




# “Board ethnic diversity and goodwill impairment decisions: longitudinal analysis of energy firms in Malaysia”

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# BOARD ETHNIC DIVERSITY AND GOODWILL IMPAIRMENT DECISIONS: LONGITUDINAL ANALYSIS OF ENERGY FIRMS IN MALAYSIA

## Abstract

The present study investigates whether ethnic diversity among firms' directors influences the decision to take goodwill write-offs, after considering the economic factors of impairment (measured in terms of the market capitalization indicator), reporting incentives, and firms' internal governance. The analysis focuses on energy firms in Malaysia from 2006 to 2018. The regressions results based on binary logistics show that energy firms are less likely to take goodwill write-offs even when the market indicates the possibility for the write-offs. The results also show the absence of the direct relationship between goodwill impairment decisions and ethnic diversity of the board of directors. Nevertheless, the results reveal that board ethnicity moderates the relationship between firms' goodwill impairment decisions and the market capitalization indicator, suggesting that as firms encounter increasing market indicator of impairment losses, the board with diverse ethnicity positively influences firms in taking goodwill write-offs. The results of the present study add to the literature on board diversity and firms' decisions with regard to goodwill impairment by highlighting the beneficial roles of having ethnically diverse board of directors, in that they use the market indicator that goodwill may be impaired in their monitoring role on the goodwill impairment decisions. The results offer input to the policymakers by suggesting that to strengthen the monitoring roles of the board of directors, they need to be diverse and equipped with indicators that would assist them in their monitoring decisions.

## Keywords

board ethnic diversity, goodwill impairment, IFRS, market capitalization indicator

## JEL Classification

G32, M41

## INTRODUCTION

The recognition that board diversity is essential and beneficial has generated several initiatives, guidelines, and legislation by government, business leaders, and other professionals (Kochan, Bezrukova, & Ely, 2003; Low, Roberts, & Whiting, 2015). For example, to assist companies in leveraging cultural diversity for competitive advantage, in the United States of America (US), a group of industry chief executives and human resource professionals have set up a non-profit organization that is known as Business Opportunities for Leadership Diversity (BOLD) Initiative (Kochan et al., 2003). Besides, to encourage female directors' involvement in the board, governments of Norway, Spain, Italy, and Malaysia have passed legislation imposing a quota on female directors (Carter, D'Souza, Simkins, & Simpson, 2010; Low et al., 2015).

Despite the increasing interest in diversity at organizations, past researchers show a low level of diversity at workplace, both at an inter-

national level and in Malaysia (DeGroot, Mohapatra, & Lippman, 2013; PricewaterhouseCoopers, 2013). For example, DeGroot et al. (2013) examine diversity at workplace of Standard & Poor's 100 Index (S&P 100) of US companies in 2012. They reported that 56% of these companies do not have minorities in their highest paid executives (DeGroot et al., 2013).

In Malaysia, even though the country comprises multiracial population, a survey of 122 Malaysian listed firms by PricewaterhouseCoopers in 2012 reported that less than 35% of the top management is Bumiputera (indigenous people). Moreover, 54% of the respondents are unwilling to disclose the ethnic composition of their workforce in the annual reports (PricewaterhouseCoopers, 2013). Abdullah, Ku Ismail, and Nachum (2015), in their analysis of gender diversity of 841 Malaysian listed firms in 2008, found that although Malaysia comprises diverse ethnic groups, the diversity is not mirrored in the boards of the sample firms they examined.

Given the increasing interest for diversity at workplace, both at the international level and inside Malaysia, the present study aims to investigate whether board ethnic diversity influences the Malaysian energy firms' decision to take goodwill write-offs. To date, studies on goodwill impairment decisions revolved around the concerned on the untimely recognition of impairment charges of goodwill, which resulted in the temporary overstatement of goodwill (see a review of past studies in Abdul-Majid, 2019). Thus, the present study aims to analyze whether the diverse ethnic groups in the board of directors manage to address the untimely recognition of goodwill write-offs.

The analysis focuses on all energy firms with goodwill balances and/or goodwill impairment losses in Malaysia from 2006 to 2018 and by performing a binary logistic regression. This study selected energy firms because, in Malaysia, the energy sector plays a crucial role in the economic growth of the country (Hannan, Begum, Abdolrasol, Hossain Lipu, & Mohamed, 2018). For example, in the Ninth Malaysian Plan, the government allocated RM 1.8 billion for the energy sector (Mekhilef, Safari, Mustafa, Saidur, & Omar, 2012).

