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The Effect of Gender Diversity on the Board of Commissioner to Stock Liquidity of Non-Financial Firms Listed in LQ45 During 2013-2017

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ABSTRACT
The purpose of this study is to investigate the effect of board composition (mainly gender diversity of the boards) on the liquidity of the non-financial firms' stock listed on the LQ45 in 2013-2017. This study used the Ordinary Least Square Regression method to examine the effect of gender diversity (as the main variable of board composition besides Independent Director and Board Size) on stock liquidity in which is divided into three proxies: Amihud Illiquidity Index, Stock Turnover, and Liquidity Ratio. The study shows that gender diversity poses a non-significant effect on a firm's stock liquidity. Whereas, Independent Director affects stock liquidity positively and significantly.
Keywords: gender diversity, stock liquidity, board composition.

1 INTRODUCTION

Studies regarding gender diversity on the boards of commissar have gathered serious attention in recent years due to its potential to give signals to investors and guidance to firms regarding corporate governance. There are some recent studies on gender diversity on the boards of commissary like the ones that are written by Ahmed *et al.* (2017) and Loukil *et al.* (2019). Both studies imply that gender diversity on the boards of commissary has some impact on a firm's stock liquidity. The existence of females in the boards of commissary imply a better monitoring function and more effective information management (Adams and Fereira 2009) due to the nature of females' leadership style that puts trust and teamwork as their priorities, while male leaders mainly concern the end-results, sometimes without even bothering if the process was done correctly or not (Cohen et al., 1998). This leadership style requires an adequate flow of information between the board member and investors. Females on the boards of commissary also offer some new perspectives, thus resolving homogenous way of thinking in decision-making (Davies 2011). Good decision-making affects stock liquidity in a way that it leads to the increase of a firm's performance, thus making it more

reliable to the investors/potential investors. The increase in the firm's credibility might decrease the hesitation of investors/potential investors to make a transaction on the firm's stock, thus leading to an increase of stock's liquidity (Ahmed et al. 2017). Ahmed et al. (2017) studies the effect of a board's gender diversity on a firm's stock liquidity in Australia and reveals a significant effect of women's existence on the board on stock liquidity during 2008 when the regulation of gender diversity of higher management was enforced in Australia. The study also shows that the existence of more than one female on the board affects stock liquidity significantly and positively. These findings are further supported by the critical mass theory in which stated that the more like-minded people working together for the same goal could lead to a better result, in this case, is increasing the monitoring function of the board. The study concludes that the bigger the number of females on board leads to a better monitoring function of the board, thus increasing the firm's credibility in the eyes of investors/potential investors then increasing the firm's stock liquidity.

On the other hand, Loukil's (2019) study, which investigates the effect of gender diversity on the board to information asymmetry in the French Market, reveals that there is no significant impact of the existence of females on board to the bid-ask spread of the firm's stock that reflected the stock liquidity of a firm. These findings imply that the French Market do not think females on board are determinant in keeping and improving the monitoring function of the board. This study also reveals that the existence of females in family-owned companies can potentially deter investors/potential investors from making a transaction on the firm's stock, especially if the female member(s) of the board is/are also a family member of the company owners. This finding implies that the French Market sees it as a form of tokenism and as opportunistic behavior of said companies in a way that it is potentially misleading investors/future investors by giving a false impression of females' forementioned credibility in keeping and improving the monitoring function of the board.

This study aims to examine the effect of gender diversity on the board of commissioner on stock liquidity of non-financial firms listed in LQ45 during the 2013-2017 period. The hypotheses to be tested are:

H1: Gender diversity has a negative effect on stock illiquidity;
H2: Gender diversity has a positive effect on stock turnover;
H3: Gender diversity has a positive effect on liquidity ratio;
H4: Independent director has a negative effect on stock illiquidity;
H5: Independent director has a positive effect on stock turnover;
H6: Independent director has a positive effect on liquidity ratio.

2 RESEARCH METHODS

The samples used for this study were gathered from LQ45, a list of 45 most liquid stocks in the Indonesia Stock Exchange. The nature of the data used in this study was secondary data in the form of daily stock trading data (trading volume and stock price), board's composition (percentage of females, percentage of independent director, and board size), firm size of its market capitalization, and leverage. Data collection was done through web-search via google.com for the annual reports and finance.yahoo.com for the stock trading data.

