

## **Analyzing Factors Influencing Sustainable Banking Development in Vietnam**

### **Hoang Xuan Que**

PhD, Associate Professor, National Economics University (NEU), Hanoi, Vietnam.

E-mail: quehx@neu.edu.vn

### **Dinh Tran Ngoc Huy**

MBA, Banking University HCMC, Ho Chi Minh City, Vietnam.

International University of Japan, Japan.

E-mail: dtnhuy2010@gmail.com

### **Nguyen Ngoc Thach**

PhD, Banking University HCMC, Ho Chi Minh City, Vietnam.

E-mail: Thachnn@buh.edu.vn

### **Tran Duc Thang**

PhD, National Economics University (NEU), Hanoi, Vietnam.

E-mail: tranducthang@neu.edu.vn

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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**

Banking Sustainability, Eximbank, Net Profit, Inflation, Economic Development, Vietnam.

**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 1 Summary of previous studies**

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

## 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).

	NETPROFIT	CPI	G	R	RF	SALE_COST	TOTALREV...
Mean	965.5000	0.053530	0.061090	0.115260	0.046905	7732.300	11186.30
Median	741.0000	0.038150	0.064800	0.100000	0.053350	7115.500	10375.50
Maximum	3038.000	0.181300	0.070800	0.190000	0.065350	12246.00	17549.00
Minimum	39.00000	0.006300	0.029100	0.080000	0.012200	5203.000	8310.000
Std. Dev.	943.8226	0.048052	0.012441	0.039225	0.018595	2550.025	3368.502
Skewness	1.201021	2.051303	-1.843628	1.138882	-0.570545	0.910160	1.148608
Kurtosis	3.417384	6.308044	5.524584	2.705184	2.017240	2.494767	2.796080
Jarque-Bera	2.476672	11.57272	8.320575	2.197970	0.944960	1.487010	2.216162
Probability	0.289866	0.003069	0.015603	0.333209	0.623454	0.475445	0.330192
Sum	9655.000	0.535300	0.610900	1.152600	0.469050	77323.00	111863.0
Sum Sq. Dev.	8017211.	0.020781	0.001393	0.013847	0.003112	58523660	1.02E+08

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

Correlation Matrix							
	NETPROFIT	CPI	G	R	RF	SALE_COST	TOTALREV...
NETPROFIT	1.000000	0.851442	0.015647	0.790563	0.247349	0.942551	0.955311
CPI	0.851442	1.000000	0.099628	0.744833	0.509105	0.762890	0.779690
G	0.015647	0.099628	1.000000	0.095911	0.426732	0.019830	0.029297
R	0.790563	0.744833	0.095911	1.000000	0.678900	0.856509	0.878917
RF	0.247349	0.509105	0.426732	0.678900	1.000000	0.362666	0.380364
SALE_COST	0.942551	0.762890	0.019830	0.856509	0.362666	1.000000	0.990657
TOTALREV...	0.955311	0.779690	0.029297	0.878917	0.380364	0.990657	1.000000

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

Covariance Matrix				
	NETPROFIT	SALE_COST	TOTALREV...	R
NETPROFIT	801721.1	2041653.	2733470.	26.34089
SALE_COST	2041653.	5852366.	7658559.	77.10452
TOTALREV...	2733470.	7658559.	10212122	104.5173
R	26.34089	77.10452	104.5173	0.001385

**Figure 3 EIB - covariance matrix with 3 factors**  
(source: author analysis with Eview)

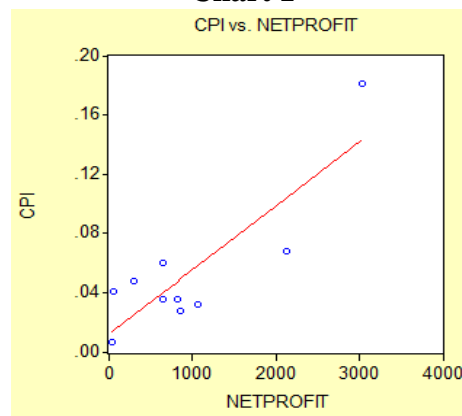
## Main Results

### 1. Overall Results

Shown in below figure we recognize that:

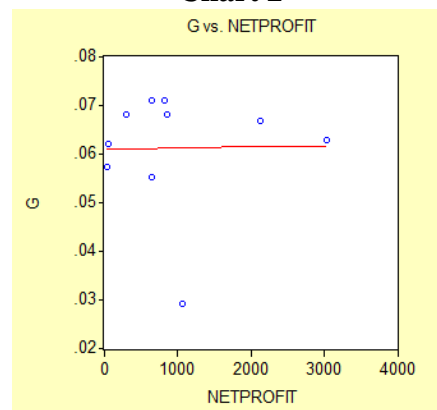
- There is positive relation between net profit and CPI, R and Rf (chart 1, chart 3, chart 4).
- there is little positive correlation (almost neutral relation) between net profit and G (chart 2).

**Chart 1**



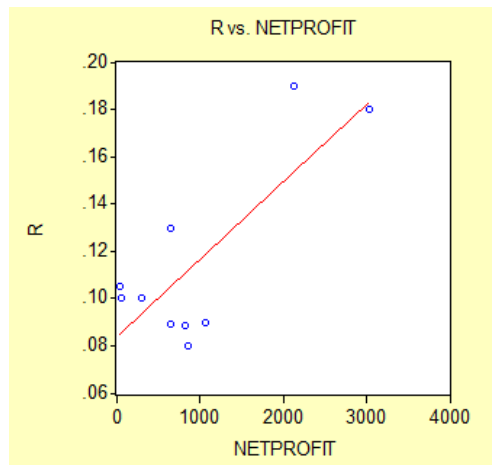
(source: author analysis with Eview)

**Chart 2**



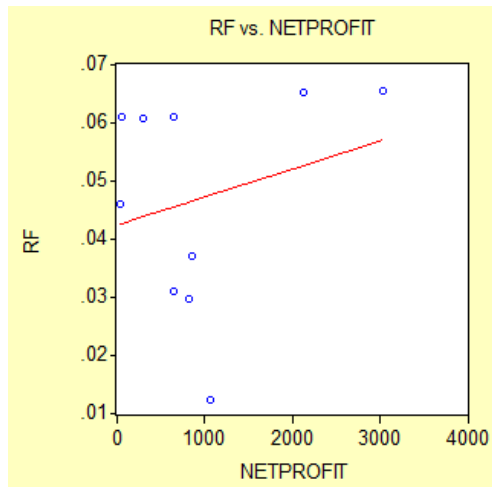
(source: author analysis with Eview)

**Chart 3**



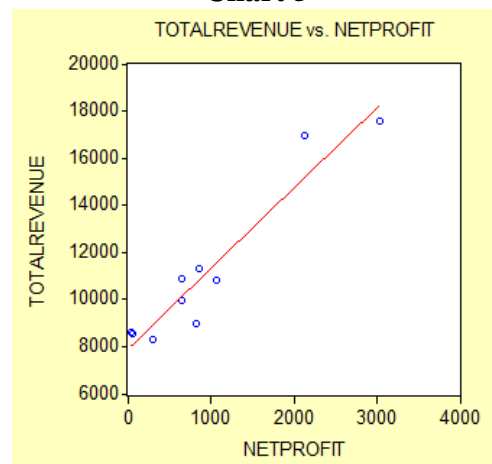
(source: author analysis with Eview)

**Chart 4**

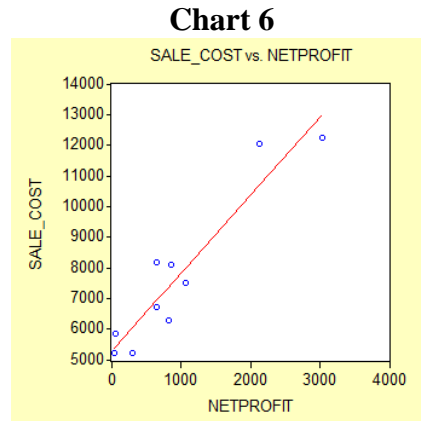


(source: author analysis with Eview)

**Chart 5**



(source: author analysis with Eview)



(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).