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## 1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The effect of ethnic diversity of the board of directors on goodwill impairment decisions is tested using two approaches. First, the present study tests the direct relationship between board ethnic diversity (i.e., *ETHNIC\_BOD*) and goodwill impairment decisions. Second, the present study tests whether the ethnically diverse board uses the market indicator that goodwill may be impaired in their monitoring of firms' goodwill impairment decisions. This is accomplished by constructing an interaction term (i.e., *ETHNIC\_BOD-BTM*) between board ethnic diversity and book-to-market ratio.

The present study also tests for the influence of the economic factors of impairment and firms' reporting incentives on goodwill write-offs decisions.

### 1.1. Board ethnic diversity

Prior studies on board diversity tend to focus on gender diversity of the board of directors (Carter, Simkins, & Simpson, 2010). Studies on board ethnic diversity are limited and provide mixed results. As an illustration, Carter et al. (2003) report a positive relationship between board ethnic diversity and firms' financial performance (Tobin's Q), while Carter et al. (2010) and Garcia-Meca, Garcia-Sanchez, and Martinez-Ferrero (2015) found such relationship not to be statistically significant. To the researcher's knowledge, no study has examined the influence of board ethnic diversity on goodwill impairment decisions. With the lack of prior studies, the following non-directional hypothesis is formulated:

*H1: Board ethnic diversity (ETHNIC\_BOD) is significantly associated with the likelihood for firms to take goodwill write-offs.*

To test whether the ethnically diverse boards use the market indicator that goodwill may be impaired in their monitoring decision concerning goodwill impairment losses, the present study construct an interaction term (i.e., *ETHNIC\_BOD·BTM*) between board ethnic diversity and book-to-market ratio. The present study expects that as firms encounter increasing market indicator that their goodwill may be impaired (through high book-to-market ratio), the ethnically diverse board positively influences firms' decisions to take goodwill write-offs. Thus, the following hypothesis is formulated:

*H2: The association between board ethnic diversity and the likelihood for firms to take goodwill write-offs is stronger with the increment in the market capitalization indicators.*

### 1.2. Economic factors of impairment: the market capitalization indicator

Market capitalization indicator refers to a condition when a market value of a firm falls below its book value (hereafter known as the market capitalization indicator). This proxy is derived from an indication of impairment of assets, as stated in MFRS 136 Impairment of Assets. The market capitalization indicator is examined in the present study as a potential determinant of firms' decisions to take goodwill write-offs. This is because if the firm's market value falls below the book value, it suggests that investors perceive the firm to be overvalued (Ernst & Young, 2008). If this market capitalization indicator persists for several years, then it represents a potential factor that may lead to risk of impairment losses (PricewaterhouseCoopers, 2009).

Accordingly, the present study formulates the following hypothesis:

*H3: The market capitalization indicator (measured as BTM) positively influences the likelihood for firms to take goodwill write-offs.*

### 1.3. Reporting incentive: debt hypothesis

Prior studies analyzing the motives of firms for reporting impairment charges of goodwill postulate

that firms are unwilling to take goodwill write-offs or tend to avoid the write-offs when they are approaching debt covenant violations (Beatty & Weber, 2006; Ramanna & Watts, 2012). By taking goodwill write-offs, their current year earnings will be affected, which in turn impact the debt covenants that rely on the reported earnings.

In this paper, following the past studies (e.g., Ramanna & Watts, 2012; Abdul-Majid, 2015), leverage (*DEBTRATIO*), which is total debts deflated by prior year total assets, is applied as a measure of firms' that are most likely to violate their debt covenants violation. In line with debt hypothesis, the relationship between leverage and goodwill impairment decisions is formulated as follows:

*H4: Leverage (DEBTRATIO) negatively influences the likelihood for firms to take goodwill write-offs.*

## 2. METHODS

### 2.1. Regression model

To test *H1* to *H4*, this study performs the binary logistic regression based on the following equation:

$$\begin{aligned}
 GWIL = & \alpha + \beta_1 ETHNIC\_BOD + \\
 & + \beta_2 BTM + \beta_3 ETHNIC\_BOD \cdot BTM + \\
 & + 6\beta_4 DEBTRATIO + \beta_5 BOD\_INDP + \\
 & + \beta_6 BOD\_SIZE + \beta_7 BOD\_AGE + \\
 & + \beta_8 BOD\_GENDER + \beta_9 \Delta OCF + \\
 & + \beta_{10} GWB + \beta_{11} SIZE + \beta_{12} GFC + \varepsilon.
 \end{aligned}
 \tag{1}$$

The present study controls for 1) internal corporate governance (i.e., the ratio of independent directors on the board, *BOD\_INDP*; size of the board of directors, *BOD\_SIZE*; average age of the directors, *BOD\_AGE*; gender of the directors, *BOD\_GENDER*), 2) other economic factors influencing goodwill write-offs (i.e., change in cash flows from operating activities, *OCF*; the magnitude of goodwill balance (*GWB*), 3) firms' specific factor (firm size, *SIZE*), and 4) the impact of the global financial crisis (*GFC*). Table 1 presents the variable definitions for the present study.

