The Influence of Intellectual Capital on Financial Performance: A Study on Banking Companies listed in Indonesia Stock Exchange

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ABSTRACT

The purpose of this study is to analyze the influence of intellectual capital on financial performance, partially and simultaneously. The population of this study is 25 banking companies which are listed in Indonesia Stock Exchange (IDX) in 2008-2013 periods.

The research method used in this study is descriptive method (descriptive survey) and explanatory method (verification survey), while the data analysis method used is Data Panel Regression by using software Eviews 7 and 9. The result of this study showed that Human Capital Efficiency, Structure Capital Efficiency, and Capital Employed Efficiency simultaneously had positive and significant influence on financial performance, with contribution (R^2) equal to 84.9% and 15.1% influenced by other factors, however Capital Employed Efficiency partially had significant influence to determine Net Interest Margin. Contribution to the world of banking needs to observe the decision of Capital Employed Efficiency to improve human resources in upgrading bank performance.

Keywords: Human Capital Efficiency, Structure Capital Efficiency, Capital Employed Efficiency, Net Interest Margin

1. INTRODUCTION

Banking businesses that function as financial intermediaries, if they can operate efficiently, they will drive a country's economic growth (Levine, 1997). One indicator that can be used in measuring bank efficiency is Net Interest Margin (hereinafter abbreviated as NIM). High Net Interest Margin is often associated with the presence of inefficiencies in the banking system, especially in developing countries, because the costs arising as a result of inefficiencies are transferred to bank customers with high interest rates (Fry, 1995; Randall, 1998; and Barajas et al, 1999).

Unlike the lower NIM, the social costs expected by the public for banking intermediation activities will also be low.

A high NIM can be seen from two sides. First, high NIM reflect low levels of banking efficiency and the banking market is not competitive. Second, high NIM reflect high banking and asymmetric information (Claeys and Vennet, 2008). Under certain conditions, high NIM are indicated by high risk premiums, while conditions of increasing competition will encourage speculative behavior of the banking system which can lead to financial instability

(Hellman, Murdock and Stiglitz, 2000).

Banking Business, according to Rose (2002), is a business sector that uses a lot of resources in the field of management and staff which are Intellectual Capital resources (hereinafter abbreviated as Intellectual Capital) in order to provide financial services to those who become banking industry meitra binis in generating income for the Bank.

Studies of the relationship between Intellectual Capital (IC) and financial performance have been carried out in many countries. We can refer to research conducted in Canada and the United States [Bontis, (2002), Belkaoui, (2003)], China [Chen, (2004)], Malaysia [Bontis, (2000), Chen, (2005)] and Taiwan [Chen, (2005)]. Understanding company performance leads to an analysis of different businesses from investment. At present, it is necessary to take into account other types of investments besides physical. According to Zhang & Zhu & Kong, (2006), human capital is the main component of IC which can affect financial performance, besides research related to IC in the context of decision making, especially its use to investors in the capital market (Lev and Sougiannis, 1996; Cazavan-Jeny, 2004; Casta et al., 2005; Lev et al., 2007) IC can be used to increase the market value of a company that has attracted the attention of many researchers, as did Lev, (2001), Chen, Cheng & Hwang, (2005) Foray, (2000) describes intangible resources by relating several factors, such as knowledge management and service development. Despite the increasing recognition of ICs in encouraging corporate value and competitive advantage, an appropriate step from the company, is theoretically intellectual, [Chen, Cheng & Hwang, (2005); Goldfinger, (1994); Bounfour, (1998a); Pierrat & Martory, (1996)], and research conducted by Pulic, (1998) show that capital employed and intangible capital correlate with the company's market value. Widening the gap between the company's market value and book value has led to extensive research to explore intangible resources omitted from the financial statements, Lev, (2005).

2. FORMULATION OF THE PROBLEM

Based on the research background, the formulation of the research problem is as follows:
1. Does the Human Capital Efficiency (HCE) partially affect the NIM?
2. Does the Structure Capital Efficiency (SCE) partially affect the NIM?
3. Does the Capital Employed Efficiency (CEE) partially affect the NIM?
4. Does the Human Capital Efficiency (HCE), Structure Capital Efficiency (SCE), Capital Employed Efficiency (CEE) jointly affect the NIM?

