Malaysian Financial Reporting Standard 139 Financial Instruments: Recognition and Measurement Adoption and Intellectual Capital Performance: Evidence from the Malaysian Financial Sector

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ABSTRACT

The transition from tangible asset to intangible asset in the knowledge-based economy has brought several changes in terms of value creation. The value creation generated from company's intellectual capital has a major impact on company value and performance. The performance of intellectual capital in value creation (generating company's capabilities which in turn increased the company's performance) could assist investors and company's management to visualize the importance of intangible assets. MFRS 139 adoption facilitates the management and investors by providing better information environment that could enhance company's intellectual capital performance, especially the financial institution's holding companies. MFRS increases the quality of financial information, transparency level and enhances the business information environment that could in turn improves company performance. Giving attention to knowledge management theory, this study examines the association between MFRS 139 adoption and intellectual capital performance and its components. This study uses secondary data obtained from Data-stream database and annual reports of Malaysian financial institution holding companies that are listed in the main market in Bursa Malaysia from 2005 to 2015. The empirical result indicates that the MFRS 139 adoption has a significantly positive effect on company's intellectual capital performance.

Keywords: Intellectual capital performance; MFRS 139 adoption; Intangible Assets; Knowledge-based economy; Financial Sector.

INTRODUCTION

The key issue that attracts researchers to conduct more studies on intellectual capital is the differences between the company's market value and its book value, known as "intellectual capital's hidden value" (Salamudin Salamudin, Bakar, Ibrahim & Hassan 2010)[1] Intellectual capital plays an increasingly important role in driving value i.e. company performance, company value and generating sustainable competitive advantages for the company (e.g., Abeysekera 2006; Elbannan 2016; Kaplan & Norton 2004: 4; Kim & Taylor 2014). It covers customer capital, human capital, and structural capital that wrapped up in clienteles, workforce capabilities, brands, processes, systems, databases (Edvinsson & Malone 1997; Stewart 2000).

Various definition of intellectual capital can be found in literature (e.g., Choong 2008; Edvinsson 1997; Martini, Corvino, Doni & Rigolini 2016; Riahi-Belkaoui 2003; Schiuma, Lerro & Carlucci 2008; Stewart 1997) however, no consensus of intellectual capital definition among scholars (Choong 2008; Hamzah & Ismail 2008; Kamukama, Ahiauzu & Ntayi 2010). In this study, we use the ability or efficiency of company's intellectual capital in creating value to reflect the intellectual capital performance (Pulic 2000). More interestingly, the intellectual capital performance issue becomes more significant especially in the knowledge-based era whereby creative destruction and digitalization have promoted innovative new business

models to be adopted by companies. This era of economy focuses on information, knowledge, and technology as intangible assets and intellectual capital that affect information users, i.e. management and investor's decision-making. These variables are important in improving the company's performance, and accelerating nation's growth. Inability to manage intellectual capital wisely may result in endangering the survival of the company particularly when the market is volatile. The new digitalization era of the banking processes and changes in the preference of the customers have caused closure of bank branches and retrenchment of staff.

MFRSs assist the accounting information users (internally or externally) in decision-making when it comes to evaluating firm value and performance (Ball 2006). According to Malaysian Institute of Accountants (MIA) report (2010), the top leader of the G20 nations have asked for a universally high quality accounting standards for financial instruments to be adopted. Therefore, the International Accounting Standards Board (IASB) segregates the financial instrument standard into three separate standards i.e. MFRS 7 Financial Instrument: Disclosures, MFRS 132 Financial Instrument: Presentation, and MFRS 139 Financial Instrument: Recognition and Measurement (see Appendix 2). Hence this study examines only the MFRS 139 because unlike other standards that focuses on disclosure, MFRS 139 focuses on the change

in the basis of measurement. The Malaysian Accounting Standard Board 24 Financial Instruments: Disclosure and Presentation (MASB 24)/MFRS, 132 cannot be expected to change the basis for decision making since it focuses only on disclosure of information. Even under such condition, prior literature did not find it really change the disclosure quality (Hassan, Saleh, Yatim & Rahman 2012). Therefore, in order to see whether the change in financial instrument measurement do affect internal decisions (because without mandatory requirement to measure fair values of financial assets or liabilities, it is less likely that it is prepared for internal use), this study examines the impact of MFRS 139 adoption on the efficiency of intellectual capital.

In the pre-adoption period of MFRS 139, the only standard available for financial instruments was MASB 24. Hassan et al. (2012) found that MASB 24 did not mandate fair valuation of financial instruments resulted in low quality of information to decision makers from inside or outside organizations. Deloitte (2009) stated that prior to adoption of MFRS 139, the kind of information required with respect to financial instruments were not sufficient and less informative. Moreover, Hassan, Saleh and Abd-Rahman (2008) claim that insufficient disclosure requirements on the market value of financial instruments may lead to low disclosure quality and irrelative information that may negatively affect the value of the financial instruments. Subsequently, would lead to misunderstanding of financial instruments value and inefficient management decisions. Hence, under such pre-adoption period, management decisions might results in less efficiency of intellectual capital, compared to the post-adoption period.

In contrast, post-adoption of MFRS 139 provides a comprehensive classification of financial instruments information i.e. financial assets and financial liabilities in terms of recognition and measurement methods (see Appendix 2). These comprehensive classifications may disclose more information about factors influencing the firm's financial accounts i.e. profit and loss account, equity account, amortizing cost and statement of financial position (Callao, Jarne & Laínez 2007). Iatridis (2012) argues that the adoption of International Accounting Standards 39 Financial Instruments: Recognition and Measurement (IAS 39)/ (MFRS 139) promotes the accounting measurement using fair value method in the balance sheet might reduce the earning management, information asymmetry, and finally could improve the information environment for decision making. After implementing the new accounting standard MFRS 139, significant changes occurred on re-categorization of firms' accounts, a variation of both financial assets and liabilities and adjustments in financial equity (Callao et al. 2007) listed groups are now obliged to prepare consolidated financial information under IFRS, and legislative changes to bring local rules into line with international standards have been tabled. In this context, the potential impact of IFRS is fraught with uncertainty. Our study of IBEX-35 companies focuses on the effects of the new standards on comparability and the relevance of financial reporting in Spain. We address these objectives by seeking significant differences between accounting figures and financial ratios under the two sets of standards (i.e. Spanish accounting standards and IFRS. These changes are expected to provide more information that might make the information environment becomes rich. Callao et al. (2007) argue that when the financial statements are relevant, it affects the management's as well as other agents' i.e. lenders, investors, suppliers, employees and customers' decisions. Hence, fair value measurement could improve the management's decision on investment of their strategic resources i.e. intellectual capital. This, in turn, may enhance firm performance and create more values. More specifically, more information would be disclosed in the company's financial statements that indirectly would increase the disclosure quality and quantity. Hence, we argue that good information environment, specifically on the recognition and measurement of financial instruments, might help managers to make a better decision with respect to creating values from the company's intellectual capital. This study relates good information environment with the adoption of accounting standards, emphasis on the recognition and measurement of financial instruments. This study focuses on the recognition and measurement of the financial instrument because there was a fundamental change of accounting base, whereby fair value accounting is promoted (Iatridis 2012), that could have influenced decisions made by managers and users of financial statements.

