Influence of Malaysian accounting standards and corporation gouvernance on intellectual capital performance and firm's value

تأثير المعايير المحاسبية الماليزية وحوكمة الشركات على أداء رأس المال الفكري والقيمة في المؤسسة

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Abstract: The study investigates the moderating effect of corporate governance and the adoption of the new accounting standards on the relationship between firms' value and intellectual capital performance. The study's sample contains 228 firms for the years 2011, 2012 and 2013. The findings show that the association between ICP and firms' market capitalization was insignificant while this association was significant when it is moderatedwith corporate governance.

keyword: intellectual capital; firm value; international accounting standards;
JEL classification code : XN1, XN2

ملخص: تتناول هذه الدراسة تأثير حوكمة الشركات الماليزية واعتماد معايير محاسبية جديدة على العلاقة بين قيمة الشركات وأداء رأس المال الفكري فيها. حيث مست الدراسة 228 شركة مدرجة للسنوات 2011 الى 2013 وباستخدام مؤشر تم إنشاؤه ذاتيًا لتقييم حوكمتها. أما فيما يخص تقييم رأس المال الفكري فقد تم استخدام القيمة المضافة لطريقة معامل رأس المال الفكري. أظهرت النتائج أن ضآلة الارتباط بين برنامج المقارنات الدولية ورسملة السوق. بينما برزت أهميتها عندما تم الإشراف عليها بحوكمة الشركات. أما اعتماد المعايير المحاسبية الجديدة كان له تأثير ضئيل على الارتباط بين قيمة الشركات وبرنامج المقارنات الدولية.

الكلمات المفتاحية: الرأسمال الفكري؛ القيمة السوقية للمؤسسة؛ المعايير المحاسبية الدولية
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1. Background

In the era of globalization and knowledge based economy, where competition is the corner stone of any market, the importance of intangible assets has grown to become an essential factor of generating

additional value and gaining competitive advantage. This, consistent with Lev and Daum (2004) who state that the percentage of intangible assets in organizations' value has rapidly increased from 38 percent in 1982 to 62 percent in 1992. Kaplan and Norton (2004) stated that firms' value from mid-1990 to 1998 may be represented by more than 75% of intangible assets. This growth creates attention on the issue of intangible assets.

The intention to narrow the gap between firms market and book value has attracted more research on IC's hidden value since firms in new economy atmosphere tend to depend more on intangible assets than tangible assets (Salamudin, Bakar, Ibrahim and Hassan, 2010; Maditinos, Chatzoudes, Tsairidis and Theriou, 2011). Specifically, IC improves firms' competency towards its vitals, strategic asset, provides better competitive position in the global market and creates firm value as well as give a clearer view of a firms' real value hence improves company financial performance (Mavridis and Kyrmizoglou, 2005; El-Bannany, 2012).

In this respect, IC can be considered from a measurement viewpoint as Rehman, Rehman, Usman and Asghar (2012) stated that IC is an asset which draws a gap between firms' market and book value. Thus, the difference between market and book value can be defined as the value of intellectual capital in the firm (Liu, Tseng and Yen, 2009).

Similar developments are seen in Malaysia, in line with globalization, global market changes and knowledge based economy. Malaysia is targeting to become a developed nation by 2020. Thus, specific initiatives have been taken in order to meet this target. The Malaysian government has initiated code of corporate governance, which is the Malaysian code of corporate governance (MCCG) in 2000. This code has been revised on 2007 and amended on 2012 (Securities Commission, 2007; MCCG, 2012) . This code requires more transparency and disclosure in companies as a whole but particularly in relation to corporate governance. Moreover, on 1 August 2008, Malaysian Accounting standard Board (MASB) declared its plan of full

convergence to International Financial Reporting Standards (IFRS) by 1 January 2012[1]. This shift was from Financial Reporting Standards (FRS) to Malaysian Financial Reporting Standards (MFRS). The MFRS is equivalent to IFRS in order to enable Malaysian firms to enhance their competitive level to be at par with their international counterparts. These changes in the standards should have an effect on disclosure and figures in the financial statements, including those related to IC.

