The Impact of Intellectual Capital on Investors' Capital Gains on Shares: An Empirical Investigation of Thai Banking, Finance & Insurance Sector

B.A. Ranjith Appuhami
Department of Accounting, University of Sri Jayewardenepura, Sri Lanka

[Abstract] The purpose of this article is to investigate the impact of the value creation efficiency on investors' capital gains on shares. To investigate the impact of corporate value creation efficiency on investors' capital gains, the author used the data collected from listed companies in Thailand's stock market and Pulic's (1998) Value Added Intellectual Coefficient (VAIC TM) as the measure of intellectual capital and a developed multiple regression model. The empirical research found that firms' intellectual capital has a significant positive relationship with its investors' capital gains on shares. The findings enhance the knowledge base of intellectual capital and develop a concept of intellectual capital in achieving competitive advantages in emerging economies such as Thailand's.

[Keywords] Intellectual capital; Capital gain; banking; finance and insurance sector

Introduction

An extensive research has been carried out on Intellectual capital, since the financial accounting does not explain the increasing gap between a firm's market value and its book value (e.g. Lev and Zarowin, 1999; Lev, 2001; Lev and Radhakrishnan, 2003). Simply, a firm's market value exceeding its book value has been defined as intellectual capital (Edvinsson and Malone, 1997). The intellectual capital of a firm plays a significant role in the modern approach of value creation. Especially, firms in technology and service industries recognize intellectual capital as the major knowledge base that contributes to the creation of a competitive advantage for the firm (Huei-Jen Shiu, 2006). The determinants of intellectual capital, such as human capital and structural capital created in customers, process, databases, brands, and systems (Edvinsson and Malone, 1997), have been recognized as the factors that determine corporate well being (Bornemann 1999; Pulic 2000; Firer & Williams 2003; Mavridis 2004). The theory of stakeholder view (Donaldson and Preston, 1995), which demonstrates that stakeholder relationship constitutes all the forms of relationship of a firm with its stakeholders, such as investors, government, customers, employees, suppliers and general public etc., is similar to the concept of intellectual capital.

Even though intellectual capital is recognized as a major corporate asset capable of generating sustainable competitive advantages and superior financial performance (Barney, 1991), it is still difficult to find an appropriate measure of intellectual capital. Pulic (2000a, b) proposed Value Added Intellectual Coefficient (VAIC) as an indirect measure of efficiency of value added by corporate Intellectual Capital. The VAIC method provides the information about the efficiency of tangible and intangible assets that can be used to generate value to a firm (Pulic, 2000a, b). Financial capital (monetary and physical), human capital, and structural capital have been recognized as major components of VAIC. A higher value for VAIC shows a

greater efficiency in the use of firm capital, since VAIC is calculated as the sum of capital employed efficiency, human capital efficiency, and structural capital efficiency. The composition of these three components of capital, which are similar to the concept of Skandia Navigator (Bontis, 1999), vary from industry to industry and from firm to firm, depending on their nature of business and strategy. These three components of capital determine the degree of value added by each product and/or service.

The research is based on the banking, finance, and insurance industries in Thailand. The dividend policy of most of the companies in these industries is to pay no dividend or a very small amount. Thus, the research examines the capital gain (instead of market return, which includes both capital gain and dividend yield) in relation to VAIC and its components. Capital gain refers to the profit earned by investors by selling shares in the secondary market (Ross, Westerfield, Jaffe, 2005). In addition to dividends, capital gain is one of objectives of investors. Investors sell shares when the market price is higher than the purchase price in order to earn capital gain. Thus, investors are motivated to buy shares of firms which have increasing market price. Likewise, firms with higher performance have increasing market price.

The objective of this research is to empirically investigate the relationship between firms' intellectual capital and capital gain using banking, finance and insurance companies listed in Thailand's stock market. Following many other researchers, including Firer and Williams (2003), this study also uses AVIC as an aggregate measure of firms' intellectual capital.

This paper contributes to existing literature as follows: first, the research will provide the evidence of the impact of intellectual capital on investors' capital gain on shares in the banking, finance, and insurance sector by using data from listed companies in Thailand. The findings of the research will enhance the importance of intellectual capital in emerging economies.

Second, the research indirectly provides evidence of the relationship between intellectual capital and corporate performance. Capital gains earned by investors significantly depend on firm performance. Investors in the market place tend to demand shares of firms having higher performance than those with average performance in the market.

Finally, the paper provides evidence of application of VAIC as an aggregated, standardized measure of corporate intellectual ability, specifically, the explanatory power of VAIC and its components towards share price changes in the banking, insurance, and finance industries in Thailand, since investors' capital gain is directly related to share price changes.

The remainder of this paper describes the literature review in respect to Intellectual Capital, VAIC, and its applications in various countries and industries. The following section highlights methodology of the research, including research framework and data collection tools and hypothesis. The final section will conclude with research results and suggestions of VAIC application.

Literature Review

Existing literature has recognized that in almost all the models of intellectual capital, the market value of a firm, result from two dimensions. According to the concept of Skandia Navigator Value Scheme (Edvinsson, 1997, Edvinsson and Malone, 1997) market value is generated from two types of capital: financial capital (both monetary capital and physical capital) and intellectual capital, shown in Figure 1. Intellectual capital results from both human capital and structural capital (Edvinsson, 1997, Edvinsson and Malone, 1997).

There is no precise definition of human capital, as it depends on the nature of job, situational factors and the nature of a firm. Robert H. Ashton, (2005) pointed out that human capital consists of personnel attributes, such as knowledge, skill, and experience. The concept of Skandia Navigator (Bontis, 1999) described that human capital would disappear as employees leave the firm, since human capital depends on capabilities, such as competence, commitment, motivation, loyalty etc, of employees. According to F. Tunc Bozbura (2004), human capital can be recognized as an accumulation of employees' general knowledge, leadership skills, risk taking abilities, and problem solving abilityies The human capital can be developed so as to enhance the efficiency of firms' tangible and intangible assets (Fitz-enz, 2001). Companies invest significant amounts of their money in human capital development in order to achieve competitive advantages in the global market (Ulrich, 1997).

 According to the concept of Skandia Navigator Value Scheme (Edvinsson, 1997, Edvinsson and Malone, 1997), major parts of structural capital are customer capital and organizational capital, which contribute significantly to the changes in market value of a firm (Lev and Radhakrishnan, 2003) (as shown in Figure 1). Structural capital consists of both internal value drivers of a firm, such as processes, routines, databases, customer files, software, manuals, and organizational structures and external value drivers of this firm, such as relationships with customers, suppliers, and alliance partners (Robert H. Ashton, 2005). Given the fact that structural capital does not disappear from the firm as does the human capital, the management of a firm should try to transform the firm's human capital into structural capital, since the value of the structural capital holds a higher percentage of firm value than the value of human capital (Edvinsson, 1997). The last dimension of a firm's market value is financial capital, which consists of both monetary and physical capital (Edvinsson, 1997, Edvinsson and Malone, 1997). Financial capital can be referred to as capital employed by a firm.
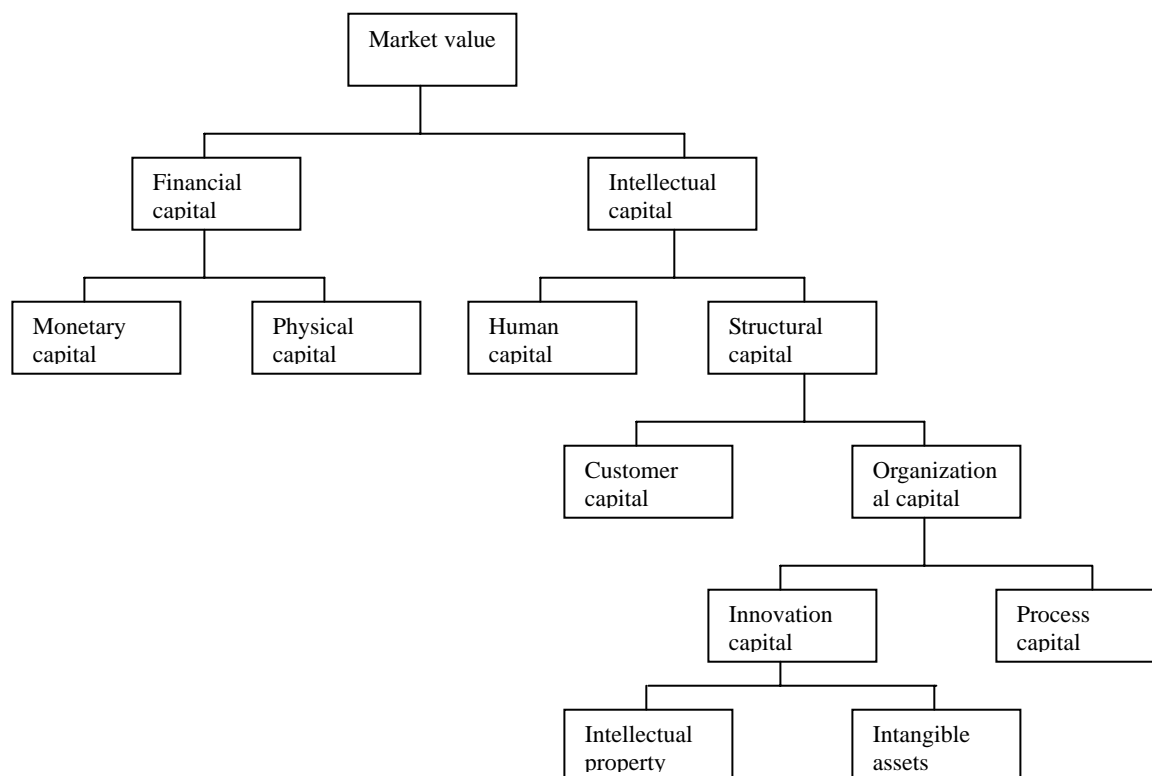
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                          ┌──────────────┐
                          │ Market value │
                          └──────┬───────┘
              ┌──────────────────┴──────────────────┐
      ┌───────┴────────┐                    ┌────────┴─────────┐
      │   Financial    │                    │   Intellectual   │
      │    capital     │                    │     capital      │
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  ┌─────┴─────┐ ┌────┴─────┐      ┌────────┴────┐      ┌─────────┴────┐
  │ Monetary  │ │ Physical │      │    Human    │      │  Structural  │
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                                                  │  Innovation  │          │    Process       │
                                                  │   capital    │          │    capital       │
                                                  └───────┬──────┘          └──────────────────┘
                                              ┌───────────┴────────────┐
                                      ┌───────┴──────┐        ┌─────────┴───────┐
                                      │ Intellectual │        │   Intangible    │
                                      │   property   │        │    assets       │
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Figure 1: Skandia Value Scheme
Source: Adapted from Edvinsson (1997)

Ante Pulic (1998) developed VAIC to help managers enhance their firms' performance. The greater the value of VAIC, the more efficiently a company manages its resources. Unique measurements provided by VAIC can be used for comparative analyses across various companies, time periods, and industries, both internationally and locally, to develop business strategies. Over the years, VAIC has been used in many academic research publications (e.g. Firer and Williams, 2003) and business sectors (e.g. Public, 1998, 2000a, b). Williams (2001) discovered that companies with higher levels of VAIC try to reduce their disclosure in respect to intellectual capital, since it might reduce competitive advantages.

Pulic (2000a, b) identified that firms' market values have been created by capital employed (physical & financial) and intellectual capital. Pulic (2000b), also, found that there was a significant relationship between the average value of AVIC and firms' market value by using 30 UK companies from 1992 to 1998. Firer and Williams (2003) adopted the VAIC method to investigate the impact of intellectual capital on traditional measures of corporate performance, such as ROA, Turnover, ROE, and market value to book value ratio, using 75 public companies in South Africa. Mind, Shu, and Yuhchang (2005) found that firms' intellectual capital have a positive impact on market value and financial performance and identified the positive impact of R&D expenditure on profitability and firm value using a sample of listed companies in Taiwan. The latest research by Huei-Jen Shiu (2006) suggests, using the data of 80 listed technological firms in Taiwan, that firms could transfer its intangible assets, such as

intellectual capital, to high-value added products or services.

Research Framework
Figure 2 depicts the theoretical framework of research. H2 and H1 represent hypotheses of the research showing the relationships between intellectual capital and firms' capital gain on shares for investors.
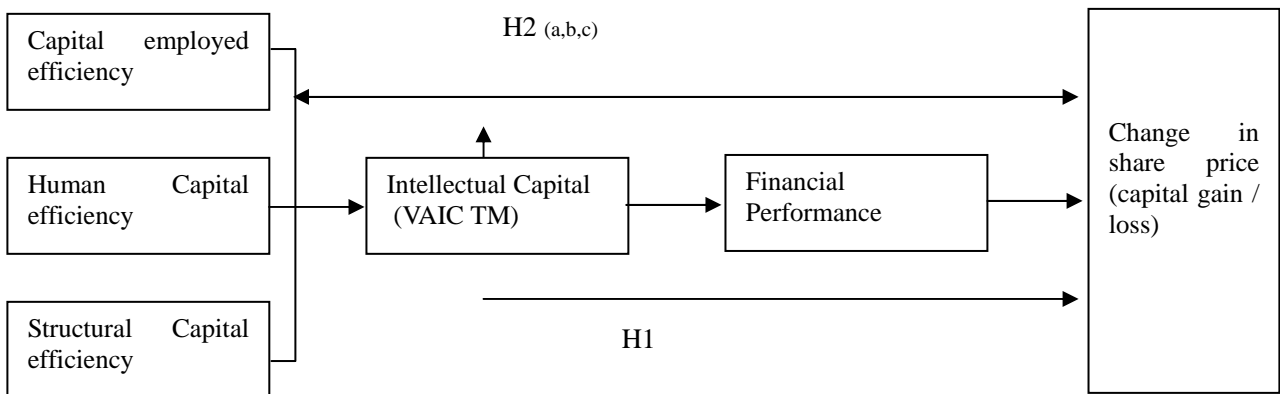
Figure 2: Theoretical Framework of Research

Hypotheses
The market valuation or firm value is the basis on which to calculate capital gain. Thus, research hypotheses can be developed as follows:

H1, Firms with higher intellectual capital (VAIC^{TM}) generate a higher rate of capital gain
H2a, Firms with higher human capital efficiency generate a higher rate of capital gain
H2b, Firms with higher capital employed efficiency generate a higher rate of capital gain
H2c, Firms with higher structural capital efficiency generate a higher of capital gain

Data and Methodology
Data Description
Data for this research were collected from annual reports in 2005 and share market trading information in 2005 of 33 banking, insurance, and finance companies in Thailand. Income statements, balance sheets, cash flow statements and statements of changes in equity included in annual reports were important sources for data collection. The banking, insurance, and finance sector is a rapidly growing competitive service sector in Thailand. Intellectual capital, such as human capital, has been recognized as one of the major determinants of competitive advantages in this sector. Companies with missing data are excluded from the study. In calculating shares' capital gain for the year 2005 for each company, this study uses total of monthly returns.

Research Design
The VAIC Method
The value added intellectual coefficient (VAIC^{TM}) as a measure of firm intellectual capital was found by Pulic (1998). Boremann Manfred (1999) developed it further to comply with

additional variables. The VAIC method is based on financial statements of a firm in order to calculate the efficiency coefficients for three types of capital. Though VAIC uses accounting data, it does not focus on the cost of the firm. It does focus on the efficiency of resources that create values to the firm (Pulic 2000, Boremann 1999). Thus, firm managers can use VAIC to monitor and evaluate firms' assets and, accordingly, develop business strategies in order to achieve competitive advantages. VAIC of a firm (i) can be calculated using the following five steps:

Step 1
Calculation of value added (VA_{it}) by all the resources of the firm during the 't' period of time.
Where,
$OUTPUT_{it}$ = Total income form all products and services sold during the period of t

$$VA_{it} = OUTPUT_{it} - INPUT_{it} \qquad (1)$$

$INPUT_{it}$ = All expenses (except labor, taxation, interest, dividends, depreciation) incurred by firm for the period of t. The Calculation of value added by a firm during a particular period is based on the Theory of stakeholder view (Donaldson and Preston, 1995). The stakeholder theory suggests that everyone who affects and is affected by what a firm does has an interest (stake) in the firm. In this context, "stakeholder" includes not only venders, employees, customers, directors, and government, but also members of community as a whole. Therefore, value added by a firm to stakeholders is a broad performance measurement of the firm rather than accounting profit, which calculates return attributable to shareholders of the firm. According to Riahi- Belkaoui (2003), value added by a firm during a particular period can be calculated by the formula (2)

$$R = S - B - DP - W - I - D - T \qquad (2)$$

in which R is retained earnings for the period; S is net sales revenue; B is cost of good sold plus all expenses (except labor, taxation, interest, dividends, depreciation); W is employees' salaries and wages; I is interest expenses; D is dividend paid to shareholders; and T is taxes. The above formula (2) can be re-arranged as follows:

$$S - B = DP + W + I + D + T + R \qquad (3)$$

The left-hand side of the above formula shows the total value generated by the firm during a particular period, and the right-hand side shows how the firm has distributed its generated value among stakeholders, such as employees (salaries and wages- W); debt holders (interest- I); government (taxes- T); and shareholders (dividend, retained earning and provision for depreciation- D, R, DP). Therefore, formula (3) can be re-arranged to calculate value added by the firm, asfollows (4):

$$VA = DP + W + I + D + T + R \qquad (4)$$

VA_{it} = I_{it} (total interest expenses) + DP_{it} (depreciation expenses) + D_{it} (dividends) + T_{it} (corporate tax) + R_{it} (profits retain for the year)

Following Pulic (2000a, b) and Firer and Williams (2003), the following steps show the calculation of Value Added Intellectual Coefficient (VAIC) and its components, such as coefficient of capital employed, coefficient of human capital and coefficient of structural capital.

Step 2
The calculation of Value Added Capital employed Coefficient ($VACA_{it}$)

$$VACA_{it} = VA_{it} \, / \, CA_{it} \qquad\qquad (5)$$

Where,
CA_{it} = Capital Employed = Physical Assets + Financial Assets
          = Total Assets - Intangible Assets at end of 't' period
$VACA_{it}$ = The value created by one unit of capital employed during the 't' period

Step 3
Calculation of Value Added Human Capital Coefficient ($VAHC_{it}$)

$$VAHC_{it} = VA_{it} \, / \, HC_{it} \qquad\qquad (6)$$

Where,
HC_{it} = investment in Human Capital during the 't' period or total salary and wage including all incentives
$VAHC_{it}$ = Value added by one unit of Human Capital invested during period of 't'

Step 4
Calculation of the value added structural capital coefficient ($STVA_{it}$)

$$STVA_{it} = SC_{it} \, / \, VA_{it} \qquad\qquad (7)$$

Where,
SC_{it} = Structural capital ($VA_{it} - HC_{it}$)
$STVA_{it}$ = the proportion of total VA accounted by structural capital.

Step 5
Calculation of Value Added Intellectual Coefficient ($VAIC_{it}$)

$$VAIC_{it} = VAHC_{it} + VACA_{it} + STVA_{it} \qquad\qquad (8)$$

Where,
$VAIC_{it}$ = Indicate corporate value creation efficiency on firm resources.

Regression Model
The study uses the multiple linear regression model to identify the relationship between investors' capital gain on shares and VAIC and its components, such as VAHC, VACA, and STVA. Any other independent variable has not been added to the equation in order to investigate full explanatory power of VAIC and its components.

$$MR_{it} = \alpha_0 + \alpha_1\,VAIC_{it} + \alpha_2\,VAHC_{it} + \alpha_3\,VACA_{it} + \alpha_4\,STVA_{it} + \varepsilon_{it}$$

MR$_{it}$ = Investors' capital gain on shares of firm 'i' during the 't' period. Capital gain on shares is only dependent variable in the equation. Capital gain on shares can be calculated using the following equation.

Where,

$$\textbf{MR}_{\textbf{it}} = \frac{P_{t1} - P_{t0}}{P_{t0}} \times 100 \qquad (9)$$

P_{t1} = Market Price per share of firm i at the end of the period t
P_{t0} = Market Price per share of firm i at the beginning of period t

Source: Corporate finance (Ross, Westerfield, Jaffe, 2005)

Empirical Results

Descriptive Statistics
The following tables show the results of the empirical test. Table 1 and Table 2 are outputs of SPSS Statistics software. In 2005, the mean capital gain on shares (MR) was 6.6%, and the total risk was 20.9 % in the finance and banking sectors, as shown in the descriptive statistics in Table 1. The Pearson correlation coefficient in Table 2 has proved that there is a positive relationship (more than 60%) between capital gain on shares (MR) and VAHC, STVA, and VAIC, suggesting that firms' capital gain on shares (MR) is positively related to their intellectual capital ability. However, the efficiency of capital employed, both human capital efficiency and structural capital efficiency, have shown a positive association with capital gain on shares (MR).

Table 1: Descriptive Statistics

	Mean	Std. Deviation	N
MR	6.6397	20.91702	33
VAHC	3.8971	4.26683	33
VACA	.0646	.03930	33
STVA	.4534	.42956	33
VAIC	4.4150	4.55971	33

Table 2: Correlations

Correlations

		MR	VAHC	VACA	STVA	VAIC
Pearson Correlation	MR	1.000	.632	-.162	.603	.647
	VAHC	.632	1.000	.209	.636	.997
	VACA	-.162	.209	1.000	-.064	.199
	STVA	.603	.636	-.064	1.000	.689
	VAIC	.647	.997	.199	.689	1.000
Sig. (1-tailed)	MR	.	.000	.185	.000	.000
	VAHC	.000	.	.121	.000	.000
	VACA	.185	.121	.	.361	.134
	STVA	.000	.000	.361	.	.000
	VAIC	.000	.000	.134	.000	.
N	MR	33	33	33	33	33
	VAHC	33	33	33	33	33
	VACA	33	33	33	33	33
	STVA	33	33	33	33	33
	VAIC	33	33	33	33	33

Linear Multiple Regression Results

Tables 3 and 4 show the output of SPSS Statistics software. Table 3 shows the significant result (P value < 0.05) of the global test, which suggests that at least one independent variable, such as human capital, structural capital, or physical capital, has a positive correlation with capital gain on shares (MR). According to Table 4, 52.5% of the total variation in capital gain on shares can be explained (explanatory power) by the variation in the Value Added Intellectual Capital Coefficient and its components, such as human capital efficiency, structural capital efficiency, and physical capital efficiency.

Table 3: AVOVA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7352.254	3	2450.751	10.690	.000[a]
	Residual	6648.440	29	229.257		
	Total	14000.693	32			

[a]. Predictors: (Constant), VAIC, VACA, STVA

[b]. Dependent Variable: MR

Table 4: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725[a]	.525	.476	15.14122

a. Predictors: (Constant), VAIC, VACA, STVA

Table 5 shows the coefficients of the linear regression in the respect of independent variables. The Value Added Intellectual Capital Coefficient (VAIC) shows a significant positive relationship with capital gain on shares (MR) (P-Value = 0.006 < 0.05), and both structural capital and human capital efficiency have positive relationships with capital gain on shares. However, capital employed efficiency shows a significant, negative relationship with capital gain on shares (P-Value = 0.06< 0.1). This investigation does not provide much detail about why capital employed has a negative relationship with capital gain, and it may be due to the special features of the finance and banking sector in Thailand. Therefore, further research can be done to investigate the relationship between capital gain on shares and capital employed, since this result does not comply with some existing research. Though the human capital efficiency has a positive relationship with capital gain on shares, it has been excluded in the final regression analysis in coefficient Table 5 and is mentioned in the excluded variables Table 6. It implies that the independent variable "human capital efficiency" has less power in explaining the variation in the capital gain on shares. In my opinion, a major contribution of this study is that it increases the explanatory power of the VAIC.

Table 5: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.183	6.040		-.030	.976
	VACA	-138.447	72.444	-.260	-1.911	.066
	STVA	9.710	8.960	.199	1.084	.287
	VAIC	2.574	.859	.561	2.995	.006

a. Dependent Variable: MR

Table 6: Excluded Variables

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	VAHC	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), VAIC, VACA, STVA

b. Dependent Variable: MR

Conclusion

Intellectual capital is recognized as a major corporate asset capable of generating sustainable competitive advantages and superior financial performance (Barney, 1991). Empirical evidence of this research suggests that there is a significant positive relationship between investors' capital gain on shares and corporate intellectual capital. In addition, this study indirectly proves the positive relationship between capital gain on shares and corporate financial performance, since existing research has shown a positive relationship between VAIC and corporate financial performance (Barney, 1991; Pulic, 2000b). This investigation has shown the potency of corporate intellectual capital in order to generate capital gain on shares and, as a result, attract investors in the market. Thus a firm can formulate its business strategies to increase the efficiency of its resources and achieve competitive advantages over its rivals.

Service companies, such as bank, finance and insurance, play an important role in developing economies. The findings of this research can be applied by companies especially in developing countries since the data for the research was collected from banking, finance and insurance companies listed on Thailand's stock exchange.

References
Barney, J.B. (1991). Firm resources and sustainable competitive advantage. *Journal of Management,* Vol. 17 No. 1, pp.99-120.

Bornemann, M. (1999). Potential of Value Systems According to the VAIC[TM] Method. *International Journal Technology Management,* 18(5/6/78): 463-475.

Bontis, N. (1999). Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field. *International Journal of Technology Management*, Vol. 18 Nos 5/6/7/8, pp.433-462.

Donaldson, T., &Preston, L.E. (1995). The Stakeholder theory of the corporation: concepts, evidence and implication. *Academy of Management Review,* Vol. 20 No. 1, pp. 65-91.

Edvinsson, L., & Malone, M.S.(1997). *Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower,* Harper Business, New York, NY.

Edvinssion, L. (1997). Developing intellectual capital at Skandia, *Long Range Panning*, 30 (June); pp.366-373.

Firer, S., & Williams, S. M. (2003). Intellectual Capital and Traditional Measures of Corporate Performance, *Journal of Intellectual Capital,* Vol. 4 No. 3, pp.348- 360.

Fitz-enz, J. (2001). *The ROI of Human Capital*, American Management Association, NY, USA.

Bozbura, F. T. (2004). Measurement and application of intellectual capital in Turkey. *The Learning Organization,* Vol. 11 No. 4/5, pp.357-367.

Huei- Jen Shi. (2006). The Application of the Value Added Intellectual Coefficient to Measure Corporate Performance. Evidence from Technological Firms. *International Journal of Management,* Vol. 23 No 2, pp.356- 365.

Lev, B.(2001). *Intangibles: Management and Reporting,* Brookings Institution Press, Washington, DC.

Lev, B., and Radhakrishnan, S. (2003). The Measurement of Firm- Specific Organizational Capital. NBER Working Paper, No. 9581, available at: www.nber.org/papers/w9581.

Lev, B., and Zarowing, P. (1999). The Boundaries of Finance Reporting and How to Extend them. *Journal of Accounting Research,* Vol. 37, Autumn, pp.353-385.

Chen, M.C., Cheng, S. J., & Wang, Y. C. (2005) An Empirical Investigation of the Relationship between Intellectual Capital and Firms' Market Value and Financial Performance. *Journal of Intellectual Capital ,6, 2* ABI/INFORM Global, pp.156-176.

Mavridis, D.G.. (2004). The Intellectual Capital Performance of the Japanese Banking Sector, Journal of Intellectual Capital, Vol. 5, No.1, pp.92- 115.

Pulic, A. (1998). Measuring the performance of intellectual potential in knowledge economy. available at: http://www.vaic-on.net/start.htm (accessed 19 August 2006).

Pulic, A. (2000a). VAICTM – an Accounting Tool for IC Management. *International Journal Technology Management,* 20(5/6/7/8), pp.702-714.

Pulic, A. (2000b). "MVA and VAIC analysis of randomly selected companies from *FTSE* 250", available at: http://www.vaic-on.net/start.htm (accessed 19 August 2006).

Riahi- Belkaoui, A. (2003), "Intellectual capital and firm performance of US multinational firms: a study of the resource- based and stakeholder views", *Journal of Intellectual capital,* Vol.4 No. 2, pp.215-226.

Robert H. Ashton., (2005), Intellectual Capital and Value creation: A Review, *Journal of Accounting Literature*, Vol. 24, pp.53-134.

Stephen, A., Ross, R. W., Westerfield, J.J. (2005). Corporate Finance, 7th ed, The McGraw-Hill.

Ulrich, D. (1997). *Human Resource Champions*, Harvard Business School Press, MA.

Williams, M. (2001). Are intellectual capital performance and disclosure practice related? *Journal of Intellectual Capital*, Vol. 2 No. 3, pp.192-203.

Wang, W. I., and Cheung C. F. (2004). The Impacts of Intellectual Capital on Performance: An Empirical Investigation of the Taiwan Semiconductor Industry. *The International Journal of Accounting Studies,* Vol. 39, pp.89-117.