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The Impact of the Global Financial Crisis on the UK Banking System

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Abstract. This study's objective is to determine the extent to which the global financial crisis has had an impact on commercial banks located in the United Kingdom. The research project utilized a straightforward random sample method and collected data from the websites of UK commercial banks. The project collected data from a representative sample of commercial banks operating in the UK every year between the years 2006 and 2015. Descriptive statistics, correlation analysis, and regression modelling are all going to be utilized in this study's data collection and interpretation processes. In this inquiry, the dependent variable that was utilized to determine how well banks performed before, during, and after the beginning of the global financial crisis was the return on equity, which is also known as ROA. According to the findings of the study, when multiple correlations and multiple regressions were taken into consideration, it was found that the independent variables were responsible for a total of 57% of the variance (ROA) in the dependent variable. This was discovered after accounting for multiple correlations and multiple regressions.

Keyword: Global Financial Crisis, the UK Banking System.

1. Introduction

As indicated by Claessens and Van Horen, the worldwide financial crisis changed the development of the financial area and prompted effective regulation methods being executed by legislatures and financial establishments [1]. As per Bennett and Kottasz, the worldwide financial crisis brought about another arrangement of stores and loaning in the banks of the United Kingdom [2]. This was finished with an end goal to relieve the adverse consequences of the crisis. As per Laeven et al, how much the crisis harmed the financial business was subject to the frameworks and cycles for conveying financial administrations that had been taken on in financial preceding the crisis [3]. All in all, the seriousness of the harm to the financial not set in stone by the frameworks and cycles that were set up. There is no sign, as per a survey of the important writing and past examination, that the financial crisis straightforwardly affected banking in the UK. There have just been a small bunch of studies directed on the improvement of banking frameworks following the 2008 worldwide financial crisis, like the one in the United States. With the end goal of this request, we will involve commercial banks as a contextual investigation to assess the impact that the worldwide financial crisis has had on the financial area in the UK.

The research content of this paper is: 1）What is the impact of global financial crisis on the efficiency of UK banking systems? 2）What are the changes that occurred in the UK banking system after and before the global financial crisis? 3）What is the effectiveness of the financial performance of the UK banks during and after the global financial crisis?

2. Literature Review

The majority of academics are hustling to keep up with new research on the global financial crisis that is being released. Howarth conducted research at 260 commercial bank branches across the United Kingdom to assess the impact that the economy had on investment strategies during the global financial crisis [4]. The research used ordinary least squares (OLS) to analyze the data from the banks in order to discover whether or not there was a connection between the global financial crisis and the change in investment systems that occurred between 2007 and 2009. According to the findings of the

study, the global financial crisis has caused UK banks to change the way they invest their money. As a result of the crisis, the authors witnessed a reduction in investments as well as a shift in the various financial systems. Bernanke conducted a survey of 260 commercial banks in the United Kingdom in order to determine the influence that the financial crisis had on investment strategy. The findings of the study, which drew its conclusions on the relationship between the global financial crisis and the change in investment systems that took place between 2007 and 2009, were based on data obtained from various financial institutions and evaluated with OLS software. The research indicates that the current economic crisis has had an effect on the shift in investment methods employed by the banking system in the UK. Following the escalation of the financial crisis and the subsequent reorganization of banking institutions, the authors observed a precipitous decline in the amount of money spent on investments.Chan-Lau (2010) and Bordo and Landon-Lane (2010) both expect that second-tier financial centres, such as Hong Kong and Singapore, would lose their prominence in the near future. This is due to the fact that second-tier financial centres are less competitive and more susceptible to economic shifts. Chan-Lau provided an in-depth history of the evolution of several financial centres located throughout Europe (2010). Bordo and Landon-Lane (2010) concur in their forecast that the function of seconds will decrease over time [5]. According to Howarth (2013)'s forecast, London will continue to expand as a major financial centre at the expense of minor locations such as Amsterdam and Frankfurt [6].

3. Theoretical Framework

3.1. Uncertainty and Herd Behavior Theory

This explains how members of a group can spontaneously band together and carry out their duties as a unit even if they have not previously planned their activities. This statement is used in connection to groups of animals, such as herds, flocks, and schools, as well as in reference to bubbles and crashes in the stock market. Herds, flocks, and schools of animals are all examples of groups of animals. Large-scale shifts in the stock market are frequently characterized by (Bubbles) and "Selloffs," two terms that mean "selling off" (crushes). During both the bubbles and the crashes, many observers pointed to certain incidents as unmistakable proof of herding behaviour, which is defined as behaviour that is not only illogical but also driven by emotions such as greed or fear. One illustration of this would be the sale of assets in a frenzy at prices below their market value, which might cause the financial market to become unstable.

