IMPACT OF INTELLECTUAL CAPITAL ON FINANCIAL PERFORMANCE OF BANKING AND FINANCIAL SERVICES SECTOR: COMPARATIVE STUDY

Shachi Chaudhary¹, Jophi Joseph², Dr. Prakash M³

¹M.Com. Student, Christ (Deemed to be University), Bangalore, India
²M.Com. Student, Christ (Deemed to be University), Bangalore, India
³Assistant Professor, Christ (Deemed to be University), Bangalore, India

ABSTRACT

The financial performance of any organization fundamentally relies on Intellectual Capital (IC). It includes a total of organization’s knowledge and not only the monetary wealth. Thus, it becomes important to study IC and its impact on financial performance indicators. The purpose of this paper is to study the associations and impact of the IC indicators on financial performance. It scrutinises and contrasts the performance of the banking sector and the financial services sector based on IC related efficiency. In India, there is less number of studies and it provides a scope to find out to what extent Indian industries are utilising IC to enhance financial performance. Value-Added Intellectual Capital (VAIC™) model is implemented to scrutinise the financial performance. Secondary data is taken of 96 Indian banking companies and 81 Indian financial services companies for a period of 5 years from 2014-2015 to 2018-19. Correlation is used to check the relationship between the dependent and independent variables and regression for finding the degree of impact. According to the results, in both sectors, IC plays a significant role in deciding the financial performance. When the individual impact of the components of VAIC is studied, it can be seen that Human Capital Efficiency (HCE) has more impact on the financial services sector whereas in banking sector Structural Capital Efficiency (SCE) has more impact. It can also be inferred that in spite of the growing importance of VAIC there is no much impact in these sectors which are highly driven by human and structural factors. The current paper attempts to evaluate the impact of IC on the financial performance of sectors and provides a base for further studies in the comparative analysis of diverse sectors in India.

Keywords: Intellectual Capital; IC; financial performance; Value Added Intellectual Capital; VAIC; comparative study; banking sector; financial services sector.

1. INTRODUCTION

The increasing importance of data, skills, work environment, aptitude and human factor which are the reasons for understanding the significance of Intellectual Capital (IC) as a field of study (Smriti & Das, 2018), but in the books of accounts of companies, only the transactions which can be measured in terms of money are recorded. The balance sheet contains the tangible and intangible assets which can be expressed in monetary terms. Other factors such as employees of the organization, management, working environment, organizational structure, information, work culture, etc. which are equally important for the success of the organization are not considered
while preparing the financial reports (Brennan, 2001; Campisi & Costa, 2008; Cohen & Kaimenakis, 2007). With an increase in the significance of intangible assets such as those stated above, the importance of measurement of IC and to study its relationship with the financial standing of firms has increased as well. IC, as defined by Pulic (2000, 2004), can be classified into 3 major components, namely, Human Capital (HC), Structural Capital (SC) and Capital Employed (CE).

According to Gupta, Goel, & Bhatia (2019), human capital includes the employee's intellectual capabilities and experience required for the organisation to excel in the competitive market. Knowledge, skills and aptitude of employees are also part of HC.

Organisational process, hierarchy, inter-organisational & intra-organisational relationship comes under structural capital (Filieri & Alguezazi, 2014). The ability of the organisation to synergise its resources in the most efficient manner falls under the purview of SC (Ting & Lean, 2009).

The third independent variable under IC is capital employed. CE includes the monetary factors of a firm, the funds invested in a firm to arrange for the resources. It also includes the physical assets of an organisation (Nimtrakoon, 2015).

IC includes all the factors of the underlying three components.

IC = HC + SC + CE

Though there have been studies on the importance and growing significance of IC on the performance of diverse sectors across the world not much attention has been given to this topic in India. The report suggests that, in developing countries like India, where more than 50% of the population falls under the working-age, it becomes important to analyze the impact of its human resources on the development of the country (CEIC, 2019). IC linked performance measurement helps in analysing whether there is efficient utilisation of such resources by companies or not? In India, there is still a lot of scope for research on the measurement of the response of IC on different sectors. This research paper focuses on the outcome of IC on the financial performance of the Banking and the Financial Services Sector (BAFSS).

