

Impact of Green Banking on the Financial Performance of Public Sector Bank in India

Aarti*, Silender Singh**

Abstract

This study examines the impact of green banking initiatives on the financial performance of public sector banks in India. Utilising an ex-post facto research approach, data was sourced from secondary platforms, including the Reserve Bank of India's (RBI) official website and financial market records, spanning from 1 April, 2019, to 31 March, 2023. The research primarily aims to assess the correlation between Green Banking Practices (GBP) and financial outcomes while evaluating the impact of these sustainable strategies on the performance of Indian banks. Data analysis was carried out using both descriptive and inferential statistical techniques. The results reveal a substantial positive impact of GB on the Financial Performance (FP) of Indian public sector banks. Consequently, the study advocates for increased adoption of GBP by bank management to foster improved financial results and promote environmental sustainability.

Keywords: Green Banking Practices (GBP), Financial Performance (FP), Mobile Transactions (MT), National Electronic Fund Transfer (NEFT), Return on Assets (ROA), Return on Equity (ROE)

Introduction

Environmental change is one of the most critical social and economic challenges facing nations around the globe. Increasing concerns about environmental degradation present significant hurdles for businesses and societies alike. In response, financial institutions are placing greater emphasis on sustainable and eco-conscious practices to reduce the carbon footprint associated with

their operations. While banks contribute to environmental impacts, they are also essential drivers of economic development. By acting as financial intermediaries, banks indirectly affect the environment. Their everyday activities require the use of various resources, including paper, electricity, lighting, air conditioning, technology, and other materials, all of which lead to carbon emissions. Green banking aims to foster eco-friendly practices, reduce carbon emissions, and adopt sustainable internal policies, infrastructure, and technological advancements within the banking industry.

Concept of Green Banking

“Green banking” integrates the concepts of sustainability and financial services, where “green” symbolises eco-consciousness and “banking” relates to delivering monetary services. As highlighted by Nisha et al. (2020), “green banking aims to improve a bank’s operational efficiency while fostering environmental stewardship.” Also termed ethical banking, it focuses on minimising the environmental impact of banking activities. Green banking encompasses various sustainable products and services, such as ATMs, SMS banking, mobile and online banking, energy-efficient technologies, green credit cards, Aadhaar-enabled payment systems, green loans, green mortgages, green money market accounts, electronic fund transfers, and eco-friendly finance solutions. This research places particular emphasis on mobile banking and the National Electronic Funds Transfer (NEFT) system, both key components of electronic banking. “The rise of electronic banking is steering the economy towards a cashless society, where physical cash is rarely used, and payments are increasingly made through electronic credit

* Ph.D. Research Scholar, Department of Commerce, Chaudhary Devi Lal University, Sirsa, Haryana, India.
Email: aarti910bedi@gmail.com

** Supervisor, Professor of Commerce Department, Chaudhary Devi Lal University, Sirsa, Haryana, India.
Email: silendersingh@cdlu.ac.in

transfers directly into sellers' accounts" (Mueni & Atheru, 2019).

Literature Review

Dawood et al. (2021) explored sustainability practices among Egyptian-listed banks and assessed their financial outcomes. The study analysed annual and sustainability reports from ten banks between 2012 and 2019 using descriptive analysis and multivariate regressions. The findings revealed that only two banks made significant investments in sustainable development, while others remained moderately engaged. The adoption of sustainability practices had a notable effect on financial performance, influencing metrics like ROA, ROE, CFP1, and capacity ratios.

Deeksha and Rani (2023) examined the effect of fraudulent activities on the Financial Performance (FP) of private-sector banks in India. They adopted an ex post facto design and secondary data, employing ordinary least squares regression to assess the associations. The results indicated that fraudulent activities negatively affect financial performance, though the frequency of fraudulent incidents did not significantly impact financial stability.

Dzombo et al. (2017) assessed how agency and electronic banking affect FP in Kenyan commercial banks using an exploratory design. Both banking models negatively influenced performance at a 5% significance level, but a multichannel strategy combining them led to improved performance.

Hoque et al. (2022) analysed the relationship between GB disclosures and FP among banks listed on the Dhaka Stock Exchange. Using 70 samples from 2014 to 2017, the study identified profitability, liquidity, and solvency as variables affecting green banking expenditures. The findings indicated a positive correlation between green disclosures and ROA, implying that banks should prioritise green initiatives to foster sustainable growth.