3.2. Financial Theory and Stock Market Volatility Theory

According to this theory, depositors at illiquid local banks are likely to exert pressure on the banks if an event takes place that causes agents to want liquidity that is in excess of their normal cash flows. This theory suggests that depositors will likely exert this pressure if an event takes place that causes agents to want liquidity. The event in question would be one that drives agents to demand liquidity in excess of their typical cash flows. This would be the case if the event in question occurred. When the central bank needs to make payments to other banks, it takes money out of its reserves and uses that money to make those payments. Because of this, financial institutions are forced to sell their valuable securities at a loss, which creates significant tension in the money market and, the majority of the time, a crisis in the economy of the entire world. When individuals have a little number of savings, they rely on their prior savings; however, when banks are short of funds, they are forced to either borrow from the Central Bank or sell their assets. People rely on their previous savings when they have a low amount of savings [5]. According to the idea of stock market volatility, crashes in the stock market come before and are implicated in bank panics and economic recessions. In addition, crashes in the stock market are believed to cause economic recessions. The recent rise in the short-term interest rate has been attributed, at least in part, to the increased volatility of the stock market as well as an increase in the demand for borrowing money to fund stock speculation. This explanation is supported by a number of hypotheses. The consistent rise in stock prices serves as a catalyst for

stock speculation, which is unrelated to the core fundamentals of the company and is driven by market sentiment. When a market bubble bursts, it is immediately common knowledge exactly how financially unstable the institutions that sponsored public speculation were.

3.3. Business Cycle Theory and Interest Rates Theory

When multiple companies' financial situations deteriorate at the same time, we call this a crisis. A crisis is considered to occur when the business cycle is at its most expansive point during the expansion phase. Banks rethink how much acknowledgement is to be given because of a reduced viewpoint on future productivity; thus, they will not give new credit and look for liquidation of exceptional credits. Since organizations can't renegotiate their obligation, they are compelled to exchange their resources, which causes a multiplicative decrease in business benefits. This, thus, causes trouble, which prompts an accident in resource markets and an ensuing financial crisis [7]. Soaring loan costs lead to a decrease in resource costs, an expansion in liquidation and bankruptcy, which prompts gigantic drops in the loading of cash available for use, and a breakdown in the eight-distribution arrangement of financial capital, which at last outcomes in a financial crisis [8].

4. Research Methodology

This chapter explains the type of data and where it came from, the targeted population, the methods of sampling, and the techniques used to determine the sample size. Descriptive statistics and specific empirical methodologies are being used to test the relationship between the study's various factors in order to ascertain the impact that the economic crisis has had on the banking systems in the UK.

4.1. Sample and Data Collection

The majority of financial institutions in the UK were impacted by the global financial crisis. The crisis has caused a significant upheaval, which has resulted in banks updating their operational procedures in order to take advantage of new financial strategies to combat the economic downturn. In order to determine the answers to the current research questions, the study employed a straightforward random sample method and gathered the necessary information from the websites of UK commercial banks. The project will collect data from a representative sample of commercial banks operating in the UK on a yearly basis between the years 2006 and 2015. The various commercial Banks' databases on the study variables provided the yearly data that was used to evaluate the impact that the financial crisis had on the system of commercial banks in the United Kingdom. ROA, which stands for return on assets of the banks, Total banks' assets, and EBIT were the variables that were taken into consideration (Earnings before interest and taxes).

4.2. Variables Definition

4.2.1 Dependent Variable

This study considered return on Assets (ROA) as a measure of profitability[1]. Return on Assets, abbreviated as ROA, is a performance metric that measures the amount of return earned by shareholders on the asset that they have invested in a company. The return on equity is a measure of a bank's profitability; it is calculated by dividing the bank's net income by the total amount of equity held by the organization. A high ROA is evidence that the bank is improving its management performance and showing that it is making good use of the money that it receives from its shareholders [9]. When analyzing how well a bank produces money from operations other than lending, return on Assets (ROA) is a key component to look at.

4.2.2 Independent Variables

EBIT. EBIT and EBITDA are two measures of business profitability that are commonly used. They are measured in dollars. EBIT stands for earnings before interest and taxes, and EBITDA stands for earnings before interest, taxes, depreciation, and amortization. Calculated as:

$$EBIT = Net\ Profit\ Earned + Interest\ Expense + Tax\ Expenses \quad (1)$$

Bank Assets: The bank's possessions are referred to as its assets. This encompasses both loans and securities, in addition to reserve funds. Deposits and money that the bank has borrowed from other financial institutions are examples of liabilities. Liabilities are items that the bank owes to third parties.