Although there are many studies on IC, they are lacking in taking in consideration the introduction of IFRS and the MCCG impact on IC practices, also, literature is lacking ininvestigating the moderating effect of CG on IC association with firms' value, which would be more comprehensive review of ICP. Hence, the main motivation to conduct this study is the lack of studies that investigate the relationship between ICP and frim market capitalization (MCAP) and ICP association with MCAP when it is moderated by CG taking in consideration MFRS adoption and MCCG amendments attributes in a longitudinal setting in Malaysia. Therefore, it is worthwhile to investigate the association betweenICP and firm's value and further the study examined this association when it is moderated by CG, under the Malaysian accounting standards settings and code of corporate governance.

The rest of the paper is structured as follows: Section two reviews ICP literatures. Section three develops study's hypotheses. Section four presents study's research method. Section five discusses the main results, and section six concludes with the main findings, the limitations and implications of the results, as well as suggestions for further research in this area.

2. Literature on IC performance

Generally, studies regarding the issue of IC influence on firms' value and performance have been conducted in different countries such

1- Malaysian Accounting Standard Board (MASB), http://www.masb.org.my/index.php?option=com_content&view=article&id=1431

as Australia (Joshi, Cahill and Sidhu, 2010), Turkey (Yalama and Coskun 2007), Malaysia (Bontis, Keow and Richardson, 2000; Ting and Lean, 2009; Kweh, Chan and Ting, 2013), South Africa (Firer and Williams, 2003), India (Mondal and Ghosh 2012; Vishnu and Gupta, 2014) and Spain (Díez, Ochoa, Prieto and Santidrián, 2010), Serbia (Komnenic and Pokrajcic, 2012), Iran (Mehralian, Rajabzadeh, Sadeh and Rasekh, 2012) and Luxembourg and Belgium (Mention and Bontis, 2013).

In addition, previous studies have investigated ICP issues in different industry types especially knowledge incentive sectors; for example, Mehralian et al. (2012) study is conducted in the pharmaceutical industry, Kweh, et al.'s (2013) study conducted in the software sector. Even though, prior studies conducted on different types of knowledge incentives companies there are considerable studies that gave special attention to ICP in financial institutions arguing that banking industry is knowledge based sector which leads to increase in the importance of IC in this sector (e.g. Firer and Williams, 2003; Yalama and Coskun, 2007; Kamath, 2008; Mondal and Ghosh, 2012). Moreover, El-Bannany (2008) mentioned that in a knowledgeable base economy like UK; intellectual capital is more important than physical capital especially to banking sector in terms of wealth creation since this type of institution is largely dependent on knowledge. Mavridis (2004) views that banks are generally best model for intellectual capital research arena because the nature of bank's business is more intellectually focused and banks employees are more intellectual than other sectors. Kamath, (2007) point out, as banks are part of service sector, they employ an enormous amount of human capital and customer capital for its continued existence in the market. Similarly, Shih, Chang and Lin (2010) said that service sector industries have dissimilar features compared to other industries since this later is more knowledge base in its provided services or products. Thus, it is essential for banking institutions to utilize practices in knowledge

management to build up intellectual capital in order to survive with progressively more unstable atmosphere.

More likely, prior studies on ICP conducted on different countries, they have been as well conducted on different ICP issues such as, Ahmadi, Jalilian, Salamzadeh, Saeidpour, and Daraei (2012) studied the influence of different IC component on the performance of developing new products, Chien and Chao (2011) investigate the impact of IC on sales performance of new products, Mention (2012) discussed the relationship between IC and innovation using systematic literature review, Hsu and Wang (2012)examined the effect of IC and knowledge management on each other and how the association between IC and knowledge management influence on firm performance. Even though, prior studies have empirically examined different ICP issues, this study focuses only on literatures regarding ICP determinants and ICP association with firm value and performance.