**Table 1.** Variable definitions

GWIL	Set to one when the sample firms recognize goodwill impairment losses, zero when they recognize zero goodwill impairment.
<b>Test variables</b>	
ETHNIC_BOD	Board ethnic diversity, which is measured using Blau's (1977) index based on four groups, i.e., Malay, Chinese, Indian, and foreigner.
BTM	The ratio of the book value of equity to its market value reported at the year-end.
ETHNIC_BOD*BTM	An interaction term between ETHNIC_BOD and BTM.
DEBTRATIO	Measured as prior year total debts deflated by total assets.
<b>Corporate governance mechanism</b>	
BOD_INDP	The ratio of non-executive directors who are independent in the board.
BOD_SIZE	Total number of directors.
BOD_AGE	Average age of directors in the board.
BOD_GENDER	The ratio of female directors in the board of directors.
<b>Other impairment factors</b>	
ΔOCF	Change in operating cash flows from current year to the prior year deflated by total assets of the prior year.
GWB	Goodwill balance at the beginning of the year deflated by prior year total assets.
<b>Firms' specific factor</b>	
SIZE	Firm's size, computed as natural logarithm of prior year total assets.
<b>Global financial crisis</b>	
GFC	Set to one when the financial year ended within the financial crises (i.e., 2008, 2009, or 2010), and zero otherwise.

## 2.2. Sample selection

This study selected all the energy firms with goodwill balance and/or goodwill impairment losses listed on the Bursa Malaysia from 2006 to 2018. Overall, 192 firm-year observations from 2006 to 2018 fulfilled all the selection criteria.

## 3. RESULTS

### 3.1. Summary statistics

Table 2 shows the summary statistics for the analysis of whether board ethnic diversity influences firms' financial performance. The results show

that on average the sample firms reported a book-to-market ratio of 1.083 (a median of 0.865), suggesting there is a gap between the amount of equity reported by the sample firms and the value perceived by the market. The table also shows that the sample firms have diverse ethnicity in the board (*ETHNIC\_BOD*) with an average of 43.0% (and a median of 47.0%). In addition, the table shows the magnitude of goodwill balance (*GWB*) is skewed with a mean of 0.428 and a median of 0.094 (skewness of 3.117, result unreported). The transformation of the variable using natural logarithm reduces the skewness to 0.617 (results unreported).

Mann-Whitney U-test and t-test were performed to investigate whether the sample firms that rec-

**Table 2.** Summary statistics and univariate tests

Variable	All observations			Test of differences (zero vs. write-off)	
	Mean	Median	SD	Mean <i>p</i> -value	Median <i>p</i> -value
ETHNIC_BOD	0.430	0.470	0.179	0.812	0.752
BTM	1.083	0.865	1.552	0.200	0.560
DEBTRATIO	0.306	0.313	0.194	0.158	0.179
BOD_INDP	0.485	0.500	0.129	0.617	0.432
BOD_SIZE	7.591	7.000	1.504	0.066	0.111
BOD_AGE	55.865	55.750	4.494	0.704	0.973
BOD_GENDER	0.095	0.100	0.108	0.688	0.487
ΔOCF	0.005	0.007	0.107	0.237	0.153
GWB	0.428	0.094	0.660	0.100	0.072
SIZE	13.859	13.841	1.196	0.641	0.742

Note: Refer to Table 1 for variable definitions.

ognized goodwill write-offs differ from those firms that recognized zero write-offs. The results reveal that firms that reported goodwill impairment losses have significantly larger number of directors (*BOD\_SIZE*) and higher proportion of goodwill relative to the total assets (*GWB*), both at a *p*-value less than 10%.

The present study assesses the issue of multicollinearity by performing the Pearson correlation coefficients (see Table 3) and the variance inflation factor (*VIF*). Table 3 reports that the highest correlation between independent variables was between firms' size (*SIZE*) and gender of the board of directors (*BOD\_GENDER*) at 0.43 (*p*-value less than 1%). Additionally, none of the *VIFs* exceed 10, as the highest *VIF* is for *SIZE* at 1.749 (results unreported). These results suggest the lack of multicollinearity issue in this study.