4.3. Data Analysis

In this study, we determined the degree of relationship between the dependent variables and the independent factors by the use of regression and correlation analysis. Both correlation and regression were utilized by the researchers so that they could conduct an analysis of the relationship that existed between the dependent and independent variables of the study. In the past, correlation analysis was used to find a connection between the variables that were reliant on the study and the variables that were independent of the investigation.

4.4. Econometric Model

The model employed in this study was the regression model which was also used previously by the study of Claessens, and Van Horen [1] to examine the relationship between global pandemic on the performance of credit banks in China. Using the Stata software, the collected data were tabulated and evaluated to be easily understood. The statistical program utilized in the data analysis process and consists of plenty of formulas is presented here. On the other hand, the descriptive analysis will be used to analyze the quantitative data, and the findings will be presented using tables. To determine the impact of the Worldwide Financial Crisis on the Banks' performance in the United Kingdom, this study follows the work of Grant, and Wilson and the model can be defined as follows [10]:

$$Y = a + B_1X_1 + B_2X_2 + \varepsilon \quad (2)$$

Where, Y is return on assets, X_1 is EBIT while X_2 is total banks assets and ε is the error term. B_1 and B_2 are constant coefficients.

5. Results and Discussions

5.1. Descriptive Statistics

Table 1: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Total assets	80	154.712	578.4299	570	2860
ROA	80	8.336137	3.676368	2.68	16.6
EBIT/EBITDA	80	2327.938	277.8014	1705	2758

Descriptive statistics were conducted based on the study variables, as it shown in Table 1. The mean value of the total assets was $1540.712 with a standard deviation of $578.4299 the maximum and minimum values were $2860 and $570 respectively. in the case of ROA (Return on Assets), the mean value $8.3367 with a standard deviation of 3.676368. The maximum and minimum values were $16.8 and $2.68 respectively. Lastly, the EBIT had a mean value of $2327. its standard deviation was $277.804. The maximum and minimum values were $1705 and $2758 respectively. The evidence was found to be in line with the findings of Grant, and Wilson which obtained the positive influence of bank factors on its profitability [10].

5.2. Correlation Analysis

The degree to which two variables are connected can be quantitatively determined with the help of correlation analysis. This conclusion can be analyzed using the correlation analysis using the correlation coefficient, which indicates the degree to which one variable changes in response to

changes in the other variable. The analysis is provided with a linear relationship between the two variables through correlation.

Table 2: Correlation Table

	Total assets	ROA	EBIT/EBITDA
Total assets	1.0000		
ROA	0.0285*	1.0000	
EBIT/EBITDA	0.1608**	0.1032	1.0000

The correlation table (Table 2) above shows a positive correlation between ROA, and total bank assets which is 0.0285 which is a weak positive correlation. The correlation between ROA and EBIT is a positive correlation of ($r=0.1608$, $p>0.05$). which is a weak positive correlation. The correlation between total assets and EBIT is ($r=0.1032$, $p>0.05$) which is a positive correlation. Therefore, based on the study variables, the implication is that there was an effect of the Global Financial Crisis on the UK Banking System. The study has evidence that there was a weak correlation between the Global Financial crisis in the UK.

5.3. Regression Analysis

The use of regression analysis is a trustworthy technique for determining which factors influence a particular topic of interest [11]. This study can safely determine which elements matter the most, which ones may be ignored, and how these factors influence each other through running a regression, which is a statistical technique

Based on the analysis, the R(Squared) is 0.026. therefore, making an implication that there is a 2.6% variation of the independent variable based on the data. The regression analysis shows that the value of the EBIT is 0.3322943 with a p-value of 0.162, which is greater than the 0.05 level. Therefore, we fail to reject the null hypothesis that EBIT impacts the UK commercial banks due to the global financial crisis. Additionally, the result analysis on total value is 1.890604 with a p-value of 0.916, which is greater than the 0.05 significance level. in the same scenario, we to accept the hypothesis that total Assets of banks has an impact UK banking system during the global financial crisis. The resulting regression models based on the study variables is.

$$Total\ Assets = 751.3907 + 0.3322943(EBIT) + 1.890604(ROA) \quad (3)$$

Table 3: Regression Table

Regression Statistics					
Multiple R	0.161132				
R Square	0.25964				
Adjusted R Square	0.664				
Standard Error	578.2378				
Observations	80				
ANOVA					
	df	SS	MS	F	Significance F
Regression	2	686268.6	343134.3	1.026245	0.363198
Residual	77	25745639	334359		
Total	79	26431908			
	Coefficients	Standard Error	t Stat	P-value	
Intercept	752.0621	556.604	1.351162	0.1806	
ROA	1.896154	17.79161	0.106576	0.915403	
EBIT	0.331983	0.235438	1.410066	0.162547	