In general, the adoption of MFRSs would have a favorable effect on both financial reporting quality and company performance (e.g., Ballas & Tzovas 2010; Barth, Landsman & Lang 2008; Hayati, Yuriwati, & Putra 2015; Healy, Hutton, & Palepu 1999; Lang & Lundholm 2000; Muniandy & Ali 2012). In addition, previous studies concluded that the financial statements quantity and quality have changed, particularly after adopting MFRSs (Akman 2011; Caruso, Ferrari & Pisano 2016; Sahut, Boulerne & Teulon 2011). Different than other countries, Malaysia provides a unique setting whereby gradual adoption of the IFRSs to become MFRSs was implemented. In regard to financial instrument standards, the MASB adopted MFRS 132 Financial Instrument: Disclosure and Presentation in 2001 while implemented MFRS 139 Financial Instrument: Recognition and Measurement in 2010. The reasons behind the delay in the adoption of this standard were because of the complexity of the requirements on measurement and recognition of financial instrument information (Guay, Samuels & Taylor 2016), particularly for the financial sector that deals directly with the instruments. As a conclusion, it is expected that MFRS 139 has a significant impact on managerial decisions and the company's intellectual capital performance. This argument is based on evidence in prior literature in which after similar standard adoption, the level of accounting information disclosure is raised, transparency increased, and relevant information and price efficiency is enhanced (e.g., Akhtaruddin & Haron 2012; Akman 2011; Elbakry, Nwachukwu, Abdou & Elshandidy 2017; Guay et al.

2016; Hassan et al. 2012). Callao et al. (2007) argue that when the financial statements are relevant, it affects the management decisions. Thus, it can be expected that the information environment for decision making has been significantly improved after the adoption of the new MFRS 139, thus affecting intellectual capital performance positively. Implicitly we compare between the period when only MFRS 132 was effective to the period when both MFRS 132 and 139 were effective.

This paper contributes to the existing body of literature as follow. First, this paper shows empirical evidence on the association between MFRS 139 adoption and intellectual capital performance and its components by using secondary data from listed financial institution holding companies in Malaysia. The context in Malaysia allows us to focus specifically on the effect of MFRS 139 adoption without being influenced by other standards due to the gradual adoption of MFRSs. Recent studies have shown that rich information environment is related to lower cost of capital (Matsumoto & Shaikh 2017; Shroff, Verdi & Yost 2017), influences capital structure (Dang, Huynh, Nguyen & Nguyen 2017), reduces earnings management (Li & Zaiat 2017) and less management and analyst forecast error (Kitagawa & Okuda 2016; Zhu, Zhang, Li & Chen 2015). Generally, information environment affects managerial or user's decisions or choices they make. As such, we predict that better information environment under the adopted standard MFRS 139 on recognition and measurement of financial instrument would facilitate managerial choices and planning, hence resulting in better intellectual capital performance. Such prediction on improvement in managerial choices, internally, is unique. In other words, intellectual capital can be used more efficiently and create more value for the company's post implementation of the new standard. Therefore, this study can be considered as the first study which examines this issue. Second, the outcome of this study provides a significant contribution to policymaker or capital market regulators in order to enhance factors affecting the intellectual capital performance.

The remainder of this paper is organized as follows. The next section points out a brief review of prior literature and theoretical framework on this topic. Section 3 presents the methodology. Subsequently, section 4 presents the results and the final section elaborates the study conclusion.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

INTELLECTUAL CAPITAL PERFORMANCE

Intellectual capital, in nature, is intangible capital which has been extensively recognized as company's strategic assets or strategic resources. These assets are qualified for creating company's sustainable competitive advantage and excellent company financial performance (Barney 1991). The growing gap between company's market value and their book value is called intellectual capital (Edvinsson & Malone 1997). Riahi-Belkaoui (2003) defined intellectual capital from knowledge viewpoint as a valuable and unique knowledge that is related to the organization. While Alipour (2012) defined it from value creation viewpoint "as the group of knowledge assets that are owned and/or controlled by an organization and most significantly drive organization value creation mechanisms for targeted company key stakeholders".

Since the intellectual capital is a non-physical item, scholars have segregated it into various components for measuring purpose and developing the intellectual capital framework. Edvinsson and Sullivan (1996) classified intellectual capital into; human capital, customer capital, and organizational capital. Sveiby (2010) classified intellectual capital into; individual competence, internal structure, and external structure. Meanwhile, Brooking (1997) proposed a new intellectual capital framework, involving market assets, intellectual property assets, infrastructure assets and human assets. Stewart (2000) categorized intellectual capital components into customer capital, human capital and structural capital. Stewart's (2000) classification as the most extensively used in intellectual capital literature. The recent studies which used this classification are, for example, Kehelwalatenna (2016), Hussinki, Ritala, Vanhala & Kianto (2017) and Nawaz and Haniffa (2017).

Literature dedicated to examining intellectual capital performance has proposed intellectual capital measurements (e.g., Nazari & Herremans 2007; Sveiby 2001; Tan, Plowman & Hancock 2007). However, the intellectual capital measurement appears as a problematic matter due to its intangible nature (Tan, Plowman & Hancock 2008). Furthermore, the prior literature shows that intellectual capital is not easy to quantify empirically, therefore, it can be described as non-explicitly recorded in the organization's financial reporting. According to Ordóñez de Pablos (2004), there is no commonly comprehensive clear framework and measurement of intellectual capital concept. Nevertheless, Pulic (2000) has introduced Value Added Intellectual Coefficient (VAIC) which focuses on intellectual capital performance components (Alipour 2012; Goh 2005; Kamath 2007; Ting & Lean 2009). This model of measuring intellectual capital performance is commonly accepted since it is based on quantitative financial data available in the company financial statements. Volkov (2012) stated that the Pulic's (VAIC) model has been utilized by more than 40 studies and cited by more than 2300 scholars.