Reports suggest that an increase in the working population and rising income of Indian people will lead to more demand for banking and financial services in the coming years. Diverse people will lead to more customisation in products and services (IBEF Report of Banking Sector, 2019; IBEF Report of Financial Services Sector, 2019). Thus it becomes important to analyse whether there is proper investment in developing intellectual capital to make sure that quality services are provided in these sectors which also assists overall growth of the economy. These two sectors, namely, banking and financial services, are information-driven sectors. It becomes a key issue to make sure that it has enough resources in terms of employees, funds, organisational structure, etc. to continuously innovate its products and services to serve the changing needs of consumers.

2. REVIEW OF LITERATURE
A study was conducted on Iranian insurance companies which revealed that Human Capital Efficiency (HCE) has a positive influence on its financial performance (Alipour, 2012). In the financial services sector, HCE is influenced by IC efficiency according to an Australian study, while Capital Employed Efficiency (CEE) and Structural Capital Efficiency (SCE) had a minimal effect on the business performance (Joshi, Cahill, Sidhu, & Kansal, 2013). Mohiuddin & Najibullah (2006) also concludes that HCE highly influences the financial standing of the banks in Bangladesh compared to SCE and CEE. Many studies have concluded in a similar way that HC highly acts upon IC performance of diverse sectors (Kamath, 2008; Purohit & Tandon, 2017; Rahman & Ahmed, 2012; Tulugurova, 2007).

Xu & Wang (2018) says that SCE is the least impacting component of IC. Though other studies conclude differently that SCE has an impact on IC-linked financial performance of sectors (Chu, Chan, Yu, & Wong, 2011; Gan & Saleh, 2008). In Bahrain, a study conducted on measuring the degree of impact of IC on the organisation’s accounting-based performance shows that a higher level of SCE significantly affects ROA and TobinQ (Hamdan, 2018).

A study conducted on Serbian Information Communication Technology (ICT) sector reveals that CEE significantly affects ROE, ROA, profitability and Asset Turnover Ratio (ATO) (Dženopoljac, Janoševic, & Bontis, 2016). Same is confirmed by a study conducted on Bangladeshi textile industry, stating that CEE is the only efficiency ratio that explains 72% of ATO and it has a significant role in deciding the productivity of this industry (Chowdhury, Rana, Akter, & Hoque, 2018).

Most of the studies conducted using Value Added Intellectual Capital (VAIC) model revealed that the IC has a vital role in the performance of different sectors across the world. According to Riahi-Belkaoui (2003), IC indicators influence the financial standing of US multinational firms. Several sectors show a significant positive correlation between IC and its ingredients including SC, HC and CE (Chang & Hsieh, 2011; Ting & Lean, 2009; Zeghal & Maaloul, 2010). Laing, Dunn, & Hughes-Lucas (2010) concluded in a similar way that IC has an impact on the hotel industry of Australia.

STUDIES CONDUCTED IN INDIA

Mondal & Ghosh (2012) conducted a study on the Indian banking sector for the period of 1998 to 2008 taking a sample size of 65 banking companies operating in India and concluded that banking institutions utilise HC more efficiently compared to other components of IC. The findings of Smriti & Das (2018) conducted on the COSPI listed firms of India effectively demonstrate a significant association of VAIC with the independent variables, including the productivity of the firms, profitability, sales growth and market value. Vishnu & Gupta (2014) concluded on the basis of their study on pharmaceutical firms in India that VAIC and its efficiencies have an impact on the performance of this sector.

There have been studies conducted in India on individual sectors but when it comes to comparative analysis, there are only a handful of studies done. Singh, Sidhu, Joshi, & Kansal (2016) conducted a
comparative study on the Indian private and public sector banks and Pal & Soriya (2012) deduced that ROA and ROE are effected by IC utilisation of firms of Indian pharmaceutical and textile industry.

The current paper focuses on conducting an in-depth comparative analysis of the BAFSS.

