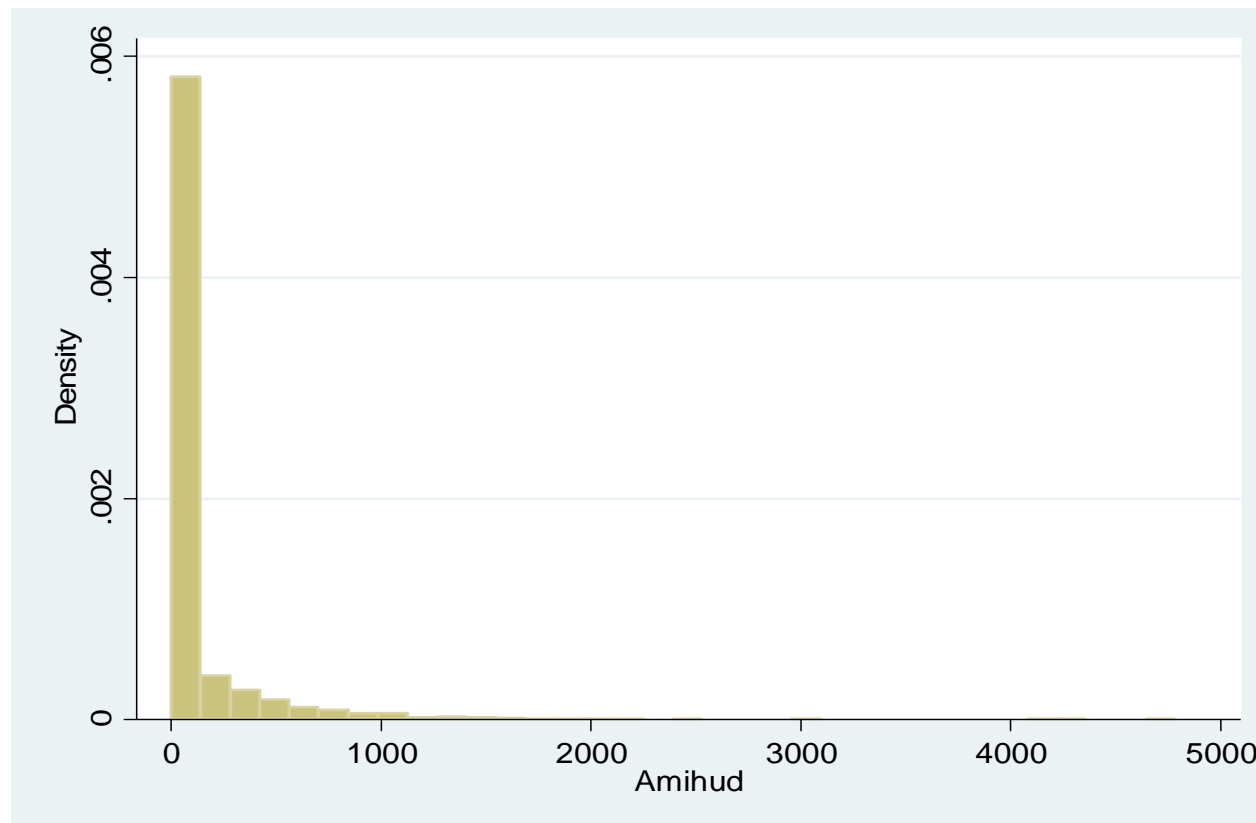
Data & Methodology

- Thomson Reuters Eikon from 2000 and 2016.
- Panel-data regression (Roberts & Whited, 2011) and Random-effects Tobit Model.
- Following Chung et al., (2010); Lei et al., (2013), the panel-data regression equations as follows.

$$\begin{aligned} Liquidity_{i,t} = & \beta_0 + \beta_1 GovIndex_{i,t} + \beta_2 \frac{1}{price_{i,t}} + \beta_3 Return_{i,t} \\ & + \beta_4 Volatility_{i,t} + \beta_5 FirmSize_{i,t} + \beta_6 Age_{i,t} + \beta_7 TradingVolume_{i,t} \\ & + \beta_8 Industry_{i,t} + \beta_9 Year_{i,t} + \varepsilon_{i,t} \end{aligned}$$

Empirical Results

- Figure1 Histogram of Amihud's Illiquidity (ILLIQit)



Empirical Results

- Table 1. Descriptive statistics of stock return and liquidity measures.