Dependent Variable: NETPROFIT  
 Method: Least Squares  
 Date: 12/03/21 Time: 14:44  
 Sample: 1 10  
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
R	19022.42	5209.617	3.651405	0.0065
C	-1227.025	630.9790	-1.944636	0.0877

R-squared	0.624990	Mean dependent var	965.5000
Adjusted R-squared	0.578114	S.D. dependent var	943.8226
S.E. of regression	613.0390	Akaike info criterion	15.85159
Sum squared resid	3006535.	Schwarz criterion	15.91211
Log likelihood	-77.25795	F-statistic	13.33276
Durbin-Watson stat	0.716703	Prob(F-statistic)	0.006481

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

Dependent Variable: NETPROFIT  
 Method: Least Squares  
 Date: 12/03/21 Time: 14:44  
 Sample: 1 10  
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SALE_COST	0.348859	0.043715	7.980323	0.0000
C	-1731.986	354.1743	-4.890208	0.0012

R-squared	0.888402	Mean dependent var	965.5000
Adjusted R-squared	0.874452	S.D. dependent var	943.8226
S.E. of regression	334.4227	Akaike info criterion	14.63955
Sum squared resid	894708.6	Schwarz criterion	14.70006
Log likelihood	-71.19773	F-statistic	63.68556
Durbin-Watson stat	1.352149	Prob(F-statistic)	0.000044

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

Dependent Variable: NETPROFIT  
 Method: Least Squares  
 Date: 12/03/21 Time: 14:45  
 Sample: 1 10  
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
R	-5775.066	5745.018	-1.005230	0.3536
SALE_COST	-0.144119	0.309074	-0.466294	0.6575
TOTALREVENUE	0.434857	0.253183	1.717557	0.1367
C	-2118.930	414.8283	-5.107970	0.0022

R-squared	0.925891	Mean dependent var	965.5000
Adjusted R-squared	0.888836	S.D. dependent var	943.8226
S.E. of regression	314.6826	Akaike info criterion	14.63018
Sum squared resid	594150.8	Schwarz criterion	14.75121
Log likelihood	-69.15090	F-statistic	24.98712
Durbin-Watson stat	1.965163	Prob(F-statistic)	0.000865

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

Dependent Variable: NETPROFIT  
 Method: Least Squares  
 Date: 12/03/21 Time: 14:47  
 Sample: 1 10  
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	11681.72	5566.330	2.098640	0.0806
R	8542.613	6816.495	1.253227	0.2567
G	-5891.320	14411.70	-0.408787	0.6969
C	-284.5435	1046.288	-0.271955	0.7948

R-squared	0.785845	Mean dependent var	965.5000
Adjusted R-squared	0.678767	S.D. dependent var	943.8226
S.E. of regression	534.9339	Akaike info criterion	15.69134
Sum squared resid	1716926.	Schwarz criterion	15.81237
Log likelihood	-74.45669	F-statistic	7.339030
Durbin-Watson stat	1.113043	Prob(F-statistic)	0.019678

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

Dependent Variable: NETPROFIT  
 Method: Least Squares  
 Date: 12/03/21 Time: 14:46  
 Sample: 1 10  
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	11485.81	2757.603	4.165143	0.0088
G	12043.78	8215.655	1.465954	0.2026
R	18744.58	4092.804	4.579887	0.0059
RF	-32837.90	7445.233	-4.410594	0.0070
C	-1005.328	543.4265	-1.849980	0.1236

R-squared	0.956212	Mean dependent var	965.5000
Adjusted R-squared	0.921181	S.D. dependent var	943.8226
S.E. of regression	264.9761	Akaike info criterion	14.30401
Sum squared resid	351061.5	Schwarz criterion	14.45530
Log likelihood	-66.52004	F-statistic	27.29631
Durbin-Watson stat	2.452156	Prob(F-statistic)	0.001360

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

Next we see below results:

**Table 2 EIB OLS for 5 and 6 factors**

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

(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 be expanded for other factors affecting banking sustainability.

## **Acknowledgement**

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