Analyzing Factors Influencing Sustainable Banking Development in Vietnam

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Abstract

We analyze banking sustainability via measuring impacts of various factors on net profit in an econometric model. This study will analyze a typical case of Eximbank (EIB) a listed big bank in Vietnam market. By using Eview software to conduct an econometric (OLS regression) and taking advantage of qualitative analysis and inductive methods, The research findings tell us that because total revenue has higher impact on net profit than sale cost, Eximbank (EIB) need to pay more attention to selling and increasing revenues from business, as well as managing cost better. Next, as CPI, G and R has high positive correlation with net profit, there is policy implication that CPI can increase a little but and GDP growth increase to be in favor of rising net profit of EIB.

Keywords


JEL: M21, G30, G32, G38.
Introduction

First, we recognize the importance of sustainable banking development raising some vital issues in recent years.

Balasubramanian et al (2014) specified that the banking sector has always been in the vanguard of technology in order to add value to its products, services and efficiency.

In Vietnam, Eximbank's loan growth is an important issue in each bank's development strategy and so is Eximbank. However, in recent years, the bank's loan growth is at a low level compared to other banks.

According to statistics of Ho Chi Minh City Securities Corporation (HSC), since 2011, the average gross growth rate of customer loans has only reached 4.2% per year. In 2018 alone, lending increased by only 2.9% compared to last year. From the position of Top 10 commercial banks in terms of market share, Eximbank has now dropped to the Top 15. (source: vietnambiz.vn, access date 3/12/2021)

We will address research issues below:
Issue 1: What are factors affecting banking sustainability?
Issue 2: What are recommendations for sustainable bank development?

Literature Review

We summarize previous studies as follows:

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Contents, results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karim, A.J</td>
<td>2011</td>
<td>effective decision can be made in firm with support of MIS.</td>
</tr>
<tr>
<td>Trivelas, Santouridis</td>
<td>2013</td>
<td>Job productivity affected by effective model of MIS (Internal process IP)</td>
</tr>
<tr>
<td>Arasu et al</td>
<td>2014</td>
<td>Better client satisfaction can be brought by flow of information (bandwith)</td>
</tr>
<tr>
<td>Huy, D.T.N</td>
<td>2015</td>
<td>Listed firms and banks need better corporate governance</td>
</tr>
<tr>
<td>Giebe et al</td>
<td>2019</td>
<td>“Big Data &amp; Analytics” considered as effective tool for client services.</td>
</tr>
<tr>
<td>Feitosa et al</td>
<td>2019</td>
<td>Labor skills and relations and communications has been supported/affected by Disruptive technologies leading to big changes</td>
</tr>
<tr>
<td>Sibanda et al</td>
<td>2020</td>
<td>Classical model of bank transformed into collaborative Fintech, by technology support</td>
</tr>
<tr>
<td>Huy, D.T.N et al</td>
<td>2021</td>
<td>Bank risk management need to be enhanced more</td>
</tr>
<tr>
<td>Huy, D.T.N, Loan, B.T.T., Anh, P.T</td>
<td>2021</td>
<td>Many macro factors affecting real estate industry, then we can expand model for other sectors</td>
</tr>
</tbody>
</table>
Methodology

Method and Data

This paper uses using Eview software to conduct an econometric (OLS regression) and taking advantage of qualitative analysis and inductive methods and dialectical materialism method.

Eviews supported us to conduct OLS regression to estimate various factors influencing bank net profit.

Looking at Descriptive Statistics Below, We See That

- Std.dev of sale cost and total revenue are highest while that of G and Rf are lowest (figure 1).
- Correlation of sale cost and net profit is higher than that between R and net profit (figure 2).
- Covariance between net profit and sale cost is higher than that between net profit and R (figure 3).

