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BOARD DIVERSITY AND PRICE INFORMATIVENESS FOR MALAYSIAN TOP 100 PUBLIC LISTED FIRMS

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ABSTRACT

This study examines the relationship between the diversity of board members and the price informativeness in the top 100 Malaysian public listed firms. By incorporating a series of the corporate governance and firm characteristic control variables, our findings indicate a negative relationship between ethnic diversity and price informativeness, suggesting that a less diverse board led to a more informative stock price. Nevertheless, gender diversity shows no significant impact. When the sample is divided into board with foreign director(s) and without foreign director, we find that the influence of ethnic diversity on price informativeness does not hold in the former firms. Our overall results imply that less ethnic diversity board reduces internal disagreement during board meetings. The existence of foreign directors mitigates the disagreement and thus undermine the influence of board ethnic diversity on price informativeness. Distinctively, our finding suggests that board foreign investors reduce the asymmetry information by importing corporate governance, yielding essential implications for policy makers.

***JEL classification**: G1, G3.*
***Keywords**: Ethnic diversity, gender diversity, stock price informativeness, top 10 firms.*

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1. INTRODUCTION

Stock price informativeness marks a crucial force in improving market efficiency, notably in the decision-making process of capital investment. The basic idea of economic theory indicates that higher level of firm-specific information reflected in stock price enhances the efficiency of wealth investment. The literature on price informativeness originated from Roll (1988), who has shown that a significant proportion of stock return variation is inconsequential redounding from the market- and industry-prices movements, but these residual movements denote the firm private information that impounded into prices through informed trading. Based on this groundwork, Morck et al. (2000) assembled then analyzed samples from 40 countries suggest that stock prices in developing countries exhibit a more synchronous manner compare to advanced economies. The analysis indicates that the Malaysian market is ranked as one of the most synchronous, which

mean least informative in their sample. The ground argument is that the firm arbitrage activities could be relatively unattractive in the emerging market due to low quality of property protection and low level of corresponding informed trading (Chan and Hameed, 2006; Kim and Shi, 2012; He et al., 2013).

The existing studies on stock price informativeness essentially focus on the cross-country level, and firm level within a single country. These studies, however, associated various issues such as price informativeness with the institutional investor (Xu and Malkiel, 2003; Piotroski and Roulstone, 2004; Kacperczyk et al., 2018), foreign investors (Hao et al., 2015; Lim et al., 2016; Vo, 2017), voluntary disclosure and transparency (Haggard et al., 2008; Dasgupta et al., 2010), trading structure (Kim and Yi, 2015), board structure (Gul et al., 2011; Huang and Ni, 2017; Ni, Huang and Chan, 2019), corporate governance (Yu, 2011) and activities of financial analysts (Kim and Shi, 2012b; Feng et al., 2016, Ding et al., 2017), ownership blockholdings (Gul et al., 2010; Brockman and Yan, 2009) and large ownership structure (Boubaker et al., 2014; Feng et al., 2016). Contrariwise, few empirical shreds of evidence examine the impact of board directors' structure on the amount of firm-specific information incorporated into stock prices. Notwithstanding, Ferreira et al. (2011) show empirically the board autonomy has a negative relationship with price informativeness for United States firms. While Gul et al. (2011) assembled Chinese firms from 2001 to 2006, suggested gender of the board of directors is directly associated with the amount of information incorporated into the firm stock price.

Another study by Sun and Yu (2014) taken the number of directors on board and the dummy variable of CEO-chairman separation as independent variables demonstrate that stock price is highly informative for the firms with a lower number of independent directors and lower probability of CEO-chairman separation. Other indicators of board structures, for instance independent directors, CEO duality and directors' remuneration (Huang and Ni, 2017) and board culture such as CEO-chairman dialect similarity (Fu, Liu, and Qin, 2020) and board of directors' foreign experience (Ullah et al., 2020) show a significant positive relationship with stock price efficiency. These studies, however, focused on the presence of board leadership corporate structure characteristics of female directors, such as CEO-chairman separation or dialect-similarity, while ignoring the extent of the ethnic background as a strong impact on the efficiency of board monitoring and thereby influence the information disclosure. Unlike previous literature, our study explores how the board directors' ethnic and gender diversity would impact on the stock price informativeness for top 100 Malaysian public listed firms. Thus, provides confirmative views in understanding and explore the association between ethnic diversity and price efficiency.

