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A STUDY ON INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE OF SRI LANKAN BANKS

W.Dilini N.Aruppala

Lecturer

Department of Accountancy

Faculty of Commerce and Management Studies

University of Kelaniya, Sri Lanka

dilini@kln.ac.lk

Abstract

Intellectual Capital has been recognized as an important corporate asset which plays an important role for extraordinary financial performance. This study is conducted to examine the impact of Intellectual Capital (IC) on Financial Performance (FP) in the context of Sri Lankan banks for the period of 2008 to 2017. Value Added Intellectual Coefficient (VAIC) methodology developed by Ante Pulic (2000) is employed in this study to form a measurement basis for the IC. Return on Equity (ROE) and Market to Book Value Ratio (M/B) measure the FP of selected banks. The data obtained from corporate annual reports are regressed to measure the impact of IC on FP. Findings of this research indicate that, IC has a significant positive impact on FP of Sri Lankan banks. Hence, outcomes of this research would motivate bankers to apply knowledge management practice in their institutions. Moreover, study provides valuable inputs to the stakeholders and potential investors to assess the value creating capabilities of selected banks. This study emphasize the importance of decision makers' awareness about the IC as a key factor that can enhance a firm's ability to maintain their competitive position.

Keywords - Intellectual Capital, VAIC, Financial Performance, Sri Lankan Banks

Introduction

In the present knowledge based world, knowledge, information, information technologies are the dominating resources. Practitioners and academics also have paid significant attention to the role of knowledge for global competitiveness and they all believe that intangible assets or Intellectual Capital (IC) is the lever for maintaining competitive advantage and sustainable corporate performance. The increasing gap observed between market value and book value of many companies has drawn attention towards investigating the value missing from financial statements. According to various scholars, IC is considered to be the hidden value that escapes financial statements and the one that leads organizations to obtain a competitive advantage (Chen et al., 2005; Edvinsson & Malone, 1997). Additionally, it is believed that the limitations of financial statements in precisely explaining firm value reveal the fact that, nowadays, the source of economic value is the creation of IC and no longer the production of material goods (Chen et al., 2005).

The business and activities in the financial sector require a higher level of knowledge mainly in terms of competence and skills, a high degree of technological innovation, and a high degree of interaction between personnel and clients to generate competitive differentiation strategies based on the level of service and assistance provided to the clients (Veltri & Silvestri, 2011). Therefore, it is necessary for the financial sector companies to invest in their development of human capital, organizational processes and corporate knowledge base in order to make competitive advantage sustainable and durable. Bank, Finance and Insurance sector of Sri Lanka is an emerging sector of the economy with the development of information technology and the other supporting services. Within the finance industry, in recent years, financial institutions, especially those in the banking industry, have experienced a dynamic and competitive environment. Competition at a cross-border scale compels local banks to adjust their competitive position by achieving sustainable Financial Performance (FP). The banking industry is one of the most knowledge-intensive and high performing industries in Sri Lanka. Accordingly, this study is a modest attempt to examine whether conventional performance measures of banking industry

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capture the IC performance or not. Thus, the main objective of this study is to determine the impact of IC on FP of Sri Lankan Banks.

Although many empirical studies have been conducted in the western countries on the subject of IC, relatively little empirical studies have been conducted regarding this subject in Asia and especially in Sri Lanka. Therefore, this study attempts to follow those studies conducted in western countries and see their applicability in Sri Lankan contexts and provide managerial implications and suggestions to banking sector institutions and other knowledge base industries in Sri Lanka to increase their competitive advantage through improving their IC. Findings of this research may serve as a useful input for banking institutions to apply knowledge management in their operations and in addressing the factors affecting IC performance in order to maximize their FP while understanding the contribution of various components in IC in their performance and growth. Also, this extended study is an effort of addressing limitations with further improvements of the previous study of the researcher on “Intellectual Capital and Financial Performance in Sri Lankan Banks” (Aruppala et.al, 2015).

Literature Review

According to Edvinsson and Malone (1997) IC can be defined as the gap that is observed between a firm’s book and market value. Also, Kok (2007) argued that the method for determining the intellectual (intangible) assets of a company is to compare market to book value. These arguments are based on the nature of IC. The intellectual assets of a company are intangible in nature and, thus, do not have a certain shape or an appropriate financial value. They are characterized as “hidden assets”, since it is difficult to identify their contribution to a firm and quantify them in a financial statement (Edvinsson, 1997; Fincham and Roslender, 2003). The growth of the knowledge economy has increased the importance of IC (Cabrita and Vaz, 2006). Researchers in the past decade or two have rigorously participated in coining different terms and experimenting with different methods for accounting the IC. Traditional performance appraisal methods normally only include financial measures although in some cases non-financial measures are also employed.