This study used all non-financial firms listed on LQ45 of the Indonesia Stock Exchange in 2013-2017 for its' population target. Some requirements need to be met for the sample to be eligible to be used in this study (1) having a complete annual report during 2013-2017, (2) Stock trading activity must start at least from January 2013, and

(3) having data that can support the variables.

This study used ordinary least squares to assess the effect of its independent variables on its' dependent variables. The independent variables used in this study were *Amihud Illiquidity Measure* (*ILLIQ*), stock turnover (TO), and Liquidity Ratio (LR), the three of them are representative proxies of stock liquidity. Percentage of females on boards (PercOfWomen), independent director proportion (INDirector), and board size (BSize) are three proxies of board composition to measure gender diversity on the board. Lastly, firm size (FSize) and leverage (LEV) are used as the control variables.

The formula for measuring illiquidity is:

$$ILLIQ_{iy} = \frac{1}{D_{iy}} \sum_{d=1}^{D_{iy}} \frac{|R_{idy}|}{VOLD_{idy}}$$

where:
$ILLIQ_{iy}$ = Illiquidity of stock i year y
D_{iy} = trading days of stock i year y
R_{idy} = Absolute stock return of stock i day d year y
$VOLD_{idy}$ = trading volume of stock i day d year y

The formula for measuring stock turnover is:

$$TO_{iy} = \frac{VOL_{iy}}{N_{iy}}$$

where:
TO_{iy} = turnover of stock i year y
VOL_{iy} = trading volume of stock i year y
N_{iy} = number of shares i year y

The formula for measuring liquidity ratio is:

$$LR_{iy} = \frac{\sum_{d=1}^{Diy} (VOL)_{idy}}{\sum_{d=1}^{Diy} |R_{idy}|}$$

where:
LR_{iy}= liquidity ratio of stock i year y
VOL_{idy}= trading volume of stock i year y

Since there are three different proxies used to measure stock liquidity, this study has three equations:

$$ILLIQ = \beta_0 + \beta_1 Percofwomen + \beta_2 INDirector + \beta_3 BSize + \beta_4 FSize + \beta_5 LEV + \varepsilon \quad (1)$$

Where *ILLIQ* represents *Amihud Illiquidity Measure*, β_0 is constant value, $\beta_1, \beta_2, \beta_3$, β_4, and β_5 are regression coefficient, *Percofwomen* represents the percentage of females on the board of commissary, *INDirector* is the percentage of independent director on the board, *BSize* is board size ,*LEV* represents *leverage*, and ε represents *error term*.

$$TO = \beta_0 + \beta_1 Percofwomen + \beta_2 INDirector \; \beta_3 BSize + \beta_4 FSize + \beta_5 LEV + \varepsilon \quad (2)$$

Where *TO* represents stock turnover, β_0 is constant value, $\beta_1, \beta_2, \beta_3$, β_4, and β_5 are regression coefficient, *Percofwomen* represents the percentage of females on the board of commissary, *INDirector* is the percentage of independent director on the board, *BSize* is board size ,*LEV* represents *leverage*, and ε represents *error term*.

$$LR = \beta_0 + \beta_1 Percofwomen + \beta_2 INDirector + \beta_3 BSize + \beta_4 FSize + \beta_5 LEV + \varepsilon \quad (3)$$

Where *LR* represents liquidity ratio, β_0 is constant value, $\beta_1, \beta_2, \beta_3$, β_4, and β_5 are regression coefficient, *Percofwomen* represents the percentage of females on the

board of commissary, *INDirector* is the percentage of independent director on the board, *BSize* is board size, *LEV* represents *leverage*, and *ε* represents *error term*.

3 RESULTS AND DISCUSSION

After all the data needed for this research has been collected and tabulated, the next step was to process the descriptive statistics. Following the population characteristics required for this research, there were 48 companies listed in LQ45 that fit the requirements. With five years of research period started from 2013 to 2017, the data studied were 240. Table 1 shows the results of the descriptive data processing for the variables used in this study.