We are motivated to examine the influence of gender and ethnic diversity of the board of directors on stock price informativeness for Malaysian public listed firms for few reasons: Firstly, there have been very few studies investigate the influence of corporate structure on the price informativeness, and most of the existing articles look into independent board of directors, CEO cum chairman variable, director's remuneration. Thus far, literature on ethnic diversity has not been explored earlier in the research on the firm's price efficiency. Therefore, this measurement represents a novelty to the existing literature. Secondly, Malaysia is a multiracial and multicultural nation, opens the occasion to find diverse ethnics in its board members. The study by Gul et al. (2010) exhibits that 89% of Malaysian listed firms have at least two ethnicities in the board of members. In 2019, the composition of Malaysian citizens by major

ethnic consists of Malay (69.3%), Chinese (22.8%), Indians (6.9%), and others (1.0%)[1]. This demographics diversity, where different ethnic practices each unique cultures, and speak different ethnic languages, yet Malaysian communicates well bilingually; Bahasa Malaysia and English. Previous studies linked some demographic features, other than ethnicity that might influence a significant level of decision making among some corporate boardroom members, such as the level of generosity in sharing opinion (Haniffa and Cooke, 2002) and the level of individualism (Hamzah et al., 2002), found that these demographic profiles, other than ethnicity significantly linked to certain decision-making traits.

Conversely, our study tries to acknowledge how the boardroom members consist of diverse ethnicity, taking part in board discussion and decision-making level could affect the price informativeness. Thirdly, according to a World Bank report on "*Women on Boards in Malaysia*" the representation of women on the boards of Malaysia Top 100 corporations increased by 13.8% in 2016. Since 2017, the Malaysian government has initiated a scheme to push for 30% women representatives on public listed boards by 2020[2]. Prior articles depict that women board directors play a crucial role in enhancing board governance, yielding a higher rate of boardroom meeting attendance and leading the more thorough discussion in the board meeting (Adams and Ferreira, 2009). Specifically, the existence of women directors mitigates the conflicts during boardroom meetings and promote better board communication, leads to voluntary public disclosure compared to board with only male directors (Clark, 2005; Mclnerney-Lacombe et al., 2008). The question arises: is the combination of gender in boards or the all-male boards contributing more to stock price informativeness? This study will shed light on this issue for the top 100 public listed firms in Malaysia.

The rest of this study proceeds as follows. The next section reviews the literature on price informativeness and develops the hypothesis. Section 3 presents the measurement the variables and model specifications. Section 4 explains the sample and data descriptive. Section 5 presents the empirical results. In addition to the baseline results, it also presents an attempt to deal with the robustness checks on endogeneity issues. Section 6 concludes the study.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This section illustrates the definition and measurement of stock price informativeness and reviews those studies that explore the underlying factors affecting the stock price informativeness in cross-country level as well as firm-level. The review of the role of price informativeness as an independent variable is also covered in this section.

Stock price informativeness is the inverse meaning of stock returns synchronicity. The idea of price synchronicity is pioneered by Roll (1988), throughout his seminal article investigates the movement of cross-country stock prices and the components that explained the movement. The stock prices are said to be synchronous or less informative when they move in the same direction. Roll (1988) argued there was a shred of significant evidence that the synchronous movement across the stock markets

[1] These figures are obtained from Department of Statistics Malaysia, https://www.dosm.gov.my.

[2] The revised version of Malaysian Code on Corporate Governance (MCCG) 2017 has made an amendment on board composition stated in Clause of 4.5 that public listed firm board must have at least 30% of women directors and the information must disclose in the annual reports.

would affect market efficiencies in three components; economic news, industry events and firm-specific information. The fundamental premise from Roll (1988) is that higher synchronicity of the stock price would create the economic news and industry event despite, the large portion of stock prices variation contains firm-specific information leads to lower synchronicity, vice versa.

Additionally, at the firm level, stock price informativeness refers to the magnitude of the firm's latest, new or private information impounded into the stock price. More specifically, to what extent the change of stock price is due to the disclosure of the firm's new and specific information into the price. In other words, the stock price is said to be informative or efficient when the incorporation of 'considerable' amount of firm-specific information into the stock price leads the change of stock price movement. Morck et al. (2000) make the first move in developing a linear regression R^2 market model to measure the synchronicity of stock price: $r_{it} = \alpha_i + \beta_1 r_{mt} + \varepsilon_{it}$, where r_{it} is stock firm i's return in period t, and r_{mt} is the market index return. The statistic of R^2 refers to the ratio of systematic return variations from known economic news and industry events to total return variation**.** From thereon, Morck et al. (2000) then formulate the logistic transformation to the ratio of $R^2/(1-R^2)$ to measure the stock price synchronicity, $\gamma_i = log\left(\frac{R_i^2}{1-R_i^2}\right)$. The measurement has been commonly used and supported by abundant researchers to gauge the amount of firm-specific information capitalized in stock prices. Notable examples are those of Wurgler (2000), Durnev et al. (2003), Piotroski and Roulstone (2004), Fernandes and Ferreira (2009), Dasgupta et al. (2010), Gul et al. (2011), Kim and Shi (2012), Feng et al. (2016), Vo (2017) and Fu et al. (2020). The focus of these studies is on identifying the factors that contribute to variations in market model R^2. The variables used in these studies significant determinants is property rights protection, financial transparency, analyst forecast activities, corporate governance, audit quality, and insider trading laws.