RESEARCH GAP

Intellectual Capital is given a lot of attention in recent times. In India as well there have been studies to find the effect of IC on companies’ performance but the researchers have focused mainly on individual sectors. The present paper focuses on the comparative study between the Banking Sector (BS) and the Financial Services Sector (FSS) to get a better understanding of which among these is efficiently utilising intellectual capital resources. On this basis, suggestions can be given to improve the IC performance of both sectors to enhance the economic growth of the country as a whole.

3. RESEARCH OBJECTIVE

- To study the relationship between the IC performance indicators and the financial performance indicators of the BAFSS.
- To examine the degree of association between IC performance indicators and financial performance indicators of the BAFSS.
- To compare the BAFSS on the basis of IC performance.

DATA COLLECTION

The financial information of companies is collected from the Prowess database maintained by the Centre for Monitoring Indian Economy (CMIE). The data is collected for 96 banking companies and 81 financial services companies listed on the database. The time span for the panel data is 5 years taken from the financial year 2014-2015 to 2018-2019.

The purpose behind taking this time span is that the information required for the examination is accessible for all the organisations during this time frame and there has been a major transformation in the BAFSS in recent times due to technological advancement and mergers of companies in these sectors.

Correlation is used in the current paper to observe the relationship among the IC indicators and the Financial Performance Indicators (FPI). Ordinary Least Square (OLS) method of regression is used to examine the degree of relationship between the dependent and independent variables.

VAIC MODEL
To evaluate the IC many models have been developed by researchers. All the models have their own merits and drawbacks, including lack of comparability and scope, the variables used by the models and their subjectivity (Pulic, 2004; Williams, 2001).

Among all, the VAIC model apart from its drawbacks gained the importance due to ease of use, the flexibility of the model to fit different types of industry and its credibility of the data is also high as it takes the information from the annual report of companies (Andriessen, 2004; Firer & Williams, 2003). VAIC model was developed based on Skandia Navigator (Pulic, 1998). It becomes easy to perform comparative studies on financial performance based on IC indicators either industry-wise or country wise.

VAIC model considers all assets, including both tangible as well as intangible. The tangible part of the model being CE whereas HC and SC being the intangible part.

The formula for Value-Added is given below:

\[ VA = O + C + D + A \]

Where,

- \( O \) = Expenses for business operation;
- \( C \) = Employees cost;
- \( D \) = Depreciation on assets;
- \( A \) = Amortization of intangible assets

According to the VAIC model, variables taken to quantify the efficiency of SC, HC and CE are Structural Capital Efficiency (SCE), Human Capital Efficiency (HCE), and Capital Employed Efficiency (CEE) respectively.

**VARIABLES**

**DEPENDENT VARIABLES**

The first variable being Return on Equity (ROE), it is the ratio between the total income and equity shareholders capital. The second variable considered is Return on Assets (ROA), the formula is net income divided by total assets. The last dependent variable is Return on Capital Employed (ROCE), it is calculated by dividing EBIT by Capital Employed. ROE, ROA and ROCE have been used as a measure for the organisation’s financial performance by researchers (Bin Tariq & Abbas, 2013; Firer & Williams, 2003; Musah, Kong, & Antwi, 2019; Pulic, 1998). All three variables are used in the current study.

**INDEPENDENT VARIABLES**

The present study takes into consideration four independent variables:

- HCE: Value Added (VA) / Human Capital (HC).
It is a tool used to measure the effectiveness of an organisation’s human resources. It deals with employee expenses. It tells how much a company gets in return if it invests one unit of money on its human resource.

- **SCE**: Structural Capital (SC) / Value Added (VA).
  SCE is a proxy used for identifying the efficiency of structural capital (functional structure, hierarchy etc.) in an organisation. The value of SCE is derived on the basis of this concept of the VAIC model. SC=VA-HC. It is an indicator of the return that the company gets if it invests one monetary unit in its structural development.

- **CEE**: Value Added (VA)/ Net Worth.
  It measures the efficient utilisation of capital employed in the business. Capital employed is an important factor to add value to the organisation (Sardo & Serrasqueiro, 2018), CEE calculates the proficiency of the firm’s material and money related capital.