Hossain et al. (2020) analysed the impact of green banking policies on the FP of Bangladeshi banks between 2011 and 2020. The study, using panel data, linked green costs and the volume of risk management committee activity to performance indicators like ROA, ROE, and market value. Results demonstrated a positive association between green banking and financial success.

Madugba et al. (2021) studied the effect of electronic banking on Nigerian deposit money banks using public data and an ex post facto method. Data quality was ensured through normality and multicollinearity tests. The findings showed that ATMs positively affect EPS and ROA, while POS and NEFT significantly impact ROA. Conversely, web-based banking had an insignificant effect on both EPS and ROA.

Mateka et al. (2017) explored the influence of internet banking on Kenyan commercial banks using a descriptive survey. SPSS was used for data analysis, showing that online banking improves revenue, cost management, loan book expansion, and client deposit mobilisation through enhanced convenience.

Mueni and Atheru (2019) analysed the impact of electronic banking on Kenyan commercial banks from 2011 to 2015. Data from 44 banks were processed using descriptive and inferential statistics, showing that internet banking positively affects ROA and net profit, contributing to improved financial outcomes.

Okiro and Ndungu (2013) assessed how mobile and internet banking usage impacted FP in 61 Kenyan financial institutions. Using descriptive and qualitative analysis, they found that internet banking was most widely used, significantly enhancing institutional performance by 66.7%.

Putri et al. (2022) evaluated the impact of green banking on profitability in Indonesian state-owned banks using multiple regression. ROA was significantly affected by the capital adequacy ratio, non-performing loans, and loan-to-deposit ratio, while the number of ATMs had no impact. The study recommended leveraging technology to enhance green banking through energy savings and reduced paper usage.

Ramdani et al. (2023) investigated the effect of the COVID-19 pandemic on the profitability of Islamic banks in Indonesia (2015–2021). The study employed dynamic and static panel data methods, identifying significant links between green banking adoption and profitability. However, pandemic-related disruptions adversely affected profits, offering insights for sustainable policy development.

S & C (2023) analysed the correlation between digital financial performance and EPS in Indian banks from

2017 to 2019. Using descriptive and inferential statistics on secondary data, the findings indicated that electronic banking enhances performance by improving service accessibility.

Objectives

- To investigate the relationship between GBP and the FP of banks in India.
- To evaluate the influence of GBP on the FP of banks in India.

Hypothesis of the Study

H1: GBP are notably correlated with the FP of banks in India.

H2: GBP have a considerable influence on the ROA.

H3: GBP have a substantial impact on the ROE.

Research Methodology

Sample Selection: This study focuses on the top four public sector banks in India, listed on the BSE index. The banks were selected based on their market capitalisation as of 31st March 2023. The sample includes the following banks:

Table 1

Sr. No.	Company Name	Ownership	Market Cap (Rs. Cr.)
1	SBI	Public	467381.93
2	BOB	Public	87292.59
3	PNB	Public	51432.45
4	IOB	Public	42624.94

Source: <https://www.bseindia.com/static/about/downloads.aspx>

Research Design and Data Source

This study uses an ex post facto design, leveraging historical data to investigate the connections between different banking performance metrics. The research is based solely on secondary data sourced from reliable financial databases. Key sources include:

- Reserve Bank of India (RBI) official website

- Money Control

These sources provide comprehensive data related to mobile banking, fund transfers, and the FP of the selected banks.

Study Period

The study spans a four-year period from 1st April 2019 to 31st March 2023, allowing for an in-depth analysis of trends over time in relation to mobile banking and financial performance.

Study Variables

The following variables are central to the research:

- *Mobile Transactions (MT):* Mobile banking enables customers to utilise banking services without the need to visit a physical branch. It is especially valuable for underserved populations, offering convenience for balance inquiries, transfers, and bill payments, and contributing to environmental sustainability by reducing electricity and paper usage (Ullah, 2013). This study investigates the role of Mobile Transactions (MT) in improving banking accessibility and efficiency.
- *National Electronic Funds Transfer (NEFT):* NEFT is a nationwide payment system designed to facilitate the transfer of funds between banks. It was introduced by the Reserve Bank of India to improve payment efficiency and strengthen security. NEFT has become a crucial system for various transactions, such as salary transfers and payments. It is widely regarded for its reliability and security in transferring money across institutions.
- *Return on Assets (ROA):* ROA measures a bank's profitability in relation to its total assets, providing insight into how efficiently the bank's management leverages its resources to generate profits. A higher ROA reflects more effective asset utilisation and better operational performance (Ongore & Kusa, 2013). The formula for calculating ROA is:

$$\text{ROA} = \text{Net Income} / \text{Total Assets}$$

ROA is crucial for assessing how well a bank is performing in generating profits from its assets.