Early research focuses on examining the impact of financial transparency and legal environment on the cross-country stock prices synchronicity. Theoretically, stock returns in emerging markets exhibit higher synchronicity as compare to developed economies. This higher synchronicity trend could be due to few reasons: poor property protection, low level of corresponding informed trading, low degree of voluntary discloses and, corporate and financial transparency. Hence**,** Morck et al. (2000) are one of the first academic literature exploring the stock synchronicity manner in the scope of both developed and emerging countries. In their seminal paper, three measures: R-squared, stock price synchronicity and earnings co-movement index, are used to capture the stock prices covary. Their results demonstrate that stock prices are less synchronize in developed economies due to the rigorous legal protection of investors' property rights. This legal protection limits the arbitrage activities controlled by blockholders and restricts the presence of noise traders, and thus increase the impediment of stock information flow to the market. The rigorous legal protection also leads to less transparency of financial information yet more common news reflected into stock prices. Study by Jin and Myers (2006) examine the impact of opaqueness on the R-squared in 40 countries. An Opaqueness in less developed countries is directly related to the low quality of legal protection on investors' property rights. They find that both variables contribute to higher synchronicity of stock returns. Besides, their finding also implies a positive relationship between crash frequencies and synchronicity, that investors probably will experience a loss if the stock exhibit a higher synchronous trend.

Turning to the research on the firm level, Kim and Shi (2012) discover that firms in countries with poor legal environment will have lower informational stock prices. The voluntary adoption of the International Financial Reporting Standard promotes more firm-specific information incorporated into the stock prices. Using U.S. data, Piotroski and Roulstone (2004) find a pronounced finding forecasted analyst is positively associated with stock return synchronicity, indicating the analyst activity encourage the incorporation of industry-level information instead of firm-specific information into firm's stock prices. Similarly, a study by Chan and Hameed (2006) indicated the direct magnitude impact of inferred analyst coverage on stock price synchronicity in an emerging market. Their exploratory analysis suggests that the higher quality analyst coverage might render the production of more accurate information, thus the higher market-level news is incorporated into stock prices. However, the relationship is weaker by the greater forecast dispersion. Concurrently, a study by Feng et al. (2016) extent the research region to China, has demonstrated an inverse effect of analyst coverage on stock price informativeness and this effect is stronger when the rights of decision making are separated from cash flow rights. Ding et al. (2017) show that the impact of financial analysts on stock price efficiency is more influential in the province with loose legal enforcement.

The debate of the significant link between corporate governance elements and price informativeness has gained growing attention from researchers. By investigating the three types of governance mechanism- analyst following, ownership concentration, and operational complexity, Farooq and Ahmed (2014) show that the former has negative and two latter has a positive relationship with stock price informativeness. Using firm-level cross-country data, Yu (2011) demonstrates that price efficiency exhibits a direct relationship with a firm's corporate governance. Interestingly, these findings support the contention that firms governed by a strong controlling team are expected to enhance the firm information monitoring, increase the accuracy of- and reduce the cost of gathering-information disclosure. These firms normally exhibit higher openness to an outside event such as acquisitions of better projects, thereby sharing and exposing more firm-specific information into the stock price.

On a different point to foreign ownership, Gul et al. (2010) find that foreign ownership is negatively correlated with stock return synchronicity are positively associated with the amount of firm-specific information incorporated into stock prices. This finding is supported by Bae et al. (2012) and He et al. (2013). He et al (2013) rest on 40 developed and developing economies, document that positive influence of foreign ownership on price efficiency is found more pronounced in developed economies. Lim et al. (2016) provide more insights on the relationship between foreign ownership and stock price informativeness. They find that foreign ownership induces the incorporation of the local international common information into stock prices. While Boehmer and Kelley (2009) demonstrate that causal relationship occurs between total institutional ownership and price informativeness. This relationship is stronger when most of the shares are held by institutions. They also infer that the volume of trading and the level of institutional holdings contribute most information into stock price during the off-trading period.