Pulic (2000) model (VAIC) shows the efficiency of intellectual capital in value creation. VAIC has its performance components i.e. efficiency in human capital, structural capital and customer/relational capital. Specifically, human capital encapsulates individual workforce capabilities, workforces' skills, and knowledge, workforce education, welfare, working satisfaction, innovativeness, beliefs, philosophy, experience, knowledge, skills, abilities, culture, learning, and

workforce safety in order to provide goods and services for potential customers (Abeysekara & Guthrie 2005; Bontis, Keow & Richardson 2000; Edvinsson & Sullivan 1996). Customer capital comprises all knowledge and relationships regarding customers and client. Furthermore, customer capital is the organization's investment for the purpose of building strong relationships with their clients (Abeysekara & Guthrie 2005; Bontis et al. 2000; Edvinsson & Sullivan 1996). Overall, intellectual capital performance is considered as an outcome of managerial decisions. As the decisions are affected by the availability of information, in our study, information about the fair values of financial instruments, we focus our attention to MFRS 139.

MFRS 139

Studies have shown significant impacts of IFRSs adoption on company market value and company performance (e.g., Bodle, Cybinski & Monem 2016; Bova, & Pereira 2012; Hamberg, Paananen & Novak 2011; Paananen & Lin 2009). Based on MASB, the Malaysian Financial Reporting Standards (MFRSs) are equivalent to the IFRSs. Since it is a word for word adoption of IFRS, this study will use MFRS instead of IFRS as a reference. Furthermore, this paper focuses on a specific standard which is MFRS 139 Financial Instrument: Recognition and Measurement which was adopted the in beginning of January 2010.

Hassan and Saleh (2010) stated that Malaysian listed companies faced extreme difficulty in the technical matter introduced by the fair value accounting approach (which becomes the reason for the delay of the adoption as compared to MFRS 132). As a result, this delay creates subjectivity and uncertainty in company's financial statements (The, Ng, Ong & Soh 2013). As such, it is an empirical question as to whether implementation of this standard creates additional value to companies. We test this using the intellectual capital performance as an indication of additional value to the companies.

Specific to financial instrument standards, there was no exact accounting standard available that can provide guidelines for the reporting financial instruments prior to 2001 (Hassan et al. 2012). Consequently, IASB issued two standards, IAS 32 Financial Instruments: Disclosure and Presentation (to be implemented in 2001) and IAS 39 Financial Instruments: Recognition and Measurement.

However, IAS 32 was less comprehensive (Hassan et al. 2012) (see duration 1 in Figure 1). The subsequent movement starts in 2001 to 2005, where the accounting standard setters issued MASB 24: Financial Instruments: Disclosure and Presentation (Figure 1, duration 2). The scope of MASB 24 provides a certain disclosure and presentation requirements on the statement of financial position of financial instruments and identifies particular information that should be disclosed on the off-balance sheet and the balance sheet (Hassan & Saleh 2010; Hassan et al. 2008). MASB 24 was issued based on IAS 32. Since, the IAS 32 did not provide sufficient disclosure quality, the accounting standard has been improved with the issuance of FRS 132/ (IAS 32) Financial Instruments: Disclosure and Presentation, which was adopted from 2006 to 2009 (still duration 2, in Figure 1). The next subsequent movement starts in 2010 where the second financial instrument standard IAS 39/ (MFRS 139) Financial Instruments: Recognition and Measurement were implemented (duration 3). MFRS 139 was established based on International Financial Reporting Standards requirements and rules (Carlin, Finch & Laili 2009). The adoption of MFRS 139 was postponed in Malaysia and became effective on or after 1 January 2010. Figure 1 summarizes the three development stages of financial institution standards in Malaysia from (prior the year of 2001 up to the year of 2010).

After the adoption of MFRS 139, the disclosure quality is expected to increase (Hassan et al. 2012). When organizations were mandated to adopt MFRS 139, it can be expected that the disclosure level and transparency increased, information asymmetry and cost of debt reduced and corporate's market transactions, performance, and investors' trust enhanced (Muller, Riedl & Sellhorn 2011). Since this standard is complex, companies are more likely to have in place the necessary infrastructure. More specifically, pre-adoption of MFRS 139, the kind of information requirement in regards to financial instruments were insufficient and less formative. Besides that the disclosures were found to be less meaningful and less useful before the adoption of MFRS 139 (Deloitte 2009). Without improvement in information prepared such as unrealized gains or losses and classification and treatment of different classes of investment, it might not improve managerial monitoring and decision making. Hence the value added might not be maximized and the
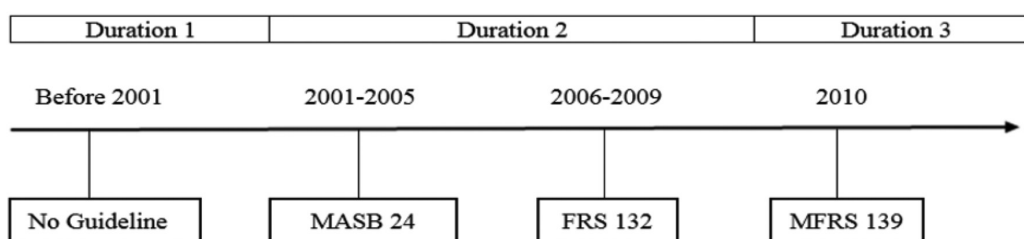

FIGURE 1. The development of financial institutions standards in Malaysia

intellectual capital (as resources) cannot be used efficiently in generating performance. However, post mandatory adoption, the communication of information (including the measurement and recognition of classified financial instrument's fair values) becomes more useful and more effective. This, in turn, makes the disclosures more meaningful (Deloitte 2009). Thus, the MFRS 139 adoption significantly influence organization performance and its market value.

Furthermore, adoption of MFRS 139 provides a classification of financial instrument information that disclosed more information about factors within manager's control that are influencing the firm's financial accounts i.e. profit and loss account, equity account, amortizing cost and statement of financial position (Callao et al. 2007). Those figures are relevant in enhancing the firm value and help the management to make their decision especially in their strategic assets i.e. intellectual capital. However, since there is a lack of studies that have investigated the mandatory adoption of MFRS139 on intellectual capital performance, this study expected that the role of MFRS139 post-adoption has a significant effect on intellectual capital performance, i.e. the value created using company's intellectual capital. Thus, the adoption of MFRS139 may enhance the company's financial reporting in a way that makes the financial reporting more revealing, relevant and informative for decision making (Iatridis & Dalla 2011).