Return on Equity: ROE is an important indicator used to assess a bank's ability to generate profits from the capital invested by its shareholders. It shows how well the bank utilises shareholder equity to generate earnings. A higher ROE reflects more effective management in turning equity into profits (Ongore & Kusa, 2013). The ROE is calculated using the following formula:

$$\text{ROE} = \text{Net Income} / \text{Shareholders' Equity}$$

ROE serves as a benchmark for assessing a bank's profitability from an investor's perspective.

Model Specification

The study presents the relationship between the dependent and independent variables using the following equations:

$$\log\text{ROA}_1 = \beta_0 + \beta_1\text{LMT} + \beta_2\text{LNEFT} + \epsilon_t \quad \dots \quad (1)$$

$$\log\text{ROE}_1 = \beta_0 + \beta_1\text{LMT} + \beta_2\text{LNEFT} + \epsilon_t \quad \dots \quad (2)$$

where:

$\log\text{ROA}_1$ = Log of return on assets; is the dependent variable

$\log\text{ROE}_1$ = Log of return on equity; is the dependent variable

LMT = Log of mobile transactions; is the independent variable

LNEFT = Log of national electronic fund transfer; is the independent variable β_0 = Slope of regression intercept

β_1, β_2 = Slope coefficient for each of the independent variables

ϵ_t = Error term;

Tool Used for Analysis

- Descriptive Statistics
- Correlation
- OLS Regression

Result and Discussion

Descriptive Statistics: Table 2 presents the descriptive statistics for the period from 1st April, 2019 to 31st March, 2023. The results show that the average logged value for mobile transactions (LMT) is 9.214729, with a minimum value of 8.044323 and a maximum of 10.32230. The average logged value for national electronic funds transfer (LNEFT) is 8.470904, ranging from a low of 7.811125 to a high of 9.196941. The mean values for the dependent variables, ROA and ROE, are 0.443310 and 1.650243, respectively.

Table 2: Results of Descriptive Statistics During the Period of 01.04.2019 to 31.03.2023

Descriptive Statistics	LMT	LNEFT	LogROA_1	LogROE_1
Mean	9.214729	8.470904	0.443310	1.650243
Median	9.290631	8.439778	0.516712	1.766090
Maximum	10.32230	9.196941	0.982271	2.224015
Minimum	8.044323	7.811125	-0.397940	0.763428
SD	0.647047	0.437590	0.443469	0.446424
Skewness	-0.209381	0.178634	-0.762953	-0.721096
Kurtosis	2.235516	1.947628	2.475828	2.434164
Jarque-Bera	0.506532	0.823418	1.735432	1.600060
Probability	0.776261	0.662517	0.419909	0.449315
Observations	16	16	16	16

Source: Data collected from RBI and Money Market Site and computed from the using form E-Views.

The variables cover distinct ranges, with ROA ranging from -0.397940 to 0.982271 and ROE from 0.763428 to 2.224015. The standard deviation is smaller than the mean, indicating that the data are concentrated around the mean. For variables with negatively predicted LNEFT values, the skewness is 0.178634. Furthermore, the kurtosis values for all variables are below 3, suggesting a platykurtic distribution. The Jarque-Bera test results for all variables are greater than 0.05 at the 5% significance

level, confirming that the data are normally distributed.

Correlation: Table 3 shows the Pearson correlation coefficients for four variables: LMT, LNEFT, LogROA_1, and LogROE_1. The results reveal a strong positive correlation between LMT and LogROA_1, with a significant p-value of 0.002 ($p < 0.05$). In comparison, a weak positive correlation is found between LNEFT and LogROA_1, with a p-value of 0.210.