In this respect, empirically quantitative studies that investigated IC influence on firms' performance measured ICP using the value added intellectual coefficient (VAIC) created by "Pulic", depending on firms' annual reports as source of data. However, Murthy and Mouritsen (2011) used mixed method to investigate ICP extent; they conducted interviews with senior executives and obtained data from annual reports, stakeholder impact reports, internal strategy reports. Furthermore, in examining IC influence on firms' performance and value creation, prior researchers have relied on different performance indicators in the firm to reach their objectives. For example, Ting and Lean (2009) used return on assets, Mondal and Ghosh (2012) used return on assets and equity, Joshi, Cahill and Sidhu (2010) used bank size, total number of employees and total shareholders' equity and Díez et al., (2010) used sales ratio. Gan and Saleh (2008) and Maditinos, Chatzoudes, Tsairidis and Theriou (2011) used market performance indicators.

In order to be in accordance with the study objectives, this section will be divided into three groups: those that used VAIC methodology,

studies that tested the interaction effect of IC components, other variables mediating and moderating impact on firm performance and those studies that examine IC performance using primary data. For the first group studies will be separated as follow; studies that examined ICP level and ICP association with firms'' performance and studies that examine IC performance determinants.

Starting with the first studies group; those that adopted VAIC approach as measurement of IC measurement. Firstly, with respect to ICP extent and association with firms' performance studies, Mavridis (2004) used data from 141 Japanese banks. His study applied VAIC method in order to analyse IC value added and performance practice in Japanese banking sector. His results indicate that there is a significant association between banks' performance and IC, with differences of ICP level among Japanese banking groups. Also both IC components human capital and physical capital value added have different impacts on various banking groups.

In the same sector, Kamath (2007) utilized the VAIC in order to determine the value-based performance of 98 Indian banks. His findings show that there is a huge variance in intellectual capital and value creation performance of the Indian banks; where foreign banks were on the top of value creation performance efficiency while local banks suffer from shortage in human capital which reflected in luck of value creation. In the same country and sector, Mondal and Ghosh (2012) VAIC methodology to measure banks ICP. They found that IC is significant determinant of banks performance represented by profitability and productivity. In addition, Mondal and Ghosh (2012) found that human capital efficiency plays a very important role in improving banks' return.

Similarly, Yalama and Coskun (2007) examined the effect of IC on Turkish banks performance and profitability. They obtained data from 18 banks listed on Istanbul Stock Exchange Market for the period from 1995 to 2004. Their findings show that banks efficiency in transforming IC to profitability is different among the banks and from

year to another. They found also that only two banks are stable in using IC efficiency value within five out of ten years included in the analysis.

Continuing with Turkey, Aras, Aybars and Kutlu (2011) examined the interaction between VAIC and corporate social disclosure responsibility (CSR). Their study sample were composed of 39 manufacturing Turkish firms covering two years from 2007 to 2008 and listed in Istanbul stock of exchange. Their findings point out that there is a negative association between VAIC and CSR.

In insurance firms, Alipour (2012) examined IC association with frim performance. He analysed 39 firms by using VAIC approach. His findings reveal that all components of IChave positive relationship with firm profitability.

In a developed country, Clarke, Seng and Whiting (2011) examined the effect of IC on Australian firm performance. Clarke et al. (2011) uses the Pulic's framework; value added intellectual coefficient (VAIC). Their findings point out that there is a significant relationship between VAIC and Australian firms, particularly capital employed efficiency with lower impact of human capital efficiency.

With respect to Malaysian context, most of the studies that utilized VAIC approach in order to measure IC performance and its relationship with firm performance; have been conducted on financial institutions (Goh, 2005; Muhammad and Abbasi, 2009; Ting and Lean, 2009). Goh (2005) examined the influence of IC on 17 commercial banks performance for the period from 2001 to 2003. Goh (2005) results indicate that both domestic and foreign banks in Malaysia depend largely on human capital attribute in its value creation. Moreover, foreign banks were more efficient than domestic banks which still rely more on physical capital for value creation. Nevertheless, domestic banks created more IC value added than foreign bank.

Likewise, Muhammad and Ismail (2009) analysed ICP in 18 Malaysian companies under financial sector; comprised of banking institution, insurance and security brokerage companies for the year 2007. Consistent with prior study's findings, their empirical results reveal that

IC is significantly associated with companies' performance measured by profitability and return on assets. Their findings also showed that banking sector reveal the highest level of IC efficiency, more specifically higher human capital element efficiency compared to insurance and securities companies and other IC elements (structural and customer capital). These results were inconsistent Firer and Williams (2003) arguments who suggested that in emerging economy like South Africa; physical capital remains the most significant fundamental resource of corporate performance.