A seminal work by Ferreira et al. (2011) contributes to the literature on how the board corporate governance affects the amount of firm information incorporated into its stock price. The study indicates the inverse proportion between price efficiency and board independence, the board member attendance frequency, number of board members, and number of the board meeting. They claim that price informativeness plays a substitution

role with board structure through exercising an effective board governance structure. Building upon this contention, a growing body of financial literature provides evidence on board structure and price informativeness. Gul, Srinidhi, and Ng (2011) stated that gender-diverse board members would increase the quality and effectiveness of board meetings by alleviating the disagreement among the board members. Intuitively true that the presence of female board members is likely makes male members higher confident in verifying the company's report, rendering more information disclosure. Their findings strongly support the hypothesis that higher gender diversity in board members improves the information impounded into the stock price. Consistent with Gul et al. (2011), using A-shares listed in Shanghai and Shenzhen stock exchanges, Sun and Yu (2014) observe that stock price is highly informative for the firms with a lower number of independent directors and lower probability of CEO-Chairman separation. Whilst, Gul et al. (2011) extend their research to the influence of board gender diversity on stock price efficiency. Firms with a more diverse board were found to be correlated with higher stock price informativeness. Using trading days moving average to proxy the price informativeness, Huang and Ni (2017) find that low debt, higher earnings per share, and smaller board size leads to more information reflected in the price. The findings imply that a firm with a well-functioning board tends to experience strong firm's performance with a high level of price informativeness. Another interesting work on boardroom structure is findings from a study by Ullah et al. (2020). The data acquired boardroom member's characteristics of the Chinese A-share listed firms argued that board of directors' foreign placement experiences is another factor that could enhance the informativeness of stock price. They opine that foreign experience creates different skills and knowledge that can benefit the firm in reducing the environmental uncertainties and impound more symmetry information into the price. In addition, Fu et al. (2020) claim that the CEO-board chairman dialect similarity increases the level of price informativeness. Their result implies that the dialect similarity strengthens the allegiance of managers to the board and limits their extraction of private benefits, thereby impounded more information into the stock price.

Based on the empirical studies above, the distinct characters and background of board of directors have been analyzed based on price informativeness (Gul et al., 2011; Huang and Ni, 2017; Ullah et al., 2020 and Fu et al., 2020), results-wise, however, none of these studies has scrutinized the impact of ethnic diversity on price informativeness, which expected to have directly influenced the effectiveness of board monitoring. In Malaysian multiracial and multicultural corporate governance setting particularly, the diverse ethnic in a company's director board is a prevalent phenomenon. The presence of ethnic diversity is expected to play a crucial role in the effectiveness of board monitoring and information disclosure, thus influencing the level of price informativeness. Therefore, our study aims to examine how strong the relationship between ethnic diversity and price efficiency. The correlations between two variables can be justified in two-strand: A good-mixed of directors from different ethnic from different background, competences, capabilities and experiences is believed to lead to a better quality of meeting outcome and produce a better information disclosure. Conversely, a poor-mixed of board members will create internal conflicts, deteriorate the argument in specific issues, taking relatively long compromise a decision. The inefficiency of board monitoring constrains the firm-specific information to be incorporated into stock price. Some of the differentiations among the major ethnic have been proved in the previous studies. Haniffa and Cooke (2002) found that Malay directors are more generous in giving opinions while Hamzah et al. (2002)

reveal that Malays had lower individualism than Chinese. Because of the ethnic diverse directors is part of board structure, they are directly link to the discussion and decision making in the board. Thus, the role of ethnic diversity of board members on price informativeness is non-negligible. Thereby, we posit our first hypothesis as follows;

Hypothesis 1a: Ethnic diversity has a positive and significant relationship with stock price informativeness

Hypothesis 1b: Ethnic diversity has a negative and significant relationship with stock price informativeness

This study primary objective is to examine the impact of ethnic diversity of board of directors on stock price informativeness for the top 100 Malaysia public listed firms. Not less important, this study also attempts to further investigate the association between gender diversity of board of directors and stock price informativeness. Board gender diversity is believed that could improve the quality of board discussions and increase the ability of the board to provide better oversight of firm's information disclosure (Gul et al., 2011) and decrease the asymmetry information, thereby the firm's stock price will be more informative. In addition, the stock price informativeness tend to be higher for the board with female directors owing to the existence of female directors enhances the quality of board deliberations and tough issue discussion (Mclnerney-Lacombe et al., 2008; Clark, 2005) compare to the board with only male directors, as well as increase the effectiveness of board communication and voluntary public disclosure. From these contentions, gender diversity is expected to improve stock price informativeness. Our second hypothesis is thus posited as follows;

Hypothesis 2: Gender diversity is significantly positive associated with stock price informativeness

3. MEASUREMENT OF VARIABLES AND MODEL SPECIFICATION

3.1 Stock price informativeness *(SPI)*

This study employs market-model R-squared which was developed by Roll (1988) to measure the informativeness of the stock price. Roll (1988) introduces the measure of R-squared of stock return, extracted from the regression of systematic risk components (market and industry news) and firm-specific information. Roll's result reveals that the residual of stock returns in market model is not redounding from systematic components but stemming from the residual of firm-specific information component. This measure was then modified by Morck et al. (2000) to measure the co-movement of stock price.