Researchers categorized all non-physical assets and resources of an organization into several components. Popular components include Human Capital (HC), Structural Capital (SC) and Relation or Customer Capital (RC). HC includes the knowledge and efficiency that employees take with them when they leave the firm. It encompasses knowledge, skills, experience and ability of people. From the organizational perspective SC includes all non-human resources of knowledge like, databases, organizational charts, executive instructions of the processes, strategies, administrative programs, so in other words, the content of such issues is much more higher than its material value (Roos et al., 1997). SC is the part of intangible assets that stays within the firm at the end of the working day. Therefore, development and use of such structural components such as information and information technology it is possible to reduce costs and enhance profitability. RC includes all resources that linked to the external relationships of the firm with customers, suppliers or other stakeholders. Therefore, RC is the knowledge that is embedded in the relationships with any stakeholder that affects the firm’s life. Accordingly, IC is more than simply sum of the human, structural and relation resources of a firm, and value is created through making right connectivity among those resources with appropriate intangible activities.

While there is no generally accepted method for IC measurement, the few dozen methods developed have tended to involve using market capitalization, economic value-added techniques, “scoreboards”, or combinations of these methods (Chan, 2009a, b). However, it was observed through the literature the most of the research studies have used Value Added Intellectual Coefficient (VAIC) introduced by Pulic (1998) to measure the efficiency of IC in the companies.

Later, methods identified by Chan (2009) were categorized into five generic approaches: such as (1) Market capitalization approach; (2) Direct IC measurement approach; (3) Scoreboard approach; (4) Economic value-added approach; and (5) VAIC methodology. The first four approaches are discussed in detail by Chan (2009) in his study. The final approach, i.e. VAIC, which is also termed the “Austrian approach”, and also used by a number of studies (Pulic, 2000, 2001, 2004; Chan, 2009) is discussed and

used in this paper. The VAIC approach provides a standard and consistent measure of IC that can be used to conduct comparative analysis at both the local and international levels. A review of the literature supports the use of the VAIC approach for measuring IC in the financial sector including the banking sector.

When considering FP, it is a subjective measure and explains how well a firm can use assets from its primary mode of business and generate revenues. FP is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. FP can be measured in various facets, and also various methods are used to measure even the same performance criteria. Through the review of literature two methods were identified for this study such as, Return on Equity (ROE) and Market to Book value Ratio (M/B). Most of the researchers who have done research on measuring corporate performance tested with the efficiency of IC have used Return on Assets (ROA), Return on Equity (ROE) and Market to Book value Ratio (M/B) in their researches (Chen et al., 2005, Firer and Williams; 2003, Gosh and Mondel; 2012, Najibullah; 2005, Ranjani and Jayendrika; 2010).

Methodology

A conceptual model guides research by providing a visual representation of theoretical constructs (and variables) of interest. Following Joshi et al. (2013); Maditinos et al. (2011); Ranjani and Jayendrika (2010); Wang and Chang (2005), researcher developed a conceptual model for testing the impact of IC on FP of Sri Lankan banks. Accordingly, the simplified model is presented at Figure 1. The model explains that there is an impact of IC on FP of Sri Lankan banks. Intellectual Capital is considered as independent variable of this model and FP is the dependent variable.

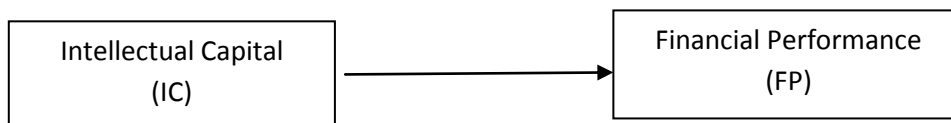


Figure 2: Author Developed Conceptual Model (Simplified)

The VAIC methodology developed by Ante Pulic (2000) forms the underlying measurement basis for the IC in this study. According to Pulic, VAIC is an analytical procedure designed to enable management, shareholders and other relevant stakeholders to effectively monitor and evaluate the efficiency of value addition (VA) by a firm's total resources. Its major resource components consist with Human Capital (HC), Capital Employed (CE) and Structural Capital (SC). Companies with a higher VAIC indicate that they have a higher value creation in using all available resources. This is measured by the VAIC model using Human Capital Efficiency (HCE), Capital Employed Efficiency (CEE) and Structural Capital Efficiency (SCE). Return on Equity (ROE) and Market to Book Value ratio (M/B) ratios are used to measure the FP of selected banks. Accordingly two research models employed in this study. Further, to analyze data of this study correlation analysis and multiple regression analysis were used.

Following are the two research models used in this study.

Model 01

$$ROE = b_0 + b_1VAIC + e$$

Model 02

$$M/B = b_0 + b_1VAIC + e$$

Where, *ROE* = Return on Equity, *M/B* = Market to Book Value Ratio, *b₀* = Intercept term
b₁ = Coefficient of IC, VAIC = Value Added Intellectual Coefficient and *e* = error term

Corporate annual reports of all selected banks and other publications were used to collect data. The considered period of this study is ten years from the year 2008 to 2017. However some banks were

unable to provide enough information on some of the selected variable. Thus researcher had to use bank web sites, other publications and corporate reports to gather data for the research.