<table>
<thead>
<tr>
<th></th>
<th>NETPROFIT</th>
<th>CPI</th>
<th>G</th>
<th>R</th>
<th>RF</th>
<th>SALE_COST</th>
<th>TOTALREV..</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>965.5000</td>
<td>0.053530</td>
<td>0.061050</td>
<td>0.115260</td>
<td>0.046905</td>
<td>11168.30</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>741.0000</td>
<td>0.038150</td>
<td>0.064800</td>
<td>0.100000</td>
<td>0.053350</td>
<td>7115.600</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>3038.0000</td>
<td>0.181300</td>
<td>0.070600</td>
<td>0.190000</td>
<td>0.065350</td>
<td>17549.00</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>39.0000</td>
<td>0.036300</td>
<td>0.029100</td>
<td>0.068000</td>
<td>0.012200</td>
<td>5203.000</td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>943.8226</td>
<td>0.048052</td>
<td>0.012441</td>
<td>0.083225</td>
<td>0.018655</td>
<td>2500.025</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
<td>1.201021</td>
<td>2.051303</td>
<td>-1.943628</td>
<td>1.138882</td>
<td>-0.570545</td>
<td>0.910160</td>
<td></td>
</tr>
<tr>
<td>Kurtosis</td>
<td>3.417384</td>
<td>6.308044</td>
<td>5.524564</td>
<td>2.705184</td>
<td>2.017240</td>
<td>2.494767</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 EIB - Descriptive figures
(source: author analysis with Eview)

<table>
<thead>
<tr>
<th></th>
<th>NETPROFIT</th>
<th>CPI</th>
<th>G</th>
<th>R</th>
<th>RF</th>
<th>SALE_COST</th>
<th>TOTALREV..</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jarque-Bera</td>
<td>2.176726</td>
<td>1.157272</td>
<td>8.320575</td>
<td>2.197970</td>
<td>0.944960</td>
<td>1.487010</td>
<td></td>
</tr>
<tr>
<td>Probability</td>
<td>0.289666</td>
<td>0.003059</td>
<td>0.015603</td>
<td>0.332090</td>
<td>0.623454</td>
<td>0.475445</td>
<td></td>
</tr>
<tr>
<td>Sum</td>
<td>965.5000</td>
<td>0.535300</td>
<td>0.510900</td>
<td>1.152600</td>
<td>0.459050</td>
<td>7723.000</td>
<td></td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>80172111</td>
<td>0.020791</td>
<td>0.001393</td>
<td>0.013847</td>
<td>0.003112</td>
<td>58523650</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2 EIB - correlation matrix with 6 factors
(source: author analysis with Eview)
Main Results

1. Overall Results

Shown in below figure we recognize that:

- There is positive relation between net profit and CPI, R and Rf (chart 1, chart 3, chart 4).
- there is little positive correlation (almost neutral relation) between net profit and G (chart 2).

![Chart 1](source: author analysis with Eview)

![Chart 2](source: author analysis with Eview)
Chart 3

(source: author analysis with Eview)

Chart 4

(source: author analysis with Eview)

Chart 5

(source: author analysis with Eview)
2. OLS Regression Analysis

First, we see from below figures that R and sale cost have negative correlation whereas there is positive effect between net profit and total revenue (see figure 6).

![Chart 6](source: author analysis with Eview)

### Chart 6

- **Variable**: NETPROFIT
- **Method**: Least Squares
- **Date**: 12/03/21
- **Time**: 14:44
- **Sample**: 10
- **Included observations**: 10

<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>R</td>
<td>19022.42</td>
<td>5209.517</td>
<td>3.651405</td>
<td>0.0005</td>
</tr>
<tr>
<td>C</td>
<td>-1227.025</td>
<td>630.5790</td>
<td>-1.944636</td>
<td>0.077</td>
</tr>
</tbody>
</table>

- **R-squared**: 0.624990
- **Adjusted R-squared**: 0.579114
- **S.E. of regression**: 613.0390
- **Akaike info criterion**: 16.85159
- **Schwarz criterion**: 15.91211
- **Log likelihood**: -77.25795
- **F-statistic**: 13.3276
- **Prob(F-statistic)**: 0.00648

### Figure 4 EIB OLS 1 factor R
(source: author analysis from Eviews)

![Figure 4](source: author analysis from Eviews)

### Figure 5 EIB OLS 1 factor Sale cost
(source: author analysis from Eviews)

![Figure 5](source: author analysis from Eviews)
Figure 6 EIB OLS 3 factors R, sale cost and total revenue 
(source: author analysis from Eviews)

<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>R</td>
<td>-5776.086</td>
<td>5745.018</td>
<td>-1.005230</td>
<td>0.3536</td>
</tr>
<tr>
<td>SALE_COST</td>
<td>-0.144119</td>
<td>0.039074</td>
<td>-0.466294</td>
<td>0.6576</td>
</tr>
<tr>
<td>TOTALREVENUE</td>
<td>0.434857</td>
<td>0.253183</td>
<td>1.717557</td>
<td>0.1367</td>
</tr>
<tr>
<td>C</td>
<td>-2116.930</td>
<td>414.8283</td>
<td>-5.07970</td>
<td>0.0022</td>
</tr>
</tbody>
</table>