We follow An and Zhang (2013), employ the Morck modified R-squared model by regressing the firm stock return on market and industry returns as follows,

$$RET_{i,t} = \beta_0 + \beta_1 MARKETRET_{i,t} + \beta_2 INDUSTRYRET_{i,t} + u_{i,t} \quad (1)$$

where $RET_{i,t}$ is the stock return of firm *i* in week *t*; $MARKETRET_{I,t}$ and $INDUSTRYRET_{i,t}$ denotes as the market and industry returns in week *t*, respectively. Standard errors are cluster at the firm level in all regressions.

The statistic of R^2 refers to the ratio of systematic return variation (economy news and industry events) to total return variation. We then measure the idiosyncratic volatility by

taking the proportion of the volatility components divided by the total variation, $\frac{1-R_{i,t}^2}{R_{i,t}^2}$. We transform this measurement into logarithm term to obtain the measure of stock price informativeness (ψ),

$$\psi_{i,t} = ln\left(\frac{1-R_{i,t}^2}{R_{i,t}^2}\right) \quad (2)$$

The higher $\psi_{i,t}$ represents more firm-specific information is incorporated into firm's price. In other word, firm's price is more efficient with the higher value of SPI or vice versa.

3.2 Ethnic diversity *(ETHNIC)*

Ethnic diversity measures how diverse are the ethnic backgrounds of the board of directors from top 100 Malaysian public listed firms. The data are hand-collected from the annual report of the firms in bursa Malaysia. We divide the board of director into five possible ethnics: Malay, Chinese, Indian, Others (Bumiputera from Sabah and Sarawak, Singh, Eurasian) and Foreigner. A distinctive way is applied to identity the different ethnic of board members, in which acquire the members' names, photos and further information in their profiles. In term of the measurement, we adopt the Blau's (1977) index to gauge ethnic diversity of board directors. The index is formulated as 1-$\sum p_i^2$, where p_i is the proportion of each ethnic of overall board members. The value of index ranges from zero to one. The ethnic is more (less) diversified when the Blau's index is approaching 1(0).

3.3 Gender diversity *(GENDER)*

Gender diversity refers to the magnitude of diversity of the board of directors for each public listed firm. This data can be purchased from bursa Malaysia for this research period from 2000 to 2018. Gender is divided into Male and Female board of directors. The Blau's index (1977) discussed in (ii) is used to calculate the diversity. The value of Blau's index ranges from zero to one. The gender is more diverse when Blau's index is near to 1, and vice versa when it is approaching 0.

3.4 Model specification

The methodology applies to panel analysis with the baseline pooled ordinary lease square (POLS) regression. The econometric software applies in the study are EViews 10 and STATA 16. Double-clustered POLS is used to estimate equation (3) to mitigate the possible biases that arise from within-cluster correlation. To test the hypotheses of this research, we specify the following panel regression model,

$$\psi_{i,t} = \beta_0 + \beta_1 ETHNIC_{i,t} + \beta_2 GENDER_{i,t} + \sum_{j=1}^{J} \delta_j CONTROL_{i,t}^{j} + \sum_{t=1}^{T-1} \gamma_t YR_t + \sum_{k=1}^{K-1} \varphi_k IND_k + \varepsilon_{i.t} \quad (3)$$

where *i* refers to the firm and *t* is the year. ψ refers stock price informativeness, *ETHNIC* indicates ethnic diversity and *GENDER* is gender diversity. *CONTROL* covers all firm characteristic and corporate governance control variables. We follow previous research Gul et al. (2010), Ferreira et al. (2011) and Ben-Nasr and Cosset (2014), incorporate a series control variable to avoid the potential biases of omitted variables. *CONTROL*

include Firm size (*FSIZE*) is measured by logarithm value of the book value of total assets at year-end. *FAGE* is the number of years from the company's initial public offering prior to year-end; Leverage (*LEVERAGE*) is the ratio of total debt to total assets; *ROA* is defined as operating income scaled by total assets measure at year-end; Market-to-book (*MTB*) is market value divided by book value of equity; *TURN* is defined as the number of shares traded divided by the common shares outstanding; *BSIZE* measures the total number of board of directors on a firm's board at year-end; *BINDEP* is scaled by dividing the number of independent directors with total directors on the board; *DUALITY* is an indicator coded 1 if the chairman is also chief executive director, 0 otherwise; *CHAIR* is coded 1 if the chairman is an independent executive director, 0 otherwise; *BIG4* refers to four largest audit firms in Malaysia, firms whose employ one of these audit firms is coded 1, 0 otherwise; *PCTEE* denotes political connection, a dummy variable coded as 1 if a firm is political connected follow the definition given by Tee (2017), 0 otherwise; Local institutional ownership (*LINST*) is the percentage of shares held by local institutional investors over total shares outstanding while foreign institutional ownership (*FINST*) is the percentage of share held by foreign institutional investors relative to total shares outstanding. All the continuous variables, except dummies (*DUALITY, CHAIR, BIG4* and *PCTEE*) are winsorized at the 1st and 99th percentiles to reduce the influence of outliers. Year (*YR)* and industry (*IND)* are included to control the potential fixed effects of time and industry.