In the same line, Ting and Lean (2009) collected data from 20 financial firms, which were listed in Bursa Malaysia from 1999 to 2007. Their empirical result indicates that there is a significant association between VAIC and firms performance measured by return on assets. Line, et al. (2009) found that both humane capital and structural capital have significant influence on profitability while capital employed has negative impact.

Moreover, Kweh et al. (2013) examined the efficiency of Malaysian software companies in converting IC into firm value. By using data envelopment analysis methodology, VAIC as input variable, return on equity and Tobin's Q as output variables, they conduct their study on 25 companies. Their results show that firm invest more on human capital efficiency compared to structural and customer capital efficiency; main market firms were less efficient in using IC compared to ACE-market firms. Also ACE market firms have higher structural capital efficiency and a lower human and customer capital efficiency compared to companies listed on main market.

In another study, Vishnu and Gupta (2014) aimed to measure IC and its association with firm performance. They aimed as to measure IC using and extended VAIC model by adding another variable to the model which is relational capital in addition to the other three variables (Human capital, structural capital, capital employed). They examined 22 large pharmaceutical Indian firms. They found that IC is significantly associated with firms' financial performance (return on

sales and assets). Also relational capital was insignificantly associated with firm performance in the extended model.

With respect to mediating and interaction effect studies will be divided to studies that used variables which mediated and moderated the relationship between firm performance and ICP and studies that used the interaction of IC elements impact on firm performance. Prior studies that tested different factors as mediating or moderation effect on IC relationship with firm performance. Like, Kamukama, Ahiauzu and Ntayi (2011) who examined the effect of competitive advantage as mediating variable between IC and firm performance. With a sample which consists of 65 microfinance Uganda firms. They found the mediating effect of competitive advantage increases the association between ICP and firm performance by 22.4 percent.

Correspondingly, Lin, Huang, Du and Lin (2012) examined the association between human capital disclosure and firm performance in accordance to moderating effect of firm size and knowledge intensity. Their sample comprised 428 firms. Lin et al., (2012) found that human capital has positive association with firm performance. Firm size negatively affects the association between firm performance and human capital disclosure. However, the above relationship was positively moderated by knowledge intensity.

With respect to corporate governance moderating effect, Wang (2013) examined effect of ICP measured by (VAIC) effect on firm value when its moderated by corporate governance. For this reason they selected a sample of 361 firms listed on Taiwan Stock Exchange. Their results point out that ICP has a significant effect on firm value also results shows that ICP is more value relevance when is moderated by corporate governance attributes.

Based on the reviewed literatures regarding ICP practices impact on firm value, the gap in these studies has been identified. Precisely, studies in the association between ICP and firm value specifically taking into consideration MFRS and corporate governance. Moreover,

studies in Malaysia didn't investigate the CG moderating effect on the association between ICP and firm value.

3.Hypothesis Development

The current study develops three hupothesis, as follows:

H1. There is a positive association between intellectual capital performance and firms' market capitalization.

H2: MFRS adoption positively affects the relationships between intellectual performance and firms' market value.

H3: There is a positive relationship between intellectual capital performance and firms' market capitalization when it is moderated by corporate governance in the annual reports of Malaysian listed companies.

4. Research methodology

4.1 Sample size and selection

This study excluded firms that have missing data. Therefore, after eliminating finance and closed-end funds sectors and firms with missing data from population and selected sample, the final sample composes of 228 firms for the years 2011, 2012 and 2013 which is equivalent to 648 firms' year observation.