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
Illiq	2,977	112.7085	3.5022	302.1050	0.0000	4783.2490
CG No-star	811	116.8941	4.1077	280.1586	0.0000	2396.8790
CG 3-star	902	155.8630	6.1194	333.8065	0.0000	4359.7980
CG 4-star	901	92.2577	3.0384	319.4313	0.0002	4783.2490
CG 5-star	363	46.8856	0.2432	183.3089	0.0001	2084.5550
1/Price	2,977	0.4894	0.1980	1.2567	0.0013	33.3333
Return Volatility	2,977	0.0553	0.0287	0.3947	0.0013	12.4128
Firm age	2,977	23.4068	23.8028	8.2900	10.8389	42.9972
Ln(Firm Size)	2,977	15.6822	15.3448	1.6965	11.2037	21.8458
Ln(Turnover by Volume)	2,977	10.8437	10.8766	4.4799	0.5596	23.5943 ⁶

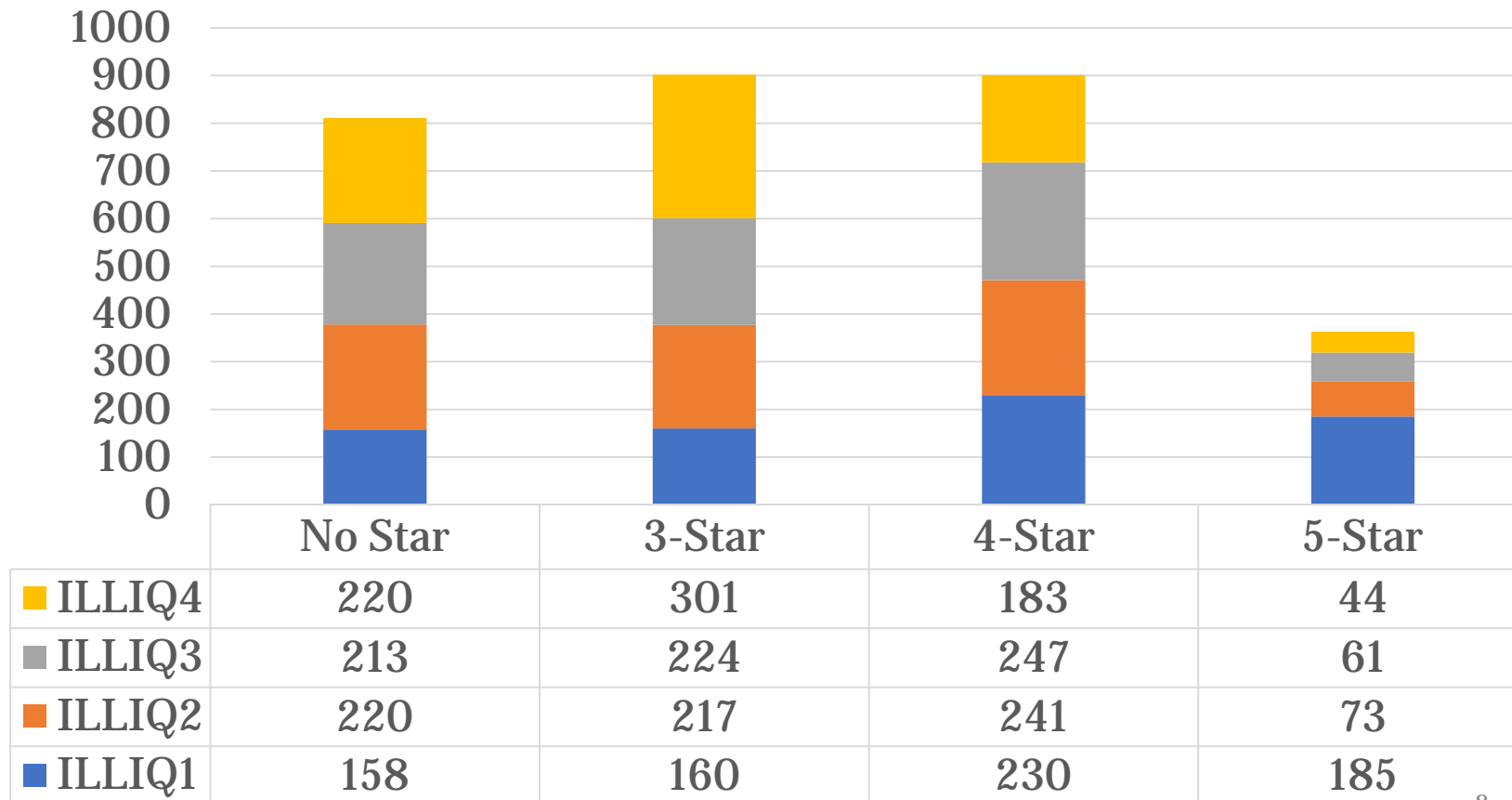
Empirical Results

- Table 2. Estimated Results of Random-effects Linear Model, Random-effects Tobit Model, and Fixed-effects Quantile Regression Model using Annual Data.

	RE-Linear	RE-Tobit	FE-QReg
cg3	24.8099*	0.2229	-1.0934
cg4	-7.0201	-0.4572**	-14.0985***
cg5	-0.3996	-1.3231***	-4.9257***
priceinverse	17.5850***	0.4501***	20.9306***
volatility	49.9615***	0.9726***	29.7871***
age	-0.7653	-0.0728***	-0.4736***
lnta	2.1368	0.0753*	1.4423***
lntv	-30.4129***	-1.1105***	-11.5906***
Constant	410.1833***	18.1968***	
sigma_u		1.7872***	
sigma_e		3.3717***	
N	2977	2977	2977
No Group	364	364	364
Chi-square	777.19***	2733.61***	
Overall R2	0.2075		

Empirical Results

Figure 2. Frequency of Firm-year Categorized by IOD's Corporate Governance Index and Level of Illiquidity



ILLIQ_Level	Annual Data	Monthly Data
cg3	0.1079	-0.0499 ***
cg4	-0.0423 **	-0.0533 **
cg5	-0.4179 ***	-0.1383 ***
priceinverse	0.1218 ***	0.0521 ***
volatility	0.4347 ***	0.5012 **
age	-0.0263 ***	-0.0394 ***