### 3.2. Binary logistic regression analysis

Table 4 shows the regression results for the investigation of the influence of board ethnic diversity on goodwill impairment decisions by energy firms in Malaysia from 2006 to 2018, after controlling for economic factors of impairment, reporting incentives, and internal corporate governance. The present study tests whether board ethnic diversity (*ETHNIC\_BOD*) influence the firms' performance using two approaches. In *H1*, the present study tests the direct relationship between ethnic diversity of the board of directors (*ETHNIC\_BOD*) and goodwill impairment decisions. The findings reveal no significant relationship between board

ethnic diversity and firms' decisions to take goodwill write-offs.

In *H2*, this study tests whether the ethnically diverse board moderates the relationship between the market capitalization indicator (*BTM*) and the likelihood for firms to take goodwill write-offs. This is done by constructing an interaction term between board ethnic diversity and the market capitalization indicator (*ETHNIC\_BOD·BTM*). Similar to the expectation formulated earlier, *ETHNIC\_BOD·BTM* reports positive coefficients, which is statistically significant (*p* < 5%), thus supporting *H2*. The results show that board ethnic diversity moderates the relationship between the market capitalization indicator and goodwill impairment decisions.

### 3.3. Binary logistic regression analysis

In *H3*, the present study expects the market capitalization indicator (*BTM*) to positively influence the likelihood for firms to take goodwill write-offs. Contrary to the expectation set, *BTM* reports negative coefficient (at a *p* < 10%), thus rejecting *H3*. The results suggest that with the increasing market indicator of goodwill impairment (*BTM*), the tendency for firms to take goodwill write-offs declines.

In *H4*, the present study posits a negative relationship between *DEBTRATIO* and the likelihood for firms to take goodwill write-offs. The results in Table 4 reports the coefficient on *DEBTRATIO* as positive and not statistically significant. Thus, the empirical findings of the present could not support the debt hypothesis.

**Table 3.** Pearson correlation coefficients

Variable	1	2	3	4	5	6	7	8	9	10	11	12
<i>GWIL</i>	1.00											
<i>BTM</i>	-0.09	1.00										
<i>ETHNIC_BOD</i>	0.02	0.09	1.00									
<i>DEBTRATIO</i>	0.10	-0.15*	-0.10	1.00								
<i>BOD_INDP</i>	0.04	0.04	0.03	-0.04	1.00							
<i>BOD_SIZE</i>	-0.13	0.05	0.03	0.13	-0.01	1.00						
<i>BOD_AGE</i>	-0.02	0.09	-0.03	-0.06	-0.17*	0.05	1.00					
<i>BOD_GENDER</i>	-0.03	0.03	0.00	-0.01	-0.05	0.28**	0.27**	1.00				
<i>ΔOCF</i>	0.08	-0.05	-0.07	0.06	-0.04	0.02	-0.04	0.04	1.00			
<i>GWB</i>	0.12	0.20**	0.18*	0.14	0.05	0.05	-0.21**	-0.03	-0.03	1.00		
<i>SIZE</i>	0.03	0.14	0.01	0.23**	-0.01	0.41**	0.39**	0.43**	-0.03	0.07	1.00	
<i>GFC</i>	0.04	-0.03	-0.06	-0.03	-0.02	-0.12	-0.14*	-0.11	0.02	0.07	-0.16*	1.00

Note: \*, \*\* significance at a *p*-value of less than 5% level (2-tailed) and 1% level (2-tailed), respectively. Refer to Table 1 for variable definitions.

**Table 4.** Logistic regression results for energy firms' decisions in taking goodwill impairment losses

Variable	Model 1	
	Beta	Wald
Intercept	-6.518	2.306
<i>ETHNIC_BOD</i>	-1.094	0.540
<i>BTM</i>	-0.437	3.668*
<i>ETHNIC_BOD-BTM</i>	0.846	6.177**
<i>DEBTRATIO</i>	1.782	2.242
<i>BOD_INDP</i>	2.271	1.409
<i>BOD_SIZE</i>	-0.269	2.399
<i>BOD_AGE</i>	0.067	0.933
<i>BOD_GENDER</i>	0.201	0.006
$\Delta$ OCF	2.171	1.133
<i>GWB</i>	0.176	2.955*
<i>SIZE</i>	0.148	0.355
<i>GFC</i>	0.298	0.366
Hosmer-Lemeshow	-	0.408
Chi-square	-	24.437**
-2 Log likelihood	-	135.082
Cox & Snell R square	-	12.0%
Nagelkerke R square	-	21.2%

Note: \*, \*\*, \*\*\* significance at a  $p$ -value < 10%, 5% and 1%, respectively (at 2-tailed tests). Refer to Table 1 for variable definitions.