The relation between adoption of a standard that can enhance information environment and company's intellectual capital performance can be explained by knowledge management theory. Users process information to become knowledge after authentication and subjected to user's perception, or context (Churchman 1971). Knowledge about financial instrument's fair values is created by a team of accountants within a company, disseminated through formal reporting which enhances information environment for other managers to make a decision. In the financial sector, financial institutions are usually very large. In such situation, co-location of the information provider and decision maker may be unlikely, thus resulting in low level of understanding regarding the current standing of the organization. Therefore, decision making may be negatively affected. When fair value reporting of financial assets and liability is promoted by the new standard, the information gap lessens and decision making becomes better. Therefore, we expect, in such situation, the intellectual capital efficiency improves.

Additionally, the changes that are brought by MFRS 139 are expected to provide more information that might enhance the information environment and would help firm managers to improve their decision. These changes are also expected to have an effect on firm value and their strategic assets i.e. intellectual capital performance, human resource, structural resource, and relational resource. Additionally, Pulic's (2000) model (VAIC) classifies intellectual capital performance into three components (Mavridis & Kyrmizoglou 2005; Ting & Lean 2009; Williams 2001). These components represented by dependent variables such

as human capital efficiency, structural capital efficiency, and capital employed efficiency. VAIC is regarded as a proxy for measuring the value creation efficiency of a company's strategic resources, including intangible/tangible assets (Clarke, Seng & Whiting 2011; Tan et al. 2008). Since there is a lack of studies that have investigated the mandatory adoption of MFRS 139 on intellectual capital performance and its components, therefore, this study aims to test the role of mandatory adoption of the MFRS 139 on the intellectual capital performance and its components. As a conclusion, the mandatory adoption of the MFRS 139 that requires increased organization disclosure information enhances the process of knowledge attainment and integration by the managers, which could eventually enhance overall company's value creation. Accordingly, the following hypotheses are proposed:

H_1: The MFRS 139 adoption is positively associated with the intellectual capital performance.

A similar argument applies to the components of intellectual capital. The performance of intellectual capital depends on the value add generated by each component of intellectual capital. Generally, the value add is in the form of company performance. Human capital efficiency is measuring how efficient the investment in human capital can generate value add to the company. Investment in human capital can be in the form of salary and wages. The more value added generated, the more efficient human capital in a company. Therefore, we predict:

H_{1a}: The MFRS 139 adoption is positively associated with the human capital efficiency

Structural capital refers to knowledge or organizational capital, such as documented procedures or systems. Knowledge that stays even when employees leave the organization. Therefore, the share of value adds after leaving out human capital investment (Iazzolino & Laise 2013). This component is also expected to increase after the adoption of MFRS 139 due to increase in decision efficiency.

H_{1b}: The MFRS 139 adoption is positively associated with the structural capital efficiency

Finally, capital employed efficiency is the efficiency in investment in capital i.e. tangible assets in value creation. In financial institutions, most assets are financial assets. It is expected that this component to be the most affected by the implementation of MFRS 139 because disclosure about unrealized gains or losses as well as new categorization and recognition rules affect classes of assets that represents capital employed. Consistent with others, we predict implementation of new MFRS 139 has positive association with capital employed efficiency. However, implicitly we expect the effect could be more pronounced than other components of intellectual capital performance.

H_{1c}: The MFRS 139 adoption is positively associated with the capital employed efficiency

Consequently, Figure 2 presents the research framework that examines the effect of mandatory adoption of the MFRS 139 on the intellectual capital performance and its components.

METHODOLOGY

SAMPLE AND SOURCE OF THE DATA

This study restricts its sample to the 30financial institution holding companies (10 years data) listed in the main market of Bursa Malaysia for the following reasons. Firstly, the performance of intellectual capital requires higher standards of the organization of strategic resources to be generated. Financial institution holding companies are recognized as being knowledge-intensive and relies on intellectual capital performance to generate organizational value (Firer & Williams 2003; Goh 2005). Secondly, most of the assets in financial institutions are financial assets and liabilities. It can be expected that companies within this sector are affected to a large extent by the adoption of MFRS 139 compared to other industry. Furthermore, listed financial institutions possess important characteristics such as huge amounts of strategic resources and capabilities and are usually large with a massive workforce (Ting & Lean 2009). These organizations also have extensive customer relationship that provides additional or voluntary initiatives, such as information on the performance of intellectual capital.

This paper used secondary data gathered from Data-stream database and company's annual reports. This study obtained the annual report of 30 listed financial institutions holding companies from (www.bursamalaysia.com). These reports were then used to collect data on corporate governance attributes (control variable). The second source of data is the Data-stream database which was used to collect data on intellectual capital performance and control variables (size and leverage). Data-stream database is a meaningful and trustworthy source, and was used in prior literature (e.g., Abdolmohammadi 2005; Haji & Ghazali 2013). This study also selects the period from 2005 to 2015 with the expectation of the year 2010 to be the adoption year. This year was excluded due to the adoption of financial institution standard 139 (MFRS 139) that was launched at the beginning of 2010. Hence, this paper intent to examine the role of mandatory adoption of MFRS 139 on the intellectual capital performance of the financial institutions holding companies.

MEASUREMENT OF VARIABLES

Intellectual Capital Performance - this study used a Pulic's model called the Value Added Intellectual Coefficient (VAIC). VAIC was used in previous studies to classify intellectual capital performance components (Hamzah, Parastou & Ahmad 2016; Hussinki et al. 2017; Kehelwalatenna 2016; Mavridis & Kyrmizoglou 2005; Nawaz & Haniffa 2017; Ting & Lean 2009; Williams 2001) as well as a proxy for measuring the value creation efficiency of a company's strategic resources, including intangible/tangible assets (Clarke et al. 2011; Tan et al. 2008). VAIC is made up of three variables, where HCE represents human capital efficiency, SCE represents structural capital efficiency, and CEE represents capital employed efficiency. Moreover, value added is defined as a company's capability to capture and create additional value for a company's stakeholders (Clarke et al. 2011; Tan et al. 2008). Therefore, the first step when measuring VAIC is determining the value added (VA), which can be calculated using the difference between operating revenues (output) and operating expenses (input), excluding labor cost (Clarke et al. 2011). Obtaining intellectual capital performance and its components formulation is presenting as follows:

HCE = VA ÷ HC where VA = operating revenues minus operating expenses and HC = human capital = Total wages and salaries in Ringgit Malaysia;

SCE = SC ÷ VA where SC = Structural capital= VA − HC; and

CEE = VA ÷ CE where CE Customer/Relational Capital = Total Assets minus Intangible Assets.