4.2 Measurement of dependent variable

MCAP in this study is used to measure the impact of ICP on firm's' market value. Firm's market capitalization is defined as shareholders' equity market value which measured by multiplying number of shares outstanding by share price at the end of accounting year (Hussey, 1999; Abdolmahammadi, 2005)

4.3 Measurement of the Independent Variables

4.3.1 *Measurement of VAIC*

In measuring VAIC prior studies divided VAIC to three components representing the independent variables, they can be defined as follows, respectively:

VAIC=HCE+SCE+CEE

Where:

VA = operating revenues – operating expenses=N+T+DP+I+W ⟶ (1)

$$HCE = VA/HC \longrightarrow (2)$$

Where: HC = total salaries and wages

$$SC = VA - HC$$
$$SCE = SC/VA \quad \} (3)$$

$$CE = \text{total assets} - \text{intangible assets}$$
$$CEE = VA/CE \quad \} (4)$$

4.3.2 Corporate Governance Checklist measurement and development

The current study developed an index checklist in order to measure CG quality. This resulted in a CG index composed of 20 items. These 20 corporate governance attributes, source and score description are tabulated in table. Each of these items is treated as a dummy variable. Where, a value of 1 is assigned if the item is disclosed and 0 otherwise. The corporate governance index score (CGIS) for the company (i) is treated as percentage and calculated as follows:

$$CGIS_i = \frac{Total\ Disclosed\ Items}{Tatal\ Items} \times 100$$

The developed corporate governance index items, source and scoring is represented in Table 1 in the Appendix

4.5 Regression models

In order to answer this study's research objectives, this research usedPanel Data regression models to determine the relationship between the dependent and independent variables. Based on this, the study's model is represented below.

$$MCAP_{jt} = \alpha + \beta_1 VAIC_{jt} + \beta_2 MFRS + \beta_3 CGIS_{jt} + \beta_4 SIZE_{jt} + \beta_5 LEV_{jt} + \beta_6\ PROFIT + e_{jt} \quad (1)$$

$$MCAP_{jt} = \alpha + \beta_1 VAIC_{jt} + \beta_2 MFRS + \beta_3 CGIS_{jt} + \beta_4 VAIC_{jt} \times CGIS_{jt} + \beta_5 SIZE_{jt} + \beta_6 LEV_{jt} + \beta_7 PROFIT_{jt} + e_{jt} \quad \ldots\ldots (2)$$

5. Results

Table 1
Empirical results for the models

Variables	*Model (1)*		*Model (2)*	
	T-value	*P-value*	*T-value*	*P-value*

VAIC	*(0.81)*	*0.416*	*(-0.11)*	*0.911*
CGIS	*(2.78)*	*0.006**	*(3.87)*	*0.000**
MFRS	*(2.45)*	*0.015***	*(2.46)*	*0.014***
SIZE	*(2.50)*	*0.013***	*(2.25)*	*0.025***
ROA	*(1.08)*	*0.282*	*(1.27)*	*0.207*
LEV	*(-1.39)*	*0.164*	*(-1.77)*	*0.078****
*VAIC*CGIS*	-	-	*(-2.67)*	*0.008**
Constant	*(18.05)*	*0.000*	*(18.35)*	*0.000*
R^2	*0.5483*		*0.4971*	
Significant	*0.0000*		*0.0000*	
F Ratio	*5.28*		*5.61*	
Significant of Hausman Test	*0.0000*		*0.0000*	
Hausman Ch2	*241.33*		*232.26*	

The values in the parentheses are T_values. *** denotes significance at 0.10 level;

**denotes significance at 0.05 level; *denotes significance at 0.01

VAIC: value added of intellectual capital coefficient, CGIS: corporate governance disclosure index, MFRS: Malaysian finacail reporting standards adoption, SIZE: firm size, ROA: firm profitability, LEV: firm leverage, VAIC*CGIS: the interaction of value added of intellectual capital coefficient with corporate governance disclosure index.

Table 3 shows the empirical findings of panel data analysis for ICP impact on firms' MCAP and CG moderating effect on this association. First, this research conducted The Breush Pagan Lagrangian Multiplier test in order to choose the best model that suits the data for both models. The Breush Pagan Lagrangian Multiplier test (random effect-Pooled OLS) indicate that the variance of the random effect is not zero. Thus, the random effect is more suitable than pooled OLS for both models. Afterwards, The Husman's test has been conducted in order to select the best model that fits that data (fixed effects – random effects). Table 1 results demonstrate that the p-value of both modles is 0.000, thus, the null hypothesis is rejected, which implies that there is significant difference between the coefficients of fixed models and random models. Thus, Husman's tests results supports fixed effects assumption for correlation to exist in both models.