4. SAMPLE AND DESCRIPTIVE STATISTICS

The sample of this study encompasses the top 100 public listed firms in bursa Malaysia during 2002-2019. Follow Boubaker et.al. (2014), we confine our sample to non-financial firms as the incompatible of accounting standards with other sectors. We retrieve the financial data includes stock price, total assets, total debt, total share traded, book value of equity and operating income from Thomson Reuters DataStream. However, the corporate governance and board structure data are manually collected from annual reports of the firms in Bursa Malaysia website.

We report the summary statistics in Table 1 for the main variables - stock price informativeness (*SPI*), ethnic diversity (*ETHNIC*), gender diversity (*GENDER*) and all the control variables. The *SPI* measure has a median 1.2249 is slightly lower than the median reported by Hou et al. (2012) for Chinese firms. *ETHNIC* is measured by Blau's index, ranging from 0 (less diverse) to 1 (more diverse). The mean of 0.4442 shows that less than half or almost half of top 100 Malaysian public listed firms, on average, are consists racially diverse directors. Our mean value is slightly higher than the mean value reported by Gul et al. (2011) for 3255 Malaysian public lister firms. This could be due to the top 100 firms with good reputation and financially established are more acceptable to institutional investors regardless their nationalities or races. However, *GENDER* with the average of 0.1742 and the median 0.1975 implies that most of the firms are still dominated by a unitary (male) director, in line with Malaysian statistics only 13.8% of top 100 firms has representative on board in 2016.

Table 1: Summary statistics.

	Mean	Median	Minimum	Maximum	Std. Dev.	*N*

SPI	1.3364	1.2249	-1.4134	5.3638	1.2821	1334
ETHNIC	0.4442	0.4490	0.0000	0.7188	0.1704	1330
GENDER	0.1742	0.1975	0.0000	0.4898	0.1569	1330
FSIZE	14.9317	14.9110	10.8736	18.1558	1.6981	1387
FAGE	2.6966	3.0445	0.0000	4.0254	1.0534	1502
LEVERAGE	0.2448	0.2412	0.0000	0.6294	0.1714	1387
ROA	0.0964	0.0706	-0.0817	0.6105	0.1036	1386
MTB	3.2048	1.5768	0.3242	36.0162	5.4002	1332
TURN	0.3333	0.2001	0.0128	2.6999	0.4232	1309
BSIZE	2.1566	2.1972	1.6094	2.7081	0.2461	1330
BINDEP	0.4307	0.4286	0.1818	0.7500	0.1232	1330
FINST	3.6192	0.1142	0.0000	72.6263	12.6767	1353
LINST	30.6922	24.3523	0.3364	79.9505	23.9834	1353
DUALITY[#]	0.0602	0.0000	0.0000	1.0000	0.2378	1330
CHAIR[#]	0.3271	0.0000	0.0000	1.0000	0.4693	1330
BIG4[#]	0.7541	1.0000	0.0000	1.0000	0.4308	1330
PCTEE[#]	0.1919	0.0000	0.0000	1.0000	0.3939	1980

Notes: This table presents the summary statistics for all the variables in the stock price informativeness-board diversity model. Stock price informativeness (*SPI*) refers the level of firm-specific information impounded into stock price, measured by scaled the idiosyncratic volatility components with total variations. *ETHNIC* is ethnic diversity, computed using Blau's index, $1-\sum p_i^2$, where p_i is the proportion of each ethnic of overall board members. *GENDER* denotes gender diversity, measured using Blau's index where p_i is the proportion of each gender of the total board members. The descriptions of control variables are explained in section 3.4. *N* indicates the number of year-firm observations.

5. EMPIRICAL RESULTS

First column of Table 2 reports pooled ordinary least square estimation results obtained by regressing stock price informativeness on ethnic and gender diversity. We also divide the sample into firm with- and without-foreign board of director(s) and the findings are shown in column two and three. In all models, we include all the possible control variables for firm characteristic and corporate governance attributes to avoid the potential of omitted variables biases and possibility of firm heterogeneity. The coefficient of ethnic diversity for the full sample (-0.4434) and firms without foreign director (-0.7392) is negative and significant while it is insignificant for firms with foreign directors. Our baseline regression supports the prediction in hypothesis 1b that ethnic diversity has significant and negative relationship with stock price informativeness. More precisely, we find that the coefficient for ethnic diversity is negative and significant at 5% level, suggesting that stock price is less informative with higher ethnically diverse boards. We can interpret the evidence that the conflicts during board meeting due to the different ethnic background tend to deteriorate the argument and cause an inefficiency of board monitoring, hence constrains the firm-specific information to be incorporated into stock prices. This finding is consistent for the firms without foreign director but does not hold for the firms with foreign directors. These results suggest that the presence of foreign director on board could help to mitigate the conflicts of ethnic diversity leading to an insignificant impact of ethnic diversity on price informativeness.