VAIC= HCE + SCE + CEE

MFRS 139 adoption- the Malaysian government launched the financial instrument standard (MFRS 139) on
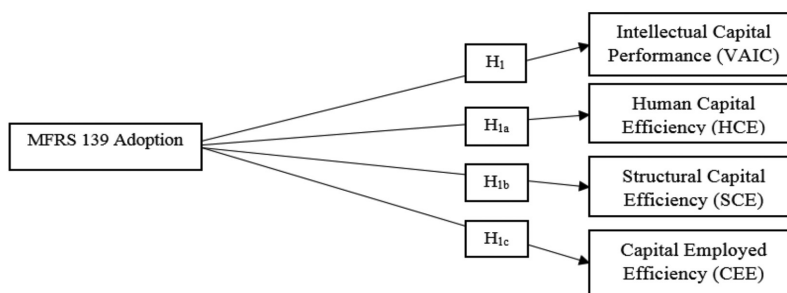

FIGURE 2. Research framework

1 January 2010 which then becomes compulsory for listed companies in the stock market exchange. Therefore, this study measures MFRS 139 using a dummy variable (e.g., Hamberg et al. 2011; Yaacob & Che-Ahmad 2012) where 0 represents the years prior to adoption (2005, 2006, 2007, 2008 and 2009), and 1 represents the years after MFRS 139 adoption (2011, 2012, 2013, 2014 and 2015). Moreover, the first control variable is company's size. Economic features between big and small companies are different (due to economies of scale), and this, consequently, would affect the efficiency in the value creation. Accordingly, company's size is measured as a company's total assets at the end of a financial year (Haji & Ghazali 2013; Ousama, Fatima & Hafiz Majdi 2012) and expected to have positive association to VAIC, HCE, SCE and CEE. The second control variable is company's leverage. Ahn, Denis & Denis (2006) claimed that companies with lower levels of debt ability and higher levels of financial leverage will report higher levels of financial risks. The financing cost could increase, while the rate of return could be reduced, which would lead to negative contributions to a company's value. Differently, for companies with higher debt ability, the cost of capital is low compared with companies reporting low debt ability. The cost of capital is usually negatively related to the value creation. The higher cost of capital, it is natural to expect the lower value created as cost of capital is a deduction from profit. Thus, previous studies utilized total liability to shareholders' equity (Clarke et al. 2011; Ousama et al. 2012).

Corporate governance implies the system, processes, and mechanisms that companies control and supervise management actions. Since there is a "separation of ownership and control" (Jensen & Meckling 1976)show its relationship to the 'separation and control' issue, investigate the nature of the agency costs generated by the existence of debt and outside equity, demon-strate who bears these costs and why, and investigate the Pareto optirnality of their existence. We also provide a new definition of the firm, and show how our analysis of the factors in-fluencing tht-creation and issuance of debt and equity claims is a special case of the supply side of the completeness of markets problem. The directors of such [joint-stock] companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frcqucntly watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give thcmsclvcs a dispensation from having it. Negligence and profusion, there-fore, must always prevail, more or lcss, in the management of the affairs of such a company. Adam Smith. Tire W&rh of Ndutrs, 1776, Cannan Edition (Modern Library, New York 1937 between an organization's owner and manager, it is crucial to constructing corporate governance as control variables. Furthermore, this study selects board of directors and audit committee to represent corporate governance attributes,

because both significantly affect corporate activities (Akhtaruddin & Haron 2012; Cerbioni & Parbonetti 2007), and hence value creation activities. It can be expected that good governance may lead to higher value creation within a company. Moreover, the Malaysian Code of Corporate Governance (MCCG) amendment in 2012 focuses on board of director and audit committee characteristics. Therefore, this study focuses on corporate governance attributes, especially MCCG amendment. This study selected board of director's characteristics, such as board size measures via the total number of directors on the board (Appuhami & Bhuyan 2015; Dalwai, Basiruddin & Abdul Rasid 2015; Greco 2011). Board diversity measures via the dummy variable where the value of 1 if the board comprises more than one ethnicity (e.g., Malay, Chinese, Indian and/or others), 0 otherwise (Ujunwa 2012). Board of directors' independence measures via the ratio of independent directors in the board (Appuhami & Bhuyan 2015; Greco 2011). Nominating committee independence measures via the ratio of independent committee members in nominating committee (Salleh 2009). Furthermore, audit committee characteristics, such as its size, can be measured via the number of audit committee members (Appuhami & Bhuyan 2015; Greco 2011). Audit committee meeting can be measured via the total number of meeting conducted annually (Greco 2011).

RESULTS

Table 1 presents the descriptive statistics for intellectual capital performance and its components, MFRS 139 adoption and control variables of 296 company-observations. The average value of intellectual capital performance (VAIC) is 9.82, with a minimum value of -5.99 and a maximum value of 25.63. This result is consistent with Chen, Cheng and Hwang (2005) and Firer and Williams (2003) which shows a wide variance intellectual capital performance score within financial companies. Moreover, matching with three elements of intellectual capital performances (e.g., HCE, SCE, and CEE), Table 1 shows that the HCE is considered the dominant element contributor of the intellectual capital performance score with a mean of 6.97. This result indicates that human capital corroborates as an essential source of intellectual capital performance (Alhassan & Asare 2016; Murthy & Mouritsen 2011; Rehman et al. 2011;). This result shows a better understanding of the hidden value that creates through intellectual capital performance (Bontis 2004). The subsequent component is the SCE mean with 1.80, while the CEE mean was 1.15. Since these variables are not normally distributed (see Table A3), this study applies two-step approach transformation for continues variables such as VAIC, HCE, SEC, and CEE (Templeton 2011).