Table 3: Result of Correlation Between the Dependent and Independent Variables

		<i>LMT</i>	<i>LNEFT</i>	<i>LogROA_1</i>	<i>LogROE_1</i>
<i>LMT</i>	Pearson Correlation	1	.825**	.720**	.751**
	Sig. (2-tailed)		.000	.002	.001
	N	16	16	16	16
<i>LNEFT</i>	Pearson Correlation	.825**	1	.331	.418
	Sig. (2-tailed)	.000		.210	.107
	N	16	16	16	16
<i>LogROA_1</i>	Pearson Correlation	.720**	.331	1	.991**
	Sig. (2-tailed)	.002	.210		.000
	N	16	16	16	16
<i>LogROE_1</i>	Pearson Correlation	.751**	.418	.991**	1
	Sig. (2-tailed)	.001	.107	.000	
	N	16	16	16	16

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Data collected from RBI and Money Market Site and computed from the using SPSS version 26.

The correlation between LNEFT and LogROE_1 is notable but not statistically significant, suggesting a weak positive relationship. The correlation between LNEFT and both LogROA_1 and LogROE_1 are less significant, while the relationship between LMT and all other variables are statistically significant. Therefore, the alternative hypothesis is supported.

OLS Assumptions

Table 4 shows that the classical assumptions of OLS are met. At the second difference level, only LogROA_1 is stationary, as confirmed by the Augmented Dickey-Fuller (ADF) test at the 5% significance level. On the other hand, all other variables become stationary at the first difference, satisfying the initial data stationarity condition.

Table 4: OLS Assumption Summary

<i>Assumption</i>	<i>Test</i>	<i>Remark</i>	<i>Appendices*</i>
Stationarity	Augmented Dickey-Fuller	Fulfilled	Table A1
Multicollinearity	Variance Inflation Factor	Fulfilled	Table A2
Autocorrelation	Breusch-Godfrey Test	Fulfilled	Table A3
Heteroskedasticity	Breusch-Pagan-Godfrey	Fulfilled	Table A4

Note: * Complete results are presented in Appendix.

The Variance Inflation Factor (VIF) test further examines multicollinearity. With all VIF values falling below the thresholds of 10, it confirms the absence of multicollinearity issues. Additionally, we performed the Breusch-Godfrey test for serial correlation, resolving the autocorrelation problem by applying log transformations to the variables. In the Breusch Pagan-Godfrey test for heteroskedasticity, a p-value above 0.05 validates the null hypothesis of homoskedasticity, suggesting that the residual error remains stable throughout the dataset.

OLS Regression: The results displayed in Tables 5 and 6 highlight the effect of the independent variables on the dependent variables. According to Table 5, LNEFT exhibits a statistically significant negative impact on LogROA_1 for the public sector banks examined in this study ($t = -3.253363$, $p = 0.0063 < 0.05$). Conversely, LMT shows a statistically significant positive impact on LogROA_1 ($t = 5.533635$, $p = 0.0001 < 0.05$).

Table 5: Impact of LogNEFT and LogMT on LogROA_1

Variable	Coefficient	Standard Error	t-Statistic	p-Value
C	-1.329852	1.243139	-1.069753	0.3042
LNEFT	-0.832958	0.256030	-3.253363	0.0063
LMT	0.958147	0.173150	5.533635	0.0001
R-squared= 0.734641				
Adjusted R-squared= 0.693817				
S.E. of regression= 0.245388				
F-statistic= 17.99516				
Prob(F-statistic) = 0.000180				
Durbin-Watson stat= 1.993441				

Source: Data computed from using E-VIEWS 12.

The R^2 value of 0.73 indicates that LNEFT and LMT account for 73% of the variation in LogROA_1, with the remaining 27% influenced by other factors. The model is

statistically significant, as evidenced by the F-statistic ($F = 17.99$, $p = 0.000$), supporting the alternative hypothesis.

Table 6: Impact of LogNEFT and LogMT on LogROE_1

Variable	Coefficient	Standard Error	t-Statistic	p-Value
C	-0.982470	1.347924	-0.728876	0.4790
LNEFT	-0.643886	0.277610	-2.319386	0.0373
LMT	0.877618	0.187744	4.674532	0.0004
R-squared= 0.692139				
Adjusted R-squared= 0.644776				
S.E. of regression= 0.266072				
F-statistic= 14.61342				
Prob(F-statistic) = 0.000472				
Durbin-Watson stat= 1.858569				

Source: Data computed from using E-VIEWS 12.

As shown in Table 6, LNEFT has a significant negative effect on LogROA_1 for the public sector banks analysed ($t = -2.319386$, $p = 0.0373$, which is less than 0.05). In contrast, LMT has a statistically significant positive effect on LogROA_1 ($t = 4.674532$, $p = 0.0004$, also less than 0.05).