However, all the models show that there is no impact of *gender* diversity on price informativeness, *hypothesis 2* is rejected. Our result is contradicted with Gul et al. (2011)'s finding for U.S firms that gender diversity significantly increases the amount of information impounded into stock prices. This could be due to the relatively low

participation rate of female directors (13.8%) in Malaysian public listed firms[3] compare to 22% in U.S. firms held by at least one female director[4] and almost one third of world board have at least three female directors[5]. The low rate of female directors which does not show any significant power in corporate board decision-making, rendering to the insignificant role of female directors incorporates firm-specific information into stock price. Another possible factor contributes to this finding could be the current board structure in Malaysian listed firms that more than 80% of Malaysian companies are still dominated by a single gender (male), as the mean of gender diversity shows 0.1742 in Table 1.

Table 2: Board diversity and price informativeness.

	(1) Full sample	(2) Firms with foreign board of director(s)	(3) Firms without % foreign board of director
ETHNIC	-0.4434**	-0.0502	-0.7392*
	(0.2074)	(0.6460)	(0.3909)
GENDER	0.2381	0.1891	0.6259
	(0.2445)	(0.6092)	(0.4261)
FSIZE	-0.3164***	-0.3332***	-0.1750*
	(0.0304)	(0.0929)	(0.0929)
FAGE	-0.0129	0.0879	-0.0715
	(0.0342)	(0.0593)	(0.0449)
LEVERAGE	0.4952**	0.2351	0.8049
	(0.2103)	(0.4842)	(0.4911)
ROA	0.1825	-0.6448	1.4704
	(0.4645)	(0.8403)	(0.9886)
MTB	-0.0403***	-0.0124**	-0.1180**
	(0.0087)	(0.0056)	(0.0592)
TURN	-0.3978***	-0.1353**	-0.5030***
	(0.0822)	(0.0639)	(0.1506)
BSIZE	0.1767	0.8314**	-0.6605*
	(0.1636)	(0.3834)	(0.3372)
BINDEP	0.1646	1.0089	0.1773
	(0.2970)	(0.6570)	(0.3905)
FINST	0.0017	-0.0013	0.0403
	(0.0028)	(0.0033)	(0.0308)
LINST	-0.0034**	-0.0009	-0.0037
	(0.0017)	(0.0033)	(0.0032)
DUALITY	0.2080	0.6907	-0.1236
	(0.1345)	(0.4397)	(0.1434)
CHAIR	0.0376	0.0609	0.1212
	(0.0778)	(0.2004)	(0.1172)
BIG4	0.0942	0.0406	0.2443
	(0.0817)	(0.2518)	(0.1557)
PCTEE	-0.2046**	-0.2789*	-0.4205*

[3] Only 13.8% of top 100 companies recruit women as board directors in 2016. World Development Report 2017: *Gender* Equality and Development. Washington, DC: World Bank.
[4] These statistics is obtained from World Economic Forum, 2019.
[5] Based on Morgan Stanley Composite Index (MSCI) research, All Country World Index (ACWI) statistics.

	(0.0936)	(0.1624)	(0.2395)
CONSTANT	3.4122***	3.6951***	5.8221***
	(0.4953)	(1.1950)	(1.5710)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	1,256	480	776
Adj. R^2	0.3250	0.3407	0.3555

Notes: This table demonstrates the results for regression of stock price informativeness on ethnic and gender diversity using pooled ordinary least square (OLS) model. We divide the test into 3 sections: full sample, firms with foreign board of director(s) and firms without foreign board of director. *ETHNIC* is ethnic diversity, computed using Blau's index, $1-\sum p_i^2$, where p_i is the proportion of each ethnic of overall board members. *GENDER* denotes gender diversity, measured using Blau's index where p_i is the proportion of each gender of the total board members. The descriptions of control variables are explained in section 3.4. *N* denotes the number of firm-year observations.

In Table 3, we present two different of robustness tests: first, firm-fixed-effects model that controls for time-invariant firm characteristics and alleviate the problem of unobserved omitted variable bias. Second, the main concern with pooled OLS is the cross-sectional dependency that cause in biased standard errors and lead to incorrect inferences, thereby we employ Fama MacBeth model to check its robustness. These two robustness checks corroborate the significant and negative relationship between ethnic diversity and stock price informativeness for our full sample and subsample of boards without foreign director. As for gender diversity, both robustness regressions reveal that gender is not significant impact on stock price informativeness. These findings reaffirm our baseline estimations.