Pearson's Correlation test was conducted for all study's variables. The result is shown in Table 2. MFRS 139 adoption do not have significant association with VAIC and its components, HCE, SCE and CEE. This indicates that on the surface efficiency is not affected by new standard

TABLE 1. Descriptive Analysis

Variables	Mean	Std. Deviation	Min	Max
VAIC	9.8200	5.7421	-5.99	25.63
HCE	6.9789	5.4713	-8.07	22.03
SCE	1.8009	0.7690	-0.31	3.920
CEE	1.1477	0.4068	0.030	2.727
MFRS 139	0.5	0.500	0.0	1.0
lnSize	15.8134	2.1792	10.2586	20.3784
lnLev	2.0995	1.2250	-5.4919	4.2475
lnBDsize	2.0415	0.2675	1.3862	2.5649
lnBDmeet	1.9772	0.4850	0.6931	3.2188
BDdiv	0.8733	0.3331	0.0	1.0
BDind	0.5067	0.1290	0.2222	1.0
BDnom	0.3709	0.1749	0.0	0.8
lnACsize	1.2867	0.2366	0.6931	1.9459
lnACmeet	1.7276	0.4691	0.0	3.0445

adoption. However, the result of correlation cannot be dependable as it does not control for serial correlation and variance in the efficiency measures may be influenced by other factors. As such, panel data and multiple regression controlling for other factors are necessary to be employed. The Variance Inflation Factors" (VIF) was conducted to test the multicollinearity. Gujarati and Porter (2009) and Pallant (2011), argued that the multicollinearity problem occurred when the correlation score among two variables is higher than 0.8 or 0.9. For this study, the correlation matrix shows that none of the coefficient scores are exceeding the benchmark at the level of 0.8. However, Table 2 reported high Pearson's correlation between HCE, SCE, and VAIC. Therefore, the multicollinearity seems to be insignificant because the VAIC and its attributes are tested in separate regression models.

Furthermore, this study carried out further statistical analysis to test the multicollinearity. For this issue, the collinearity diagnostic is applied to evaluate the collinearity among study's variables whether it is still harmful or not. Hair, Anderson, and Black (1998) mention that when the Variance Inflation Factor (VIF) is less than 10 and the Tolerance quantity (1/VIF) is larger than 0.10, this indicates that the multicollinearity did not exist. Therefore, this study carried out the VIF test for all models (see Appendix 1 in Table A1). The result shown that the multicollinearity issue did not pose serious problem to the models.

REGRESSION ANALYSIS

This study employed panel data to match with this study's objectives. This study also tested additional statistical tests related to panel data before testing the linear regression. Firstly, Breusch and Pagan Lagrangian multiplier test was conducted to select the appropriate model for regression linear analysis. This test choses the best model between Ordinary Least Squares (OLS) or Random Effect Model (REM). More specifically, the null hypothesis (Ho) claim that if the p-value is more than α level (0.05), then the OLS is the suitable model. Whereas, when the p-value of this test is less than 0.05, in this case, the null hypothesis is rejected, then the REM is the suitable model. Appendix 1 Table A2 shows the Breusch and Pagan Lagrangian multiplier result for the all models. The results indicate that the p-value of the test is lower than 0.05, the null hypothesis is rejected, and the REM is chosen for all study's models (4-model).

Subsequently, the Hausman test was carried out to select the suitable model between REM and Fixed Effect Model (FEM). The selecting model is based on the p-value of the test. When the p-value of the test is lower than 0.05 the null hypothesis is rejected, however, this study failed to reject the null hypotheses. This study selects REM. Thus, Appendix 1 presents the Hausman Test results for all study models (see Table A2 Appendix 1). Consequently, the study carried out Wooldridge's test to check the autocorrelation problem (see Table A2 Appendix 1). Findings in Table A2 indicates that the p-value for all model is not significant which means that autocorrelation does not exist except for model 1b. However, model 1b found that the autocorrelation exists. Therefore this study carried out robust standard errors test only for model 1b.

Table 3 displays all models that show the results of REM of linear regression of the dependent, independent, and control variables. Model 1 presents the association between the MFRS 139 adoption, the intellectual capital performance (VAIC) and other control variables. Model 1 results show a positively significant association between the MFRS 139 adoption and VAIC at the level of 0.05 with a coefficient of 0.1901. This direction can be interpreted as the mandatory adoption of the MFRS 139 that requires increased organization disclosure information enhances the process of knowledge attainment and integration by the managers, which could eventually enhance overall company's value creation. Post adoption of MFRS 139 enhance information environment, specifically on the recognition and measurement of financial instrument, that may help managers to make a better decision with respect to creating values from the company's intellectual capital. Thus, the first model result is supporting the first main hypothesis (H_1).

TABLE 2. Pearson's Correlation

Variables	VAIC	HCE	SCE	CEE	MFRS 139	lnSize	lnLev	lnBDsize	lnBDmeet	BDdiv	BDind	BDnom	lnACsize	lnACmeet
VAIC	1.0000													
HCE	0.9481***	1.0000												
SCE	0.9655***	0.9941***	1.0000											
CEE	0.3477***	0.2460***	0.2243***	1.0000										
MFRS 139	0.0814	0.0194	-0.0067	-0.0006	1.0000									
lnSize	0.0840	0.1899**	0.1799**	-0.5692***	0.1254**	1.0000								
lnLev	0.0957*	0.1763**	0.1683**	-0.4793***	-0.0369	0.7723***	1.0000							
lnBDsize	0.1091*	0.2706***	0.2623***	-0.2426***	-0.0281	0.4853***	0.3434***	1.0000						
lnBDmeet	0.1392**	0.2563***	0.2381***	-0.2231***	0.0073	0.5993***	0.4526***	0.3820***	1.0000					
BDdiv	0.1474**	0.1040*	0.1092*	-0.0689	0.0601	0.0715	-0.0109	0.1120*	-0.0758	1.0000				
BDind	0.0917	-0.0071	0.0033	0.0646	0.2476***	0.0331	0.0086	-0.2339***	0.2052***	0.0470	1.0000			
BDnom	-0.0101	-0.0491	-0.0342	-0.1474	0.2303***	0.0773	0.0312	-0.1479**	0.1166**	-0.1316**	0.4582***	1.0000		
lnACsize	0.0776	0.2151***	0.2122**	-0.0837	0.0840	0.2429***	0.1828**	0.4659***	0.3919***	-0.0351	0.1389**	0.0750	1.0000	
lnACmeet	0.1112*	0.1863**	0.1647**	-0.1919***	0.0083	0.5299***	0.4013***	0.3441***	0.6947***	-0.0998*	0.1674**	0.1445**	0.3981***	1.0000

Note: MFRS 139 Financial Instrument: Recognition and Measurements, VAIC: value added intellectual coefficient (VAIC = HCE + SCE + CEE), HCE: human capital efficiency, SCE: structural capital efficiency, CEE: capital employed efficiency, lnSIZE: logarithm of company size, lnLEV: logarithm of company's leverage, lnBDsize: logarithm of board director size, lnBDmeet: logarithm of board director meetings, BDdivr: board director diversity, BDind: board of director independence, BDnom: board of director nomination, lnACsize: logarithm of audit committee size and lnACmeet: logarithm of audit committee meetings, all the values are measured by using Malaysian Ringgit.
***, **, * correlation is significant at the level of 1%, 5%, and 10%.