The study found that there was a significant effect of the global financial crisis on the banking system in the UK. In general, The R-Square in Table 3 indicates that 25% of the ROA are explained by the global financial crisis on the banking system in the UK. The adjusted R-Square of 66.4% also

confirms the same. This means that there is a strong effect between the financial performance (ROA) and the global financial crisis. The result of regression analysis and all the measures of variables of the global financial crisis showed the existence of a strong positive impact where Total Assets is the dependent variable. The table shows that EBIT and ROA affect total assets negatively. EBIT asset β coefficient 0.331983 is meaning one unit increase leads to an increase in total Assets by 0.331983 others held constant. ROA β coefficient is 1.896154 meaning one unit increase ROA by 1.896154. The statistical significance of total Assets on ROA is 0.25 meaning it predicts the effect on ROA with 75 % probability.

5.4. Empirical Findings

According to the findings of the study, after accounting for multiple correlations and multiple regressions, it was discovered that the independent variables were responsible for a total of 57% of the variance (ROA) in the dependent variable (refer to adjusted R-square of 57%). This information can be found by looking at the adjusted R-square value. As a consequence of this finding, it can be deduced that the entire regression has a high capacity for explaining the data. Although the correlation between the current ratio and the cash deposit ratio was found to be positive, statistical analysis revealed that it did not meet the criteria for significance at the 1% level. It was discovered that there is a positive connection between the cash deposit ratio and the total capital to risk-weighted asset ratio at the 0.01 level of significance. On the other hand, there was a significant negative association between the ratio of total capital to risk-weighted asset and the ratio of nonperforming assets. As a result, the researchers came to the conclusion that the null hypothesis should be adopted. This hypothesis argues that Asset management, Capital Risks, and Liquidity Risks do not significantly affect the Return on Assets (ROA) of commercial banks.

6. Policy Recommendations

According to the findings of the study, in order for banks to keep an acceptable level of capital, they should take precautions to reduce the risks that are inherent in their business operations. In addition, the findings of the study indicate that dividends paid out to shareholders should be carefully managed in order to achieve the highest possible level of profitability. Regarding the quality of the assets, the study comes to the conclusion that financial institutions should increase their lending to customers while at the same time carefully evaluating the customers' ability to repay loans. This will help reduce the likelihood of loan default and increase profitability. In addition, the report suggests that financial institutions diversify their loan portfolios in order to lower the probability of loan default.

The research goes on to propose that banks should establish strategies to deal with any problems that may arise during a transaction. These plans should address any issues that may arise regarding the creditworthiness of clients as well as the value of collateral. The study goes even further in proposing that banks should provide advising services to assist borrowers in making the most of the money that they have been loaned.

According to the findings of the study, in order for financial institutions to maximize their profit potential, it is recommended that they reinvest the majority of their profits rather than giving them to shareholders. Further, the analysis shows that shareholders should be paid back only once the bank has covered its operational costs.

According to the findings of the research, financial institutions should maintain their current lending practices toward prospective customers in the hope of increasing their profits via interest rates. This is in relation to the flow of cash. If banks increase the number of total assets reserves, they keep on hand, the risk of having insufficient funds will be reduced. In addition, the report recommends that financial institutions boost the amount of money they lend out to customers so that they can fulfill their immediate commitments.

7. Summary

The purpose of the study was to determine how the worldwide banking system was impacted by the global financial crisis. The research looked at a cross-section of all commercial banks that were listed with the Bank of England between the years 2006 and 2015. Annual Time series data for independent-dependent variables were collected from the annual audited financial statements of banks from 2006-2015. The time period covered was from annual. Other significant pertinent statistics were acquired from the Guide of listed Bank of England. A model consisting of one dependent variable and four independent variables was developed so that the financial performance of commercial banks could be analyzed. When creating models with SPSS 17, Total Assets was used as an internal performance measurement tool. Both EBIT and ROA are indicators of a company's profitability.

This study's objective was to investigate the extent to which the Global Financial Crisis had an impact on the overall financial health of commercial banks located in the United Kingdom. In subsequent studies on the subject of the profitability of commercial banks, a larger variety of economic, political, and social aspects ought to be taken into consideration. Additional research is required in this field to determine the extent to which the elements that have already been taken into account influence the economic success of microfinance companies in the UK.

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