3. LITERATURE REVIEW

Net Interest Margin

According to Zhou and Wong (2008), the bank's NIM is the ratio of net interest income to total bank assets. While according to Nijhawan and Taylor (2005) defines NIM as one of the most important indicators to determine bank profitability. Because of the ratio of NIM to the soundness of the bank in the same direction, when the NIM ratio is high, the level of health is high. If the loan interest income rises, it will affect the NIM increase, so that the profitability of the bank will also increase. The high and low NIM of a bank is strongly influenced by several factors, namely factors originating from the internal bank and factors that are outside the control of the bank which are also called external factors. External bank factors affecting the NIM are as well as macroeconomic conditions, namely inflation and exchange rates. While internal bank factors such as credit risk, operating cost, risk aversion, and transaction size.

NIM is the ratio between net interest income to total credit given. This ratio is used to measure the ability of the bank's management in managing earning assets to generate net interest income. Net interest income is derived from the interest received from loans given less the interest expense from the source of funds collected (Muljono, 1999). This ratio can be calculated by the following formula (BI Circular Letter No.6 / 23 / DPNP dated May 31, 2004)
:

$$\text{NIM} = \frac{\text{Interest income} - \text{interest expense}}{\text{earning assets (credit)}}$$

Intellectual Capital

Bontis (2000) states that the term IC was first proposed by Galbraith in 1969, who wrote a letter to his friend Michael Kalecki. Galbraith writes "I wonder if you realize how much of the world we have around." (2000) in Margaretha and Rakhman (2006) explained that IC includes all processes and assets that usually do not appear on the balance sheet and all intangible assets (trademarks, patents, and brands) that have been considered against modern accounting methods that are included in in it is the contribution of human knowledge itself as a company resource. Market and technology developments also influence the increase in the value of stock capitalization in knowledge based industries. This causes a difference between the book value and the share capitalization value which indicates the occurrence of missing values in the financial statements.

Pulic (2001) introduced the concept of VAIC ™ (Value Added Intellectual Coefficient). VAIC ™ which is to assess its ability in the future from an organization, in the concept of VAIC Value Added which is defined as "the preffered measures of wealth created by activities of a company" (British Ministray of trade and industry) is calculated based on the difference between Input and output.

$$\textbf{VA}_{it} = \textbf{OUTPUT}_{it} - \textbf{INPUT}_{it}$$

Output$_{it}$ = Total income
Input$_{it}$ = Total Operating Costs (except Personnel Costs)
VA$_{it}$ = *Value Added*

According to Pulic (2004), the value of the efficiency of Human Capital, Structural Capital and the efficiency of structural capital can be calculated as follows:

$$\textbf{SC}_{it} = \textbf{VA}_{it} - \textbf{HC}_{it}$$

SC = *Capital Structure*
VA = *Value Added*
HC = *Personnel costs*

Human Capital Efficiency

Mayo (2000) in Endri (2011) stated that human capital has five components, namely individual capability, individual motivation, leadership, organizational climate, and workgroup effectiveness. Each component has a different role in creating a human capital company which ultimately determines a company's value.

Human Capital Efficiency (HCE) is a Value Added Index produced per investment in Human Capital. The term Human Capital Efficiency (HCE) was introduced by Pulic (1997) in the concept of VA1C ™. Human Capital Efficiency is calculated by combining the value added value generated by a company with the value of its human capital investment. If

formulated into a form of calculation, the formula for Human Capital Efficiency (HCE) is as follows:

$$HCE_{it} = VA_{it} / HC_{it}$$

VA = *Value Added*
HC = Investasi *Human Capital* (Personnel Expenses)
HCE = *Human Capital Efficiency*

Structural Capital Efficiency

Bontis (1998) in Astuti (2005) states that structural capital arises from organizational processes and values, which reflect the internal and external focus of the company, plus the development and renewal of values for the future. If an organization has a bad system and procedure in carrying out its activities.