- **VAIC**: HCE+SCE+CEE
  The total value of all the three sub-components. It takes into account the overall effect of all the factors including SC, HC and CE.

**REGRESSION MODEL**

Since the data taken for the purpose of the study was non-stationary, the model used for the current paper includes the first difference of the values of the variables to make the data stationary. The proxies used for dependent variables’ first difference include DROA, DROE and DROCE for ROA, ROE and ROCE respectively. The proxies used for HCE, SCE and CEE are DHCE, DSCE and DCEE respectively.

**REGRESSION EQUATIONS**

Return on Assets

- DROA= α + β₁ DVAIC + ε
- DROA= α + β₁ DHCE + β₂ DSCE + β₃ DCEE + ε

Return on Equity

- DROE= α + β₁ DVAIC + ε
- DROE= α + β₁ DHCE + β₂ DSCE + β₃ DCEE + ε

Return on Capital Employed

- DROCE= α + β₁ DVAIC + ε
- DROCE= α + β₁ DHCE + β₂ DSCE + β₃ DCEE + ε

*α = constant, ε = error

**EMPIRICAL RESULTS**

**CORRELATION ANALYSIS**

**TABLE 1**

**CORRELATION RESULTS OF THE BANKING SECTOR**
According to the correlation results of the banking sector in Table I, it can be said that there is a notable positive correlation among all the dependent (DROA, DROE and DROCE) and independent variables (DHCE, DSCE, DCEE and DVAIC) but the degree of correlation differs from variable to variable. The highest correlation can be seen between DHCE and DROCE of 0.229 and it is significant at 0.01 level. Least correlated variables are DCEE and DROCE with a correlation value of 0.062 at 0.05 level of significance. Table 1 Correlation Results of the Banking Sector

TABLE 2
CORRELATION RESULTS OF THE FINANCIAL SERVICES SECTOR
Table II reveals that the correlation results of the FSS. Highest correlation of 0.227 at a significance level of <0.01 can be seen between DSCE and DROCE. DSCE on DROA show a correlation of 0.144 (p-value<0.01). Least correlation of 0.013 is shown by DVAIC on DROA at a significance level of less than 0.01.

Correlation result answers the first objective of the present paper that there is a positive correlation between the IC indicators and the BAFSS financial performance indicators.

**REGRESSION ANALYSIS**

DHCE and DSCE in BAFSS have an important role in deciding the financial performance of the firms. Based on the results, it could be concluded that in the financial services sector DHCE has more impact when compared with the other two independent variables, i.e., DSCE and DCEE. But in the case of the banking sector, DSCE has more impact on the dependent variables compared to the other two independent variables.

In the case of the banking sector, overall more effect of DVAIC on DROA can be sighted. DROA being 0.588. DROE is the least affected variable by DVAIC as regression coefficient for DVAIC is 0.009 (refer annexure).
### TABLE 3
**OLS REGRESSION RESULT FOR DROA OF THE BANKING SECTOR**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.220983</td>
<td>0.128556</td>
<td>1.718970</td>
<td>0.0004</td>
</tr>
<tr>
<td>DHCE</td>
<td>0.738583</td>
<td>0.170660</td>
<td>4.327811</td>
<td>0.0000</td>
</tr>
<tr>
<td>DSCE</td>
<td>9.538533</td>
<td>10.46376</td>
<td>0.911578</td>
<td>0.0006</td>
</tr>
<tr>
<td>DCEE</td>
<td>0.485254</td>
<td>0.254541</td>
<td>1.906390</td>
<td>0.0004</td>
</tr>
</tbody>
</table>

Table III shows that with every 1 unit increase in DSCE there is 9.539 units increase in DROA which is a significant number. More investment in structural capital of a company pays off with an increase in return on assets.