TABLE 3. Random effect model of linear regression for model 1 to 1c

Variables	Model 1		Model 1a		Model 1b		Model 1c	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
MFRS 139	0.1901	0.048**	-	-	-	-	-	-
MFRS 139	-	-	-0.0492	0.922	-	-	-	-
MFRS 139	-	-	-	-	-0.0215	0.859	-	-
MFRS 139	-	-	-	-	-	-	0.0681	0.077*
lnSize	-0.059	0.350	0.3069	0.481	0.0295	0.701	-0.0859	0.001***
lnLEV	0.1604	0.073*	-0.6810	0.224	-0.0650	0.584	-0.0103	0.778
lnBDsize	0.4449	0.133	3.7347	0.016**	0.5058	0.161	0.0477	0.693
lnBDmeet	0.1305	0.452	2.1229	0.016**	0.2821	0.052	0.0273	0.697
BDdivr	0.0595	0.778	-0.2083	0.862	-0.0218	0.889	-0.0717	0.413
BDind	1.0041	0.032**	3.5360	0.120	0.4865	0.316	0.3824	0.042**
BDnom	-0.6365	0.065*	-2.6190	0.126	-0.2774	0.471	-0.4265	0.002**
lnACsize	-0.4652	0.079*	-2.0147	0.130	-0.2811	0.231	-0.1210	0.255
lnACmeet	0.0630	0.700	-0.5430	0.504	-0.0779	0.576	0.0575	0.383
R- squared	0.0387		0.0606		0.0532		0.3785	
F-statistic	18.21		19.78		33.64		35.77	
Prob (F-statistic)	0.05		0.031		0.000		0.000	

Note: MFRS 139 Financial Instrument: Recognition and Measurements, VAIC: value added intellectual coefficient (VAIC = HCE + SCE + CEE), HCE: human capital efficiency, SCE: structural capital efficiency, CEE: capital employed efficiency, lnSIZE: logarithm of company size, lnLEV: logarithm of company's leverage, lnBDsize: logarithm of board director size, lnBDmeet: logarithm of board director meetings, BDdivr: board director diversity, BDind: board of director independence, BDnom: board of director nomination, lnACsize: logarithm of audit committee size and lnACmeet: logarithm of audit committee meetings, Model 1 examines the relationship between MFRS 139 adoption and intellectual capital performance, Model 1a examines the relationship between MFRS 139 adoption and human capital efficiency, Model 1b examines the relationship between MFRS 139 adoption and structural capital efficiency, and Model 1c examines the relationship between MFRS 139 adoption and customer/relational capital efficiency, all the values are measured by using Malaysian Ringgit.
***, **, * correlation is significant at the level of 1%, 5%, and 10%.

Table 3 presents model 1a, 1b, and 1c which explain the intellectual capital performance components HCE, SCE, and CEE respectively. The random effect model of linear regression for model 1a (HCE) shows that the mandatory adoption of MFRS 139 does have an insignificant association with HCE. Thus, this result is not supporting the first sub-hypothesis (H_{1a}). Accordingly, the second sub-hypothesis (H_{1b}) result that examines the association between MFRS 139 adoption and structural capital efficiency shows an insignificant association. Thus, the H_{1b} is not supported. Finally, there is a significant and positive association between the mandatory adoption of MFRS 139 and capital employee efficiency at the level of 0.1 with a coefficient 0.0681.

Therefore, this study argues that the adoption of MFRS 139 is enhancing the efficiency of intellectual capital (VAIC) and the efficiency of capital employ in the Malaysian financial sector. The explanatory power of random effect model regression is quite good and the range of minimum score of 0.0387 and the maximum score of 0.3785. This score indicates that model 1 is explaining 0.0387 of the changes in the company intellectual capital performance of the financial sector. The f-statistics show that all models have the significant score at the level of 0.05 and 0.01. The study finding reveals that the adoption of MFRS 139 are associated the VAIC and its three components with the minimum explanatory power of random effect model of 3.8 per cent and maximum 37.8. This result was consistence with Ting and Lean (2009).

CONCLUSION

The value creation generated from the intellectual capital is one of the major elements of intangible assets Dženopoljac, Janoševic & Bontis 2016). MFRS 139 adoption facilitates investors to access better accounting information as well as it becomes a conclusive environment that could enhance companies' intellectual capital performance. This paper examines the adoption of MFRS 139 on the intellectual capital performance and its components in listed financial institution holding companies. Secondary data were collected. The study findings show that there is a positive and significant relationship between mandatory adoption of MFRS 139 and the intellectual capital performance and mandatory adoption of MFRS 139 and the capital employed

efficiency in the financial sector. This results imply that the mandatory adoption of MFRS 139 played an effective impact on increasing the efficiency of intellectual capital and efficiency of relational capital, and hence increasing the company's market value. Since the main model VAIC in total (Model 1) is positive and significant support, with that it can be concluded that the model is partially supported. The efficiency of relational capital (model $_{1c}$) is only supported with mandatory adoption of MFRS 139. This implies that the adoption of MFRS 139 effects only relational capital that would have effect on VAIC in total. Each component of intellectual capital is independent form others components, therefore the efficiency of intellectual capital in total is independent from their components. Thus, the study result reveals that the adoption of MFRS 139 does not have similar impact on the VAIC and its components.

The finding of this study supports the argument in which implementing a new financial instrument standard has improved business information environment, specifically on the recognition and measurement of financial instrument. Consequently, this may help managers to make a better decision with respect to creating values from the company's intellectual capital. The promotion of fair value accounting in MFRS 139 could have influenced decisions made by managers and users of financial statements. This study also found that there is an insignificant association between mandatory adoption of MFRS 139 on both intellectual capital performance components; HCE, SCE, CEE. It implies that the adoption of MFRS 139 does not have a similar effect on intellectual capital performance. Consequently, this study opens more and further investigation of this relationship. Further study may examine the study issue with different markets i.e. Access, Certainty, Efficiency market (ACE market) or different industries. Besides that, further studies may investigate the reasons that make HCE and SCE insignificant, which is beyond the scope of this study. This study's results are limited only to listed financial institution holding companies in the main market of Bursa Malaysia. Thus, the result cannot be generalized to other companies.

NOTES

[1]   In the context of Malaysia, Salamudin et al. (2010) concluded that intangible assets represent 44% of the total Malaysian companies' assets.