Structural Capital Efficiency (SCE) is obtained by dividing the value of Structural Capital with Value Added value. While the value of Structural capital is obtained by subtracting the Value Added value from the value of Human Capital. If formulated into a form of calculation, the formula for Structural Capital Efficiency (SCE) is as follows:

$$SCE_{it} = SC_{it} / VA_{it}$$

SC   = *Structure Capital*
VA   = *Value Added*
SCE = Structurel Capital Efficiency,

Capital Employed Efficiency

Capital Employed is usually used to measure Return on Capital Employed (ROCE). By comparing the productive assets and the results obtained from the business generated from these assets in a time range (period), we can analyze the ratio comparison between the number of Capital Employed and the profits or results obtained, and also see whether the products or services we selling is already profitable or vice versa. Pulic (1997) includes Capital Employed as one of the main elements forming VAIC ™

Capital Employed Efficiency is calculated by combining the value added value generated by a company with the investment value of its Capital Employed. If formulated into a calculation form, the Capital Employed Efficiency (CEE) formula is as follows:

$$CEE_{it} = VA_{it}/CE_{it}$$

CEE = *Capital Employed Efficiency*
VA   = *Value Added*
CE   = *Capital Employed* or the amount of equity

4. METHODOLOGY

The research method is a series of steps that must be taken by researchers to find problem solving that has been formulated and obtain the data needed. According to Sugiyono (2010: 5) research methods are "scientific ways to get data with specific purposes and uses. In this study the method used is descriptive method (descriptive survey) and explanatory method (survey verification). The object of the research was 25 banking companies listed on the Indonesian stock exchange during 2008 to 2013
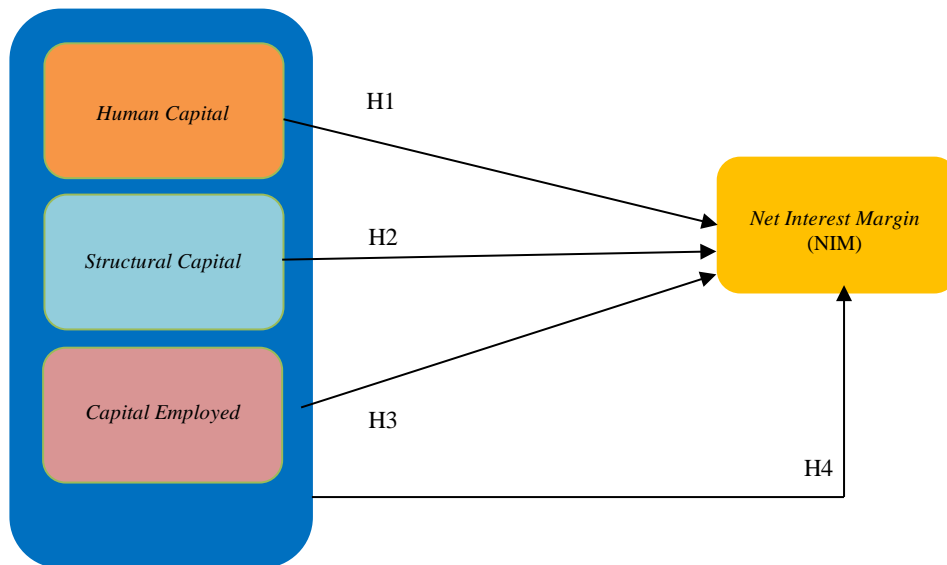
Framework

Figure 1.
Framework

Operationalization of Variables

Independent variables in this study are:

Human Capital Efficiency (HCE),

HCE shows how much Value Added (VA) is obtained from spending money on employees. If a Human Capital unit can generate more income for a company, the company is able to utilize Human Capital better. HCE is an indicator of the quality of human resources owned by the company and its ability to produce Value Added.

$$HCE = VA / HC$$

Structure Capital Efficiency (SCE)

SCE Ratio measures the amount of Structure Capital (SC) needed to produce Value Added (VA) and is an indication of how Structure Capital (SC) is successful in carrying out the value creation process in the company.

$$SCE = SC / VA$$

Capital Employed Efficiency **(CEE).**

The CEE shows how many VAs can be created by one unit of capital employed (CE). If one unit of CE can produce a greater return on a company then the company is able to utilize CE better. Better utilization of CE is part of the company's Intellectual Capital. So that CEE becomes an indicator of the company's intellectual ability to better utilize the Capital Employed.

$$CEE = VA / CE$$

Dependent variables in this study are

Net Interest Margin (NIM)
Referring to the banking financial performance standards commonly used by institutions to assess the level of Bank soundness, the financial ratios used are based on several financial ratios. The financial ratio used is NIM Data will be obtained through the financial statements of banks in Indonesia, which are issued by each bank and obtained through the IDX.

$$NIM = \frac{\text{Interest income} - \text{interest expense}}{\text{Earning Assets (credit)}}$$

Design of Hypothesis Analysis and Test
The following is a regression model with multiple regression of the hypotheses previously stated:

$$NIM_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + e_{it}$$

Where :
  NIM = *Net Interest Margin* is a measure of financial performance
  HCE = *Human Capital Efficiency*
  SCE = *Structure Capital Efficiency*
  CEE = *Capital Employed Efficiency*

Human Capital Efficiency (HCE), *Structure Capital Efficiency (SCE),* ***Capital Employed Efficiency (CEE),*** berpengaruh positif terhadap *Net Interest Margin* (NIM)

5. ANALYSIS TOOL

Regression using panel data is called the panel data regression model. There are several benefits obtained by using panel data. First, panel data is a combination of time series data and cross section data capable of providing more data so that it will produce a greater degree of freedom. Second, combining information from time series data and cross sections can overcome problems that arise when there is an ommited-variable problem. Analyzer used by Software Eviews-7 and 9.

Results of Analysis Findings

Model Estimation Regression Testing *Net Interest Margin (NIM)*

Table 1
The Result of regression model with Dependent NIM Variables

No.	Metode	Train	Result
1	Chow Test	Common Effect vs Fixed Effect	Fixed Effect
2	Hausman Test	Fixed Effect vs Random Effect	Fixed Effect
3	LM Test	Common Effect vs Random Effect	Random Effect

Data Proses

The model used in this study is the fixed effect model. As we have seen in the Fixed Effect or Fixed Effect Model, differences in individual characteristics and time are accommodated in the intercept so that the intercept of each company varies as well as the constants held differently seen in table 2.

Regression Model with Dependent NIM Variables

Table. 2
Regression Results for NIMs

Dependen Variabel	*Net Interest Margin* (NIM)	
	Coefficien β	**p-value**
α	**-**	0.0000
HCE	0.002640	0.0811
SCE	-0.007372	0.0000
CEE	0.012668	0.0025
R-Square	0.849479	
Sig	0.000000	

Table 2 above illustrates the results between financial performance (NIM) with HCE, SCE and CEE. Our findings find that all three independent variables have a positive relationship with a significant 95% NIM level. R squared is 84.9% which indicates that HCE, SCE and CEE have contributed to changes in the NIM. The standard coefficient for each variable against Nim can be explained as follows:

H1: HCE has no significant positive effect on the NIM and hypothesis 1 is rejected.

H2: SCE has a significant negative effect on NIM and hypothesis 2 received, which means that every increase of IDR 1 SCE will decrease 0.003 NIM.

H3: CEE has a significant positive effect on the NIM and the 3rd hypothesis received, which means that every increase of IDR 1 CEE will increase 0.013 NIMs.

H4: HCE, SCE and CEE together contribute 84.9% in explaining changes in NIM while 15.1% is influenced by other variables not discussed in this study with a significance level of below 5%.

6. CONCLUSION

In the dependent research model variable Net Interest Margin (NIM) there are four acceptable hypotheses, namely hypotheses 1,2,3 and 4

1). Based on the results of testing hypothesis 1 shows that partially variable Human Capital Efficiency (HCE) has a positive effect not significant on NIM variables, so hypothesis 1 is rejected (table 2).

2). Based on the results of testing hypothesis 2 shows that partially variable Structure Capital Efficiency (SCE) has a significant negative effect on NIM variables so that hypothesis 2 is accepted (table 2) ..

3). Based on the results of testing hypothesis 3 shows that partially variable Capital Employed Efficieny (CEE) is significantly positive for the variable NIM

4).Berdasar hasil pengujian hipotesis 5 menunjukan bahwa secara bersam-sama variabel HCE, SCE, CEE, berpengaruh signifikan terhadap variabel NIM sehingga

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[86] Keputusan Ketua Badan Pengawas Pasar Modal dan Lembaga Keuangan Nomor: Kep-134/BL/2006 *tentang kewajiban penyampaian laporan tahunan bagi emiten atau perusahaan publik.*