### TABLE 4
**OLS REGRESSION RESULT FOR DROE OF THE BANKING SECTOR**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.036473</td>
<td>0.008658</td>
<td>4.212863</td>
<td>0.0000</td>
</tr>
<tr>
<td>DHCE</td>
<td>0.018879</td>
<td>0.011493</td>
<td>1.642654</td>
<td>0.0013</td>
</tr>
<tr>
<td>DSCE</td>
<td>1.561407</td>
<td>0.704680</td>
<td>2.215766</td>
<td>0.0273</td>
</tr>
<tr>
<td>DCEE</td>
<td>0.062925</td>
<td>0.017142</td>
<td>3.670805</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

Table IV shows that among all the other independent variables DSCE has the most significant impact with every unit increment in DSCE there is 1.561 unit increment in DROE. According to the results, in the banking sector, SC has a major role in deciding the financial performance.

### TABLE 5
**OLS REGRESSION RESULT FOR DROCE OF THE BANKING SECTOR**
Table V shows the impact of DSCE on DROCE. With every 1 unit increase in DSCE, there is 0.519 unit increase in DROCE.

### TABLE 6
**OLS REGRESSION RESULT FOR DROA OF THE FINANCIAL SERVICES SECTOR**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.006621</td>
<td>0.002773</td>
<td>2.387877</td>
<td>0.0174</td>
</tr>
<tr>
<td>DHCE</td>
<td>0.023479</td>
<td>0.003681</td>
<td>6.378724</td>
<td>0.0000</td>
</tr>
<tr>
<td>DSCE</td>
<td>0.518743</td>
<td>0.225687</td>
<td>2.298510</td>
<td>0.0221</td>
</tr>
<tr>
<td>DCEE</td>
<td>0.001104</td>
<td>0.005490</td>
<td>0.201135</td>
<td>0.0007</td>
</tr>
</tbody>
</table>

Overall in the FSS, among all the dependent variables, DROA is the most affected variable by DVAIC (Regression coefficient 7.524). Other dependent variables DROE (3.553) and DROCE (1.199) are comparatively less affected (refer to annexure). When an individual component of DVAIC are analysed it can be inferred that with every 1 unit increase in DHCE there is 1.091 increase in DROA (Table VI). In the FSS, more importance should be given to human capital and investing more in increasing the efficiency of human capital (Joshi et al., 2013). It has more importance than the other two variables and it decides the financial performance of the FSS.

### TABLE VII
**OLS REGRESSION RESULT FOR DROE OF THE FINANCIAL SERVICES SECTOR**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.010952</td>
<td>0.010511</td>
<td>1.041920</td>
<td>0.0014</td>
</tr>
<tr>
<td>DHCE</td>
<td>1.091375</td>
<td>2.581205</td>
<td>0.422816</td>
<td>0.0027</td>
</tr>
<tr>
<td>DSCE</td>
<td>0.747963</td>
<td>0.224088</td>
<td>3.337810</td>
<td>0.0009</td>
</tr>
<tr>
<td>DCEE</td>
<td>0.000469</td>
<td>0.001195</td>
<td>0.392645</td>
<td>0.0008</td>
</tr>
</tbody>
</table>
Table VII clearly reveals that with every 1 unit increase in DHCE there is 3.844 unit increase in DROE. Table VIII presents that with every 1 unit increase in DHCE there is 1.312 increase in DROCE. All of these findings clearly direct that the performance of the FSS has been influenced by HCE.

**TABLE VIII**

**OLS REGRESSION RESULT FOR DROCE OF THE FINANCIAL SERVICES SECTOR**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.005162</td>
<td>0.007989</td>
<td>0.646108</td>
<td>0.0002</td>
</tr>
<tr>
<td>DHCE</td>
<td>3.843701</td>
<td>1.963721</td>
<td>1.957355</td>
<td>0.0003</td>
</tr>
<tr>
<td>DSCE</td>
<td>0.465611</td>
<td>0.170310</td>
<td>2.733900</td>
<td>0.0002</td>
</tr>
<tr>
<td>DCEE</td>
<td>0.000882</td>
<td>0.000908</td>
<td>0.971379</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

4. **CONCLUSION**

The present study compares the financial performance based on VAIC indicators which include SCE, HCE, and CEE. It can be concluded that VAIC does have an impact on the financial soundness of companies and confirms other studies as well (Chan, 2009; Chen, Cheng, & Hwang, 2005; Maditinos, Chatzoudes, Tsairidis, & Theriou, 2011).