Table 1. Descriptive Data of Companies Listed in LQ45 over the 2013-2017 period

No	Variable	Mean	Med.	Maximum	Minimum	Std. Dev.	Skewness	Curtosis
Panel A. Dependent Variables								
1	ILLIQ	0.0001	0	0	0	0.0004	3.642	17.7419
2	TO	0.6883	0.3418	0.0043	0.0043	0.9582	3.337	17.0017
3	LR	0.1366	0.0732	1.7445	0.0006	0.193	4.2751	28.1866
Panel B. Independent Variables								
4	PercOf Women	0.0838	0	0.67	0	0.139	1.9705	7.2594
5	INDirector	0.3985	0.375	0.8333	0.1429	0.1097	1.8287	7.7148
6	BSize	5.7617	6	12	2	1.6726	0.8357	5.0702
Panel C. Control Variables								
7	FSize	30.686	30.722	33.32	28.4252	0.8236	0.247	3.559
8	LEV	0.4959	0.503	1.963	0.018	0.2075	1.207	12.252

(source: data processing results)

In this research, the fixed-effect model weighted white cross-section method is used for illiquidity (*ILLIQ*), while stock turnover (*TO*) and liquidity ratio (*LR*) use the random effect model white cross-section method. The results are as shown in Table 2.

Table 2. The Results of Regression Analysis

		ILLIQ		TO		LR	
No	Variable	Coeff.	t-Statistic	Coeff.	t-Statistic	Coeff.	t-Statistic
1	PERCOFWOMEN	0.0003*	2.4382	0.4263*	0.6118	0.0295*	0.2034
2	INDIRECTOR	-0.0010*	-3.39	0.4592*	0.7947	0.0153*	0.1301
3	BSIZE	0.0000*	-2.1384	-0.0686*	-1.95	-0.0136*	-1.571
4	LEV	-0.0001*	-2.108	0.1804*	1.5922	0.0461*	2.6037
5	FSIZE	-0.0005*	-4.3464	-0.3478*	-3.817	-0.0456*	-1.713
6	C	0.0174*	4.4293	11.4518*	4.3311	1.5833*	1.9689
	Weighted Statistics						
7	Number of samples	48		48		48	
8	Adj. R-squared	0.4669		0.054		0.0199	
9	F-statistic	5.0254		3.728		1.9728	
10	Prob(F-statistic)	0		0.003		0.0835	

*Significant at 5%
(source: data processing results)

The regression shows that *PercofWomen* has a significant positive effect on *ILLIQ*, which means that the higher the gender diversity, the higher the stock illiquidity of a company. These results imply that there might be tokenism happening in which females are used only to fulfill the status quo without accounting for their competency in monitoring function as a board of commissioners. The lack of competency in monitoring function might cause the asymmetry of information, thus

making the investors reluctant to make transactions on the stock and increase the stock's illiquidity (Zelechowski & Bilimoria 2004). Gender diversity can also heighten the potential of discrimination (Alexander et al. 1995, Blau 1977), increase the probability of conflicts (Richard et al. 2004), and decrease cohesion, satisfaction, also commitment in the company (Jackson et al. 2003, Pfeffer 1983) in which might decrease the effectiveness of the monitoring function in the board of commissioner. The effect of *PercofWomen* on *TO* and *LR* are found to be insignificant, which means that gender diversity does not matter to the stock liquidity of a company. As human capital theory stated, management behaviors are affected by social values, psychological characteristics, and the country's demography where the company resides. CSRI (Credit Suisse Research Institute) found that in 2015 the percentage of females on the boards of the companies in Indonesia is only 11.5% and decreased to 10.9% in 2016. There are some reasons behind the lack of appreciation of females in higher management positions, one of them being Indonesian is still holding on to a hierarchical and patriarchal mindset that puts males forward and foremost as a leader in an organization. This kind of mindset also makes females reluctant to advance their careers further because there is a perception that it will ruin the work-life balance and put their family at risk of abandonment (Khidhir, 2019).

Another implication from these results is that local investors do not account for gender diversity in the board of commissary as a part of their signaling tools for their investment decisions, thus making its' effect insignificant to the stock liquidity.

As seen in Table 2, INDirector has a significant negative effect on illiquidity, which means the more independent director in a board of commissioner, the less their stock illiquidity. Board member independence tends to decrease agency problems by giving a better flow of information (Foo & Zain, 2010), thus making investors more eager to do the transaction on the stock. Another implication is that independent board members tend to give a more comprehensive financial report, thus decreasing information asymmetry between the company and investors, making the stock liquidity increase. These implications can also be applied to the effect of INDirector on stock turnover.

4 CONCLUSION

Based on the research results and discussions that have been stated, it can be concluded that gender diversity does not have a significant effect on stock liquidity. However, it potentially negatively affects stock liquidity since Indonesian still sees higher position females as a negative thing. These findings are contrary to the hypotheses that have been formulated. Independent board's member has a significant positive effect on stock liquidity which align with the hypotheses that have been formulated. This is because independent board members tend to give more comprehensive information and a better flow of information, thus decreasing agency problems, making investors more eager to do transactions in said stocks.