Inta	-0.1300 ***	-0.0405 ***
Intv	-0.3884 ***	-0.6028 ***
t ₁	-8.1586 ***	-7.7730 ***
t ₂	-6.6801 ***	-5.9117 ***
t ₃	-5.1983 ***	-3.9149 ***
sigma_u	0.5391 ***	0.8298 ***
N	2977	53479
No Group	364	364
Log-likelihood	-2584.96	-34739.76
Overall Chi-square Test	1587.47 ***	19072.99 ***
Chi-square-Bar	237.34 ***	8295.53 ***

Estimated Results of Random-effects Ordered Probit Model using Annually Data and Monthly Data.

Empirical Results

Table. Descriptive Statistical Indices of Change of Amihud's Illiquidity After Change in IOD's Corporate Governance Index during 2007-2011 and 2012-2017.

Period	2007-2011			2012-2017		
	0 → 3	3 → 4	4 → 5	0 → 3	3 → 4	4 → 5
CG-Change						
Firm-year (# obs.)	74	70	32	96	119	71
Mean	102.663	3.180	0.930	-20.514	-35.417	-4.455
Median	67.553	-1.981	-1.563	-0.008	-0.001	-0.001
Std. Dev.	446.413	459.553	373.120	75.107	131.842	22.906
Minimum	-972.357	-1723.934	-569.291	-508.400	-702.241	-146.127
Maximum	1187.658	1390.975	1833.472	12.596	13.193	5.623

CONCLUSION

- This study takes into account of the positively skew distribution of stock market liquidity measured by Amihud's illiquidity by employing Random-effects Tobit Model, and Fixed-effects Quantile Regression Model.
- The significant impacts of the IOD corporate governance index on the Amihud stock illiquidity measure is documented.
- Better corporate governance score helps reduce the information asymmetry, subsequently increase the stock liquidity.

CONCLUSION

- Support previous studies (Chung, et al., 2010; Prommin et al., 2014; and Prommin, et al., 2016).
- Robust to alternative statistical tests and different scale of measurement of liquidity.