The results show that structural capital, contrasting to the other two factors, has a relatively higher role in deciding the performance of the banking sector while in the FSS more effect is made by the human factor.

It can be said on the basis of the present study that FSS utilises their intangible assets more efficiently compared to the banking sector, in other words, there is more utilisation of VAIC in the FSS than compared to what is utilised in the banking sector. On the basis of DROA, DROE and DROCE, FSS seems to be more efficient utiliser of DVAIC compared to the banking sector. This may be because of many reasons including, higher investment in training and development of employees, giving more importance to organisational structure, hierarchy system followed within the organisation in FSS. Further, due to differences in the way both the sectors function, the FSS,
not only makes use of the capital invested but an equal contribution is made by human factor and their skills to get the desired result and the same is confirmed by the study as well.

IMPLICATIONS

It will be helpful for the business practitioners of both sectors to improve on their performance so that there is an efficient investment and better financial results are achieved. The banking sector companies can look into the policies, functional structure as well as other factors of the FSS to improve on their performance. The same can be followed by the FSS to increase their efficiency. BAFSS have a competitive advantage over each other under different parameters of VAIC.

5. LIMITATIONS AND FUTURE SCOPE

Including other dependent variables such as sales growth, Return on Investment (ROI) and Asset Turnover Ratio (ATO) would have given a more accurate result. Increasing the time period would also positively contribute to the results. Financial leverage and size of the sectors can be taken as a control variable to reduce the effect of exogenous variables and explain the dependent variables more accurately.

Exploring the emerging fields in the economy would give more understanding into the use of IC and its impact on the success of an organisation. With increased automation and robotization, the significance of the human factor has changed over time. Thus realising the importance of employing human resources in the right position and with the right skills in an organisation has become a humongous task.

6. REFERENCES


ANNEXURE

**TABLE IX**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.224763</td>
<td>0.128341</td>
<td>1.751294</td>
<td>0.0007</td>
</tr>
<tr>
<td>DVAIC</td>
<td>0.588800</td>
<td>0.089689</td>
<td>6.564898</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
### TABLE X
OLS REGRESSION RESULT FOR DVAIC ON DROE OF THE BANKING SECTOR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.037012</td>
<td>0.008826</td>
<td>4.193325</td>
<td>0.0000</td>
</tr>
<tr>
<td>DVAIC</td>
<td>0.009383</td>
<td>0.006168</td>
<td>1.521234</td>
<td>0.0090</td>
</tr>
</tbody>
</table>

### TABLE XI
OLS REGRESSION RESULT FOR DVAIC ON DROCE OF THE BANKING SECTOR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.006826</td>
<td>0.002811</td>
<td>2.428474</td>
<td>0.0016</td>
</tr>
<tr>
<td>DVAIC</td>
<td>0.013747</td>
<td>0.001964</td>
<td>6.998398</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

### TABLE XII
OLS REGRESSION RESULT FOR DVAIC ON DROA OF THE FINANCIAL SERVICES SECTOR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.011330</td>
<td>0.010623</td>
<td>1.066524</td>
<td>0.0000</td>
</tr>
<tr>
<td>DVAIC</td>
<td>7.524362</td>
<td>2.564419</td>
<td>2.934139</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

### TABLE XIII
OLS REGRESSION RESULT FOR DVAIC ON DROE OF THE FINANCIAL SERVICES SECTOR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.006210</td>
<td>0.008044</td>
<td>0.771960</td>
<td>0.0007</td>
</tr>
<tr>
<td>DVAIC</td>
<td>3.552976</td>
<td>1.940347</td>
<td>1.831103</td>
<td>0.0005</td>
</tr>
</tbody>
</table>
**TABLE XIV**  
OLS REGRESSION RESULT FOR DVAIC ON DROCE OF THE FINANCIAL SERVICES SECTOR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.004150</td>
<td>0.006560</td>
<td>0.632545</td>
<td>0.0005</td>
</tr>
<tr>
<td>DVAIC</td>
<td>1.199324</td>
<td>1.587492</td>
<td>0.755483</td>
<td>0.0004</td>
</tr>
</tbody>
</table>