

# *Bank-Specific Profitability And Macroeconomic Indicators*

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**Abstract** – Factors impacting banks' bottom lines are the focus of this research. The study's goal is to analyze the key performance indicators of global banking institutions' financial health. It establishes a connection between 251 international banks and a wide range of economic, industrial, and macroeconomic data affecting their bottom lines. From 2009 to 2017, the analysis draws on a panel of financial statements from several institutions. Empirical evidence suggests that banks' poor loan quality and inability to profitably leverage rising deposit volumes are problems. Banks might gain from a depreciating currency rate even if they generate minimal earnings from their main banking activity. Return on equity is a common indicator of a company's profitability, and it tends to rise in tandem with operational efficiency. An additional area of research might focus on how the evolution of technology affects the productivity of both broad economic and banking sectors through time. This research provides supporting evidence for the existence of a distinction between the profit patterns of banks with foreign capital and those owned only by local investors. The findings also suggest that more bank mergers are possible to take advantage of economies of scale. The banking industry may use the findings of this research to clarify several issues.

**Keywords** – Profitability, efficiency, macroeconomic, Return on Equity

## I. INTRODUCTION

In order to evaluate the safety and stability of the banking system, it is necessary to consider the correlation between banking sector profitability and the economic cycle (Albertazzi & Gambacorta, 2009). Because most nations' monetary structures are built on banking, understanding what factors influence profitability in this industry is of paramount importance.

Bank profitability is crucial at both the micro and macro levels of analysis. It is undeniable that the importance of the banking industry in ensuring both microeconomic and macroeconomic stability and fostering economic development grows in tandem with the sector's growing role in the overall financial system. Macroeconomically speaking, the survival of a competitive financial institution and its ability to lend money is predicated on a healthy profit margin.

There is increased worry among bank regulators and supervisors, it is suggested, about the profitability and stability of financial institutions. After the financial crisis of 2007-2008, academics began paying more attention to this topic. Many economies were heavily impacted by the global financial crisis, which is blamed on huge banks in the ongoing discussion. (Adusei, 2015). According to Vials et al. (2013), the topic of organizational complexity, optimum bank size, and the operations of financial institutions has become more prominent since the global economies have emerged from the crisis period. Policymakers in the United States (US) are reportedly increasingly concerned about bank performance and demanding greater liquidity and capital after reading Vickers Report (2011). This rigorous effort by authorities is in response to Basel-III requirements and the constraints placed on banks with regard to their ability to participate in high-risk projects. Similarly, de Haan and Poghosyan (2012) point out that the size of a bank is inversely related to the volatility of its returns in the United States. They also note that this connection is not linear. (size effect positively on return volatility, when bank size crosses some threshold level). With this explanation in hand, we can now assess bank stability throughout the crisis era and argue the ideal bank size and regulatory limits.

In addition, prior research has piqued the attention of policymakers, who are now more eager to develop macroprudential indicators and a framework for analyzing return volatility. Because of the impact of the crisis on several economies, bank

profitability is now considered a macro-prudential indicator. The rationale for this is evident, since a robust banking sector is better equipped to weather economic storms. Borio (2003) have all shown that the factors that determine a bank's profitability are also directly related to the health of the financial system. Given this, it seems to reason that academics, financial market analysts, bank regulators, and management would be keen to learn more about as-yet-undiscovered factors influencing profitability. This explains why there has been a positive relationship between them. However, owing to differences in the statistical significance of chosen factors, the results of these investigations are inconsistent (Kanas et al., 2012