Table 3: Robustness check on endogeneity.

	Firm Fixed Effect	Fama-MacBeth
ETHNIC	-0.5173**	-0.6037**
	(0.2045)	(0.2169)
GENDER	0.1934	0.3199
	(0.2358)	(0.2595)
FSIZE	-0.3223***	-0.2921***
	(0.0309)	(0.0471)
FAGE	-0.0236	0.0213
	(0.0358)	(0.0397)
LEVERAGE	0.5552***	0.4403*
	(0.2117)	(0.2455)
ROA	-0.1554	0.5017
	(0.5212)	(0.5550)
MTB	-0.0337***	-0.0378*
	(0.0108)	(0.0212)
TURNOVER	-0.4042***	-0.5047***
	(0.0819)	(0.1505)
BSIZE	0.1581	0.0621
	(0.1636)	(0.2007)
BINDEP	0.0175	0.0555
	(0.3169)	(0.3659)
FINST	0.0030	0.0044
	(0.0029)	(0.0051)
LINST	-0.0032**	-0.0033*

	(0.0016)	(0.0016)
DUALITY	0.2119	0.0968
	(0.1439)	(0.1446)
CHAIR	0.0007	0.1382
	(0.0778)	(0.1087)
BIG4	0.0839	0.1801*
	(0.0834)	(0.0865)
PCTEE	-0.1304	-0.1260
	(0.0962)	(0.1133)
CONSTANT	5.4413***	5.5876***
	(0.6435)	(0.8443)
Year	Yes	No
Industry	No	Yes
N	1,256	1,256
Adj. R^2	0.3608	0.5882

Notes: This table presents the results for regression of stock price informativeness on ethnic and gender diversity using firm fixed effect model and Fama MacBeth model. *ETHNIC* is ethnic diversity, computed using Blau's index, $1-\sum p_i^2$, where p_i is the proportion of each ethnic of overall board members. *GENDER* denotes gender diversity, measured using Blau's index where p_i is the proportion of each gender of the total board members. The descriptions of control variables are explained in section 3.4. Standard errors are reported in parentheses. *N* denotes the number of firm-year observations.

6. CONCLUSION

This study provides insight on the relationship between two board diversities, ethnicity and gender diversity, in projecting stock price informativeness for the top 100 Malaysian public listed firms. We find a negative association between ethnic diversity and stock price informativeness after considering endogeneity, controlling for other variables such as corporate governance attributes and firm-level characteristics. Conversely, our findings show that gender diversity has no significant impact on price informativeness. Thus, our findings project differently from Gul et al. (2011) who found that gender diversity significantly increases the amount of information impounded into stock prices. The premise is that gender in sample of top 100 public listed firms used in this study still be dominated by male directors as compares to relatively low participation rate of female directors.

Our analysis suggests that board ethnic diversity reduces the amount of firm-specific information incorporated into the stock price. The evidence of this result can be explained in twofold: first, the ethnically broad members' diversity in practicing different working culture and commanding different major-language or common non-major language[6] are found to intensify the agency conflicts during board meeting and weaken the effectiveness of monitoring. Second, ethnic diversity tends to create more internal conflicts, deteriorate the argument in specific issues, taking relatively long compromise a decision. Therefore, the inefficiency of board monitoring constrains the firm-specific information to be incorporated into stock price. We further tested for the robustness of board diversity-price informativeness relationship by using firm-fixed effect and Fama MacBeth models, and our findings demonstrate the same results. These twofold findings however, contribute to the missing previous empirical studies on ethnicity characteristics as a significant variable

[6] There are two strands of literature on the language similarity: Fu et al. (2020) opine that speaking a similar dialect creates intimacy and grounds of commonality which enhance their mutual trust and improve the loyalty of board members to the firms, however, Bian et al. (2019) show that speaking common language can weaken the board monitoring and trigger more severe agency problems due to the close relations between CEO and chairman.

in justifying influential factors on price informativeness. For an instant, studies by Gul et al., 2011; Huang and Ni, 2017; Ullah et al., 2020 and Fu et al., 2020, in results-wise didn't examine the impact of ethnic diversity on price informativeness, which expected to have directly influenced the effectiveness of board monitoring.

We also divide the sample into firms with foreign directors and without the foreign directors and we find that the influence of ethnic diversity on price informativeness is consistent with a baseline for the latter firms but does not hold for former firms. This implies that the existence of foreign board directors mitigates the agency conflicts and thus undermines the influence of board ethnic diversity on price informativeness. This study further affirms the importance of internationalization composition in corporate governance culture that is consistent with the objective of the Malaysia Code on Corporate Governance 2017. In conclusion, greater internationalization of corporate governance ensured the higher efficiency in the stock price as well as wealth investment.

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