Data Analysis and Discussion

This study employs regression analysis to identify the impact of IC on FP. Accordingly two regression models were developed such as, ROE – IC model and M/B – IC model. With the findings of ROE – IC Model, the impact of IC on Return on Equity was tested. As the value of the correlation coefficient is 0.989, there is a strong positive relationship among IC and ROE. The coefficient of determination (R^2) is 0.978 which indicates that 97.8% of ROE is explained by IC. This indicates the researcher that IC is a significant factor which determines the FP of Sri Lankan banks. Findings of the regression analysis reveal that IC as a model has a significant positive impact on ROE of Sri Lankan banks. The results of M/B – IC model which is developed to identify the impact of IC on Market to Book Value ratio of Sri Lankan banks depicts that there is also a strong positive correlation (0.877) between IC and M/B ratio. Further 76.8% of market to book value ratio is explained by IC. That signals the researcher that compared to ROE – IC model there would be some other variables which affects the M/B ratio than IC of Sri Lankan banks. When analyzing the coefficients of M/B – IC model except SCE other two components have significant positive impact on M/B ratio of Sri Lankan banks. As similar to the findings of ROE – IC model SCE has a negative impact on M/B of Sri Lankan banks. This negative value is also statically significant at 0.1 level of significance. Accordingly, the results of regression analysis of both models indicates that IC has a positive impact on FP of Sri Lankan banks.

Conclusions

Based on the results of the correlation analysis it can be concluded that IC has a positive relationship between FP of Sri Lankan banks. Accordingly when the level of efficiency of IC increases FP is tend to be increased. The level of relationship may change according to the type and existence of different IC components. Results of multiple regression analysis depict that IC has a significant positive impact on ROE and M/B ratio. When comparing the findings with past research findings researcher was able to observe more consistencies. Chen et al. (2005) earlier explored whether VAIC had any relationship with FP, especially with ROE and ROA. In their findings, based on Taiwanese listed companies, VAIC, and ROE and ROA are positively interrelated. Paula and Antti (2007) has found IC had contributed positively to both financial and non-financial performance considering several companies in the major industries in Finland. Thus, findings of this study also propose a similar conclusion for Sri Lankan banking sector as there is a significant positive relationship between IC and FP.

Implications of the Study

For theoretical implications, it is important to note that ROE and M/B ratio are embedded in a firm's tangible assets (e.g. land, factory, machinery, inventory, and working capital) and are also part of a firm's products and services delivered to its customers. Therefore, IC cannot be separately considered from revenue generation and a firm's long-term profitability. In other words, the capitals relating to human, structure, and innovation essentially form a foundation for a firm's ability to effectively utilize tangible assets for producing products or providing services to its customers (Phusavat et al., 2011).

Considering the practical implications of the study, Sri Lankan banks employ a considerable level of IC and also IC has a strong positive impact on FP of Sri Lankan banks. However the level of investment on different components of IC is at different levels when comparing among banks. It implies that the consideration on IC by selected banks is at different levels. As it was observed that high level of CEE always enhance the level of FP of banks researcher can decide that, in Sri Lankan banks the efficiency of utilizing capital employed by shareholders are at the satisfactory level. Sri Lankan banks may employ different strategies to enhance the invested capital. Further, findings signals that HC of banks also has a significant impacts on FP. This may be resulted through the employment of high skilled labour in most of the banks of Sri Lanka. Further with the development of information technology and other supporting services banks may tend to provide enough training and development facilities for

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managerial and operational level employees. Accordingly allocation of funds on enhancing the efficiency and productivity of human capital of banks are at a considerable level.

Also, bankers should identify that VAIC would be a potential benchmarking parameter for them as firms in an emerging sector of Sri Lanka. By focusing on benchmarking, a bank's database and information systems have to deal more than required accounting data as a publicly traded entity. The evaluation of how other data types be collected and become part of a company's performance report is needed. It is generally accepted that accounting information alone may not provide an entire picture of operational performance for bankers and industrial management. Further the service sector investors tend to devalue the companies with high investment in HC as they are putting more value on the banks with higher investment in physical capital. Therefore it is understood that HC is also more valuable part included in IC. As it is considered as a more important asset to the companies, a valuation model (a method) for HC to be introduced.

Further the attention on the bankers on SC to be improved in Sri Lanka. Thus it can be concluded that a new performance measure and a valuation model for IC to be developed by accounting professionals as to obtain the attention of the bankers and other investors on IC of firms. Moreover, findings reveal that efficiency of invested capital has a considerable contribution towards FP. This indicates that, Sri Lankan banks highly consider on managing funds efficiently and effectively.

The findings of this study have implications for banking sector organizations as it provides them with an opportunity to critically analyze the contribution of human capital, structural capital and physical capital to their organization and will aid the design of strategies for enhanced corporate performance. This will also help management of companies in other economic sectors, especially those in finance and leasing businesses, knowledge-based industries to understand the contributions of various components of IC to their business growth. Accordingly, this study may aid decision makers be aware of the importance of IC as a key factor that can enhance a firm's ability to maintain their competitive position.

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