REFERENCES

Adams, R. B., and D. Ferreira (2009). Women in the Boardroom and Their Impact on Governance and Performance. *Journal of Financial Economics* 94(2): 291–309.

Ahmed, Ammad dan Searat Ali. 2017. Boardroom gender diversity and stock liquidity. *Journal of Contemporary Accounting & Economics* 13 (2):148-165.

Alexander, Jeffrey & Nuchols, Beverly & Bloom, Joan & Lee, Shoou-Yih. 1995. Organizational Demography and Turnover: An Examination of Multiform and Nonlinear Heterogeneity. *Human Relations*. 48 (00):1455-1480.

Allard, M. June. 2002. Theoretical underpinnings of diversity, in: Harver, C.P. dan Allard M.J.. *Understanding and Managing Diversity: Reading, Cases, and Exercises. 2nd Edition.* New Jersey: Prentice Hall Upper Saddle River.

Amihud, Y., and H. Mendelson. 2000. The liquidity route to a lower cost of capital. *Journal of Applied Corporate Finance* 12 (4): 8-25.

Bartov, E., and G.M. Bodnar. 1996. Alternative accounting methods, information asymmetry and liquidity: theory and evidence. *Accounting Review* 71(3): 397-318.

Blau, P. M. 1977, *Inequality and Heterogeneity* New York:The Free Press

Brennan, M, dan A.W. Subrahmanyam. 2013. An analysis of the Amihud illiquidity premium. *Review Asset Pricing Study* 3 (1): 133-176.

Chen, Charles & Jaggi, Bikki. 2001. Association Between Independent Non-Executive Directors, Family Control and Financial Disclosures in Hong Kong. *Journal of Accounting and Public Policy*. 19. 285-310. 10.1016/S0278-4254(00): 00015-6.

Davies, M. 2011. Woman on boards. *UK Business Innovation and Skills Department*. Retrieved from www.bis.gov.uks/assets/biscore/business-law/docs/w/11-745-Women-on-Boards. accessed on 04/04/2018.

Foo, Yee-Boon & Zain, Mazlina Mat, 2010. Board independence, board diligence and liquidity in Malaysia: A research note. *Journal of Contemporary Accounting and Economics* 6(2): 92-100.

Ghozali, Imam. 2011. *Aplikasi Analisis Multivariate Dengan Program SPSS*. Semarang: Badan Penerbit Universitas Diponegoro.

Gujarati, Damodar, 1995. *Ekonometrika Dasar*. Jakarta: *Penerbit Erlangga*.

Hasbrouck, J. 2009. Trading costs and returns for US equities: estimating effective costs from daily data. *Journal of Finenace*. 64(3): 1445-1477.

Jackson, Susan & Joshi, Aparna & Erhardt, Niclas. 2003. Recent Research on Team and Organizational Diversity: SWOT Analysis and Implications. *Journal of Management*.29 (6): 801 -830. Doi:10.1016/S0149-2063_03_00080-1.

Khidhir, Seith. 2019. The Gender Gap in Indonesia's Corporate World. *The Asean Post*. Retrieved from https://theaseanpost.com/article/gender-gap-indonesias-corporate-world. Accessed on 03/12/2020.

Loukil, Nadia, R. Yerbanga and O. Yousfi.2015. Does gender diversity on boards reduce information asymmetry problems? Empirical evidence from the French market. *Journal of Family Business Management* 10(2):. 144-166. https://doi.org/10.1108/JFBM-02-2019-0007

Mathis, R.L. and Jackson, J.H. (2001). Keanekaragaman dan kesetaraan kesempatan bekerja dalam J. Sadeli dan B.P. Hie (Eds). *Manajemen Sumber Daya Manusia*. Jakarta:Salemba Empat.

Pfeffer, J. 1991. Organization Theory and Structural Perspectives on Management. *Journal of Managem*ent 17(4):789–803. https://doi.org/10.1177/014920639101 700411.

Richard, O. C., Barnett, T., Dwyer, S., & Chadwick, K. (2004). Cultural Diversity in Management, Firm Performance, and The Moderating Role of Entrepreneurial Orientation Dimensions. *Academy of Management Journal* 47(2): 255–266.

Zelechowski, D. D., & Bilimoria, D. (2004). *Characteristics of* Women and Men Corporate Inside Directors in the US. *Corporate Governance* 12(3): *337–342*. doi:10.1111/j.1467-8683.2004.00374.x