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APPENDIX 1
DIAGNOSTIC TESTS

TABLE A1. Multicollinearity Test "Variance Inflation Factors" (VIF) and Tolerance

Variables	Model 1		Model 1a		Model 1b		Model 1c	
	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance
MFRS 139	1.21	0.8277	1.22	0.8203	1.22	0.8184	1.20	0.8304
lnSize	3.94	0.2538	4.07	0.2455	4.08	0.2452	3.92	0.2552
lnLev	2.69	0.3710	2.85	0.3510	2.85	0.3504	2.68	0.3728
lnBDsize	1.93	0.5188	1.93	0.5192	1.91	0.5230	1.91	0.5232
lnBDmeet	2.47	0.4043	2.46	0.4071	2.45	0.4085	2.47	0.4044
BDdiv	1.12	0.8951	1.12	0.8922	1.12	0.8895	1.12	0.8957
BDind	1.57	0.6380	1.56	0.6390	1.56	0.6408	1.55	0.6451
BDnom	1.35	0.7406	1.35	0.7402	1.36	0.7372	1.33	0.7524
lnACsize	1.54	0.6511	1.56	0.6418	1.54	0.6481	1.54	0.6507
lnACmeet	2.15	0.4654	2.16	0.4634	2.16	0.4634	2.15	0.4654
Mean VIF	2.00		2.03		2.03		1.99	

Note: MFRS 139 Financial Instrument: Recognition and Measurements, lnVAIC: logarithm of value added intellectual coefficient (VAIC = HCE + SCE + CEE), HCE: human capital efficiency, SCE: structural capital efficiency, CEE: capital employed efficiency, lnSIZE: logarithm of company size, lnLEV: logarithm of company's leverage, lnBDsize: logarithm of board director size, lnBDmeet: logarithm of board director meetings, BDdivr: board director diversity, BDind: board of director independence, BDnom: board of director nomination, lnACsize: logarithm of audit committee size and lnACmeet: logarithm of audit committee meetings, all the values are measured by using Malaysian Ringgit.
***, **, * correlation is significant at the level of 1%, 5%, and 10%.

TABLE A2. The result of Breusch and Pagan Lagrangian Multiplier Test, Hausman Test and Wooldridge Test

Model/ Test	Breusch And Pagan Lagrangian Multiplier Test/ P-Value	Suitable Model	Hausman Test/ P-Value	Suitable Model	Wooldridge Test	Result
Model 1	61.37/ 0.0000	REM	10.26 / 0.4180	REM	1.248 /0.2731	Autocorrelation not exist
Model 1a	419.16/ 0.0000	REM	4.81 / 0.9033	REM	1.601 / 0.2158	Autocorrelation not exist
Model 1b	460.70 / 0.0000	REM	3.83 / 0.9546	REM	10.207 / 0.0034	Autocorrelation exists
Model 1c	78.37 / 0.0000	REM	15.99 / 0.1000	REM	2.719 / 0.1099	Autocorrelation not exist

Note: Model 1 examines the relationship between MFRS 139 adoption and intellectual capital performance, Model 1a examines the relationship between MFRS 139 adoption and human capital efficiency, Model 1b examines the relationship between MFRS 139 adoption and structural capital efficiency, and Model 1c examines the relationship between MFRS 139 adoption and customer/relational capital efficiency.

TABLE A3. Normality Test For Continues Variables Before and After Transformations

Variables	Before transformation		After transformation	
	Skewness	Kurtosis	Skewness	Kurtosis
VAIC	3.280	14.517	0.0001	-0.186
HCE	3.6013	19.314	0.0000	2.7959
SCE	12.929	204.117	0.0008	2.7962
CEE	5.960	40.416	-0.0011	2.7973

APPENDIX 2
THE MFRS 139 CLASSIFICATIONS* OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

#	Financial assets	
	Recognitions	Measurement
1	"Fair value through profit and loss" This group ware classified into (1) Financial assets held for trading. (2) Financial assets held for initial recognition.	Fair value measurement and reflect the changes in the profit and loss account.
2	Loans and receivables. This group ware classified into (1) Fixed payments held for trading. (2) Determinable payments held for initial recognition.	Amortized cost through applying an effective interest rate
3	Held to maturity. This group ware classified into (1) Financial assets that are non-derivative with fixed payments held to maturity. (2) Financial assets are did not cover the receivables' and loans' definition. (3) Financial assets that are not held for initial recognition.	Amortized cost through applying effective interest rate.
4	Available for sale. This group ware classified into (1) Financial assets that are non-derivative and available for sale with held for initial recognition. (2) Other financial assets that are not categorized as any of these four groups.	Fair value measurement and reflect the changes in the profit and loss account.

#	Financial liabilities	
	Recognitions	Measurement
1	"Fair value through profit and loss". This group ware classified into (1) Financial assets held for trading. (2) Financial assets held for initial recognition.	Fair value measurement and reflect the changes in the profit and loss account.
2	Other financial liabilities.	Amortized cost through applying an effective interest rate

*This classification was introduced by IAS39/ MFRS 139.

The scope of MFRS 132 (IAS 32 Financial Instruments: Presentation) covers some issue such as (1) explicate the categorization of financial instruments i.e. liability or equity the established by the firm. (2) Clarifying the accounting process of dealing with treasury shares. (3) Clarifying hard stipulations of classification for offsetting balance sheet items i.e. assets and liabilities (4) Determines the methods for categorizing the financial instruments through issues principles of presenting financial instruments i.e. offsetting financial assets and liabilities, equity or liabilities. (MIA 2010; IAS 32.1).

MFRS 7 improves the users' understanding of company's financial reporting regarding the financial risks and managing their risks (MIA 2010). Adds additional new disclosures regard the financial instruments classification (IFRS7.6) to those formerly required through IAS 32 Financial Instruments: Disclosure and Presentation. therefore, the IFRS 7 separates the disclosure matters to those formerly required by IAS and put all financial instruments disclosure in independent standard (i.e. IFRS 7 Financial Instruments: Disclosure). The scope of IFRS 7 covers disclosures of two groups namely the first group is disclosing financial information about the significance of financial instruments. For instance, Statement of financial position, Statement of comprehensive income, and other disclosures (information about the hedge accounting, fair value and the changes in fair value) (IFRS 7.7- 7.29). The second group is information on risks emerging from financial instruments groups. For instance, information about qualitative disclosures, quantitative disclosures, credit risks, market risks, and liquidity risk (IFRS 7.33-7.42).