Regarding control variables, the results show a statistically significant relationship between *GWB* and the likelihood for firms to take goodwill impairment losses, suggesting that firms with large magnitude of goodwill balance are more likely to take goodwill impairment losses. The table also shows that the relationship between firms' decisions to take goodwill write-offs and the remaining control variables is not statistically significant.

## 4. DISCUSSION

Malaysia is a country with multiracial population. One tool in promoting the inclusive society in the country is by valuing diverse workforce. Thus, during the Business Leaders Dialogue in 2015, the Prime Minister emphasized that the ethnic diversity being present in Malaysia should be reflected in organizations (TalentCorp, 2015). In line with this aspiration, this paper examines the influence of ethnic diversity of the board of directors on goodwill impairment decisions by energy firms in Malaysia from 2006 to 2018, after controlling for the market capitalization indicator, firms' reporting incentives, and other governance mechanisms. Thus far, past studies on goodwill impairment decisions (e.g., see Abdul-Majid, 2019) highlight the concern on the late recognition of goodwill write-offs that lead to inflated goodwill balance temporarily. Hence, the present study aims to

investigate whether the diverse ethnic groups among the directors manage to address the untimely recognition of goodwill write-offs.

Based on total 192 observations from 2006 to 2018, the regression results show that energy firms are less likely to take goodwill impairment losses even when the market perceived their goodwill to be impaired, suggesting the untimely recognition of goodwill write-offs. These results are similar to those reported by past studies (e.g., see a review of past studies in Abdul-Majid, 2019) that goodwill impairment charges reported by firms lagged their share performance.

With regard to the direct relationship between ethnic diversity in the board and goodwill impairment decisions, the regression results could not find any significant relationship between the two variables, suggesting that board ethnic diversity has no direct effect on firms' decision to take goodwill impairment losses. To date, no studies have investigated the influence of board ethnic diversity on firms' goodwill impairment decisions. Hence, the present study cannot compare the results with past studies.

In addition to testing the direct relationship, the present study also tests the indirect relationship between board ethnic diversity and goodwill impairment decisions, using an interaction term (i.e., *ETHNIC\_BOD-BTM*) between board ethnic diversi-

ty and the market capitalization indicator (measured using book-to-market ratio, *BTM*). The binary logistic regression results reveal that board ethnic diversity moderates the relationship between the market capitalization indicator and goodwill impairment decisions, suggesting that as firms encounter increasing market indicator that their goodwill may be impaired (through high book-to-market ratios), the ethnically diverse board of directors positively influence firms to take goodwill write-offs. The results indicate the business case for board ethnic diversity in addressing untimely recognition of goodwill

write-offs. Similar to Richard et al. (2007), the empirical findings of this study support the positive influence of having ethnically diverse board. In the case of Richard et al. (2007), racial diversity among the directors improve firms' performance, while in the present study, the ethnically diverse board improve firms' goodwill impairment decisions.

As for the control variables, similar to Lapointe-Antunes et al. (2008), the results show that the likelihood of the sample firms to take goodwill write-offs increases with the magnitude of goodwill balance.

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## CONCLUSION

In conclusion, the present study has investigated whether board ethnic diversity influences firms' decisions in taking goodwill write-offs, focusing on energy firms in Malaysia over a thirteen-year period from 2006 to 2018. The results showed no direct relationship between board ethnic diversity and goodwill impairment decisions. Instead, the results exhibited a moderating effect of the board ethnic diversity on firms' decisions to take their goodwill write-offs. Specifically, the ethnically diverse board positively influences firms in taking goodwill write-offs when there are market indicators for the possibility of the write-offs.

The empirical evidence documented in the present study adds to the literature on board diversity and firms' decisions to take goodwill write-offs by highlighting the beneficial roles of having diverse ethnicity in the board in resolving the untimely recognition of goodwill write-offs. Specifically, the board with diverse ethnicity uses the market indicator that goodwill may be impaired in their monitoring role on firms' goodwill impairment decisions. Hence, the diverse ethnic groups among the directors manage to address the untimely recognition of goodwill write-offs.

This study offers input to the policymakers, in that to improve the monitoring roles of the board of directors, they need to be ethnically diverse and equip with tools or indicators to assist them in their monitoring roles. The present study can be extended to other countries with multiracial population, such as North Africa and Central Asia. Hopefully, it will improve the understanding on the influence of ethnically diverse board on firms' decisions and performance.

## AUTHOR CONTRIBUTIONS

Conceptualization: Jamaliah Abdul-Majid.

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Formal analysis: Jamaliah Abdul-Majid.

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