R-squared: 0.925891
Adjusted R-squared: 0.888836
Standard error of regression: 584150.8
Sum of squares resid: 314.8826
Log likelihood: -63.1090
Durbin-Watson stat: 1.965163

Figure 7 EIB OLS 3 factors R, CPI and G 
(source: author analysis from Eviews)

<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>CPI</td>
<td>1168.72</td>
<td>5566.330</td>
<td>2.098640</td>
<td>0.0806</td>
</tr>
<tr>
<td>R</td>
<td>854.513</td>
<td>5816.495</td>
<td>1.253227</td>
<td>0.2587</td>
</tr>
<tr>
<td>G</td>
<td>-5891.320</td>
<td>14411.70</td>
<td>-0.408787</td>
<td>0.6959</td>
</tr>
<tr>
<td>C</td>
<td>-284.5436</td>
<td>1046.288</td>
<td>-0.271855</td>
<td>0.7948</td>
</tr>
</tbody>
</table>

R-squared: 0.785845
Adjusted R-squared: 0.678767
Standard error of regression: 534.9399
Sum of squares resid: 1716926
Log likelihood: -74.4589
Durbin-Watson stat: 1.113043

Figure 8 EIB OLS 4 factors 
(source: author analysis from Eviews)

<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>CPI</td>
<td>11485.81</td>
<td>2767.603</td>
<td>4.161543</td>
<td>0.0008</td>
</tr>
<tr>
<td>G</td>
<td>12043.78</td>
<td>8215.655</td>
<td>1.465954</td>
<td>0.2026</td>
</tr>
<tr>
<td>R</td>
<td>16744.59</td>
<td>4092.584</td>
<td>4.157687</td>
<td>0.0059</td>
</tr>
<tr>
<td>RF</td>
<td>-32837.90</td>
<td>7446.233</td>
<td>-4.410594</td>
<td>0.0070</td>
</tr>
<tr>
<td>C</td>
<td>-1005.328</td>
<td>543.4265</td>
<td>1.849880</td>
<td>0.1236</td>
</tr>
</tbody>
</table>

R-squared: 0.956212
Adjusted R-squared: 0.921181
Standard error of regression: 264.3761
Sum of squares resid: 361061.5
Log likelihood: -66.52004
Durbin-Watson stat: 2.452155

(source: author analysis from Eviews)
Next we see below results:

<table>
<thead>
<tr>
<th></th>
<th>Coefficient 5 factors</th>
<th>Coefficient 6 factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>9010.5</td>
<td>8243.5</td>
</tr>
<tr>
<td>G</td>
<td>8489.0</td>
<td>6998.5</td>
</tr>
<tr>
<td>R</td>
<td>8225.3</td>
<td>4595.4</td>
</tr>
<tr>
<td>Rf</td>
<td>-21854</td>
<td>-18422</td>
</tr>
<tr>
<td>Sale cost</td>
<td>0.16</td>
<td>-0.02</td>
</tr>
<tr>
<td>Total revenue</td>
<td></td>
<td>0.18</td>
</tr>
<tr>
<td>C</td>
<td>-1256</td>
<td>-1454</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.98</td>
<td>0.98</td>
</tr>
<tr>
<td>SER</td>
<td>180.4</td>
<td>169.5</td>
</tr>
<tr>
<td>Akaike info criteria</td>
<td>13.5</td>
<td>13.2</td>
</tr>
</tbody>
</table>

(source: author analysis from Eviews)

**Analysis**

First of all it is easy to analyze from above table in which Risk free rate Rf has negative correlation with net profit whereas other factors have positive correlation with net profit (see table 2).

In case of 1 factor, lending rate and sale cost has positive correlation with net profit (see figure 4 and 5).

In case of 3 factors, G has negative impact while CPI and R have positive impacts on net profit (see figure 7).

**Discussion and Conclusion**

Because total revenue has higher impact on net profit than sale cost, Eximbank (EIB) need to pay more attention to selling and increasing revenues from business, as well as managing cost better.

Next, as CPI, G and R has high positive correlation with net profit, there is policy implication that CPI can increase a little but and GDP growth increase to be in favor of rising net profit of EIB.

Last but not least, we would suggest Eximbank management to improve risk management system and perform measuring factors model influencing net profit.
Limitation of Research

Our model can expanded for other factors affecting banking sustainability.

Acknowledgement

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References


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