Moreover, table 3 depicts for main effect model (model 1) that R^2 was0.54, this designate that the model is able to explain 54 per cent of the relationship between ICPand firms' MCAP. Moreover, the F value was 5.28 with a significance level of 0.000, showing that the model is significant.

For interaction effect model (model 2) results shows that R^2 was 0.49, this entitle that the model is able to explain 49 per cent of the association between ICP and firms' MCAP. Further, the F value was 5.61 with a significance level of 0.000, indicating the interaction model is also significant.

With respect to the main variables results report that VAIC was not statistically associated with firms' MCAP in both models. Interestingly, this association became significant at 1 % when ICP was moderated with CGIS with P-value of 0.008. Moreover, results shows in main and interaction models that CGIS is significantly related to firms' MCAP at 1 % with a P-value of 0.006 and 0.000 respectively. Similarly, Findings in both models also report that MFRS is significantly associated with firms' MCAP at 5 % with a P-value of 0.015 and 0.014 respectively. For control variables results depicts that firms' size was statistically significant in main and interaction models at 5 % with a P-value of 0.013 and 0.025. However, firms' profitability results were not significant in both models. Finally, firms' leverage was not significant in the first model while it shows a significance level of 10% with a P-value of 0.078 in the second model.

On the other hand, results of model 1 do not support H1; these findings provides another continuity to prior studies that failed to support IC significance (measured using VAIC method) to explain firms valuation (Firer and Williams, 2003, Chen et al., 2005; Shiu, 2006). This insignificant results raises the critiques on VAIC method reliability and effectiveness on describing properly firms' business reality in the context of emerging economies since most of the empirical studies conducted in developing economies such as (Turkey, South Africa, Malaysia, Bangladesh, Thailand) shows same results. Therefore, it

seems that the absence of transparent and mature financial reporting system in emerging economies doesn't fit with requirement of VAIC as an ideal method of capturing IC value.

Considering H2 of model 1 do not support the hypothesis, this may further add another argument to the arguments raised in H1 in the way that the adoption of MFRS in Malaysia didn't effectively improve the quality of financial statements in a level that improves the explanation of IC valuation through VAIC method.

Finally, model 2 supports the hypothesis H3, this finding were consistent with Wang (2013) results, where the interaction effect of CG with VAIC explains IC impact on firm value. This finding demonstrates that CG amendments where better than MFRS adoption in capturing IC value and played a very important role in improving the financial structure of Malaysian firms. This was in line with Ahmed and Duellman (2007) who found that when a firm has a better CG, conservativeness in accounting is higher, consequently, has a favourable impact on firm value.

6. Conclusion

The current research aimed to investigate the impact of ICP on MCAP in Malaysian context taking in consideration MCCG amendments and MFRS adoption. Study found that ICP was insignificantly associated with MCAP and the adoption of the new accounting standards didn't affect this association. These results could be due the absence of clear guidelines of measuring IC efficiency in Malaysia. Further, this study's results offer an addition bibliography to prior studies conducted in Malaysia; where firms fails to comply with allegations concerning intangible assets(Carlin, Finch and HidayahLaili, 2009; Yaacob and Che-Ahmad, 2012); which explains the insignificant impact of the new standards on ICP effect on MCAP. In other words, Malaysian firms fail to comply with new accounting standards related to intangible assets provides rational interpretation that the significance impact of MFRS adoption on firm value might be related to other standards. More precisely, the study also examined the impact of CG moderating effect

on ICP relationship with firms' MCAP. Findings revealed that CG moderating impact had positively affected the association between ICP and MCAP.

the present paper has some limitations, first, the study conducted only in three year (e.g 2011, 2012 and 2013). Albeit this might be considered a short period to examine the impact of new standards on IC efficiency. Hence, future researcher should extended the study' period in order to have a more comprehensive view of accounting allegations changes on IC efficiency. Second, the study didn't consider firms' industry type influence on IC association with firm value. Hence, future studies should consider firms type in order to have broad view of factors affecting ICP efficiency on firm value as prior studies proven that knowledge incentive firms have better utility of IC resources then firms' in other sectors (e.gMavridis, 2004;Alipour, 2012; Mondal and Ghosh, 2012)

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