The R^2 value of 0.69 indicates that LNEFT and LMT account for 69% of the variation in LogROA_1, while other factors explain the remaining 31%. The model is statistically significant, with an F-statistic of 14.61 and a p-value of 0.000, supporting the acceptance of the alternative hypothesis.

Discussion

This study explores the impact of GBP on the FP of public sector banks in India, utilising both descriptive and inferential statistics to analyse the data and evaluate the connections between the DV and IDV. The findings in Table 3 indicate that the correlation between LNEFT and LogROA_1, as well as LogROE_1, is weak, whereas LMT exhibits a strong statistical association with all other variables ($p < 0.05$), which supports the acceptance of Hypothesis 1 (H1). The regression analysis further reinforces the notion that Green Banking Practices (GBP) influence the bank's financial performance. Table 4 confirms that the classical OLS regression assumptions are satisfied. In Table 5, the results indicate that LNEFT has a significant negative effect on LogROA_1 ($t = -3.253363$, $p = 0.0063 < 0.05$), whereas LMT has a positive impact on LogROA_1 ($t = 5.533635$, $p = 0.0001 < 0.05$). The overall model is statistically significant ($F = 17.99$, $p = 0.000$), supporting the acceptance of Hypothesis 2 (H2). Similarly, Table 6 shows that LNEFT negatively influences LogROA_1 ($t = -2.319386$, $p = 0.0373 < 0.05$), while LMT has a significant positive effect on LogROA_1 ($t = 4.674532$, $p = 0.0004 < 0.05$). The model's F-statistic is robust ($F = 14.61$, $p = 0.000$), confirming the acceptance of Hypothesis 3 (H3). The study concludes that GBP positively impact the FP of public sector banks.

Conclusion

GB involves the initiatives and measures taken by banks to reduce their environmental impact and encourage sustainable growth. Recent research indicates that these GBP can considerably influence a bank's financial performance. A study on Indian banks reveals that NEFT has an adverse effect on financial results, whereas Mobile Transactions (MT) have a positive impact. The study highlights that both mobile banking and NEFT facilitate paperless transactions, reduce carbon emissions, and aid in environmental sustainability.

Limitation and Future Scope

This study focuses on MB and NEFT, excluding other GBP such as ATMs, SMS banking, energy-efficient equipment, green credit cards, Aadhar-enabled payment systems, green loans, and green finance. It specifically examines ROA and ROE, leaving out other FP metrics.

The conclusions are drawn from a limited sample of the top four public sector banks between 2019 and 2023. Increasing the sample size could yield more insightful results. For a more comprehensive understanding, future research should incorporate both public and private sector banks. Moreover, using a variety of statistical methods could provide a more detailed analysis of the impact of GBP on FP.

References

- Dawood, A. S. M., Saied, M. E., & Bahnasawy, A. A. E. (2021). The impact of sustainability practice for Egyptian listed banks on its financial performance. *International Journal of Management Studies and Social Science Research*, 3(4), 281–300.
- Deeksha, & Rani, K. (2023). Impact of fraud on the financial performance of private sector banks in India. *The IUP Journal of Bank Management*, 22(4), 41–54.
- Dzombo, G. K., Kilika, J. M., & Maingi, J. (2017). The effect of branchless banking strategy on the financial performance of commercial banks in Kenya. *International Journal of Financial Research*, 8(4), 167–183. doi:<https://doi.org/10.5430/ijfr.v8n4p167>
- Hoque, Md. K., Masum, M. H., & Babu, M. A. (2022). Impact of financial performance on green banking disclosure: Evidence from the listed banking companies in Bangladesh. *Universal Journal of Accounting and Finance*, 10(2), 450–456. doi:<https://doi.org/10.13189/ujaf.2022.100209>
- Hossain, A., Rahman, Md. M., Hossain, M. S., & Karim, Md. R. (2020). The effects of green banking practices on financial performance of listed banking companies in Bangladesh. *Canadian Journal of Business and Information Studies*, 2(6), 120–128. doi:<https://doi.org/10.34104/cjbis.020.01200128>
- Madugba, J., Egbide, B.-C., Wozuru Jossy, D., Toby Agburuga, U., & Onyebuchi Chibunna, O. (2021). Effect of electronic banking on financial performance of deposit money banks in Nigeria. *Banks and Bank Systems*, 16(3), 71–83. doi:[https://doi.org/10.21511/bbs.16\(3\).2021.07](https://doi.org/10.21511/bbs.16(3).2021.07)
- Mateka, M., Gogo, D. J., & Omagwa, J. (2017). Effects of internet banking on financial performance of listed commercial banks in Kenya. *American Journal of Finance*, 1(2), 53–71. doi:<https://doi.org/10.47672/ajf.123>
- Mueni, M. M., & Atheru, G. (2019). Electronic banking and financial performance of commercial banks in

- Kenya. *International Journal of Current Aspects*, 3(2), 293–304.
- Nisha, N., Iqbal, M., & Rifat, A. (2020). Green banking adoption: An examination of state-owned banks of Bangladesh. *International Journal of Technology and Human Interaction*, 16(2), 69–89. doi:https://doi.org/10.4018/IJTHI.2020040106
- Okiro, K., & Ndungu, J. (2013). The impact of mobile and internet banking on performance of financial institutions in Kenya. *European Scientific Journal*, 9(13), 146–161.
- Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237–252.
- Putri, P. I., Nurjannah, R. K., Rahmayani, D., & Siregar, M. E. S. (2022). The effect of green banking and financial performance on banking profitability. *Quality - Access to Success*, 23(191), 38–44. doi:https://doi.org/10.47750/QAS/23.191.05
- Ramdani, R., Mawardi, I., & Sulaeman, S. (2023). Impact of green banking implementation, financial performance, and COVID-19 crisis on Islamic bank profitability in Indonesia. *International Journal of Islamic Economics and Finance (IJIEF)*, 6(2), 225–246. doi:https://doi.org/10.18196/ijief.v6i2.16802
- Vanitha, S., & Bhuvanewari, C. (2023). Impact of digital banking transactions and financial performance of selected banks in India. *International Journal of Management (IJM)*, 11(10), 2977–2988. doi:https://doi.org/10.17605/OSF.IO/7FGK4
- Ullah, M. (2013). Green banking in Bangladesh - A comparative analysis. *World Review of Business Research*, 3(4), 74–83.

Appendix

OLS Assumptions Test Results

Table A1: Unit Root Test Result

Variables	ADF	Unit Root @5%	p-Value	Order Integration
LogROA_1	-6.247777	-3.175352	0.0005	2 nd difference-1(2)
logROE_1	-4.973780	-3.119910	0.0022	First difference -1(1)
lmt	-4.602102	-3.175352	0.0054	First difference -1(1)
lneft	-5.046760	-3.144920	0.0023	First difference -1(1)

Table A2: Variance Inflation Factor Result

$\logROA_1 = \beta_0 + \beta_1LMT + \beta_2LNEFT + \varepsilon_t$			
Variable	Coefficient Variable	Uncentered VIF	Centered VIF
C	1.545395	410.6315	NA
LNEFT	0.065551	1252.962	3.126792
LMT	0.029981	679.5542	3.126792

$\logROE_1 = \beta_0 + \beta_1LMT + \beta_2LNEFT + \varepsilon_t$			
Variable	Coefficient Variable	Uncentered VIF	Centered VIF
C	1.816898	410.6315	NA
LNEFT	0.077068	1252.962	3.126792
LMT	0.035248	679.5542	3.126792

Table A3: Serial Autocorrelation Test Result

$\logROA_1 = \beta_0 + \beta_1LMT + \beta_2LNEFT + \varepsilon_t$	
F-statistic= 0.096535	Prob. F (2,11) = 0.9087
Obs*R-squared=0.275985	Prob. Chi-Square (2) = 0.8711

$\log ROE_{-1} = \beta_0 + \beta_1 LMT + \beta_2 LNEFT + \varepsilon_t$	
F-statistic= 0.081872	Prob. F= 0.9219
Obs*R-squared= 0.234679	Prob. Chi-Square (2) = 0.8893

Table A4: Heteroskedasticity Test Result

$\log ROA_{-1} = \beta_0 + \beta_1 LMT + \beta_2 LNEFT + \varepsilon_t$	
F-statistic= 0.094529	Prob. F (2,13) = 0.9104
Obs*R-squared= 0.229351	Prob. Chi-Square (2) = 0.8917
Scaled explained SS= 0.139116	Prob. Chi-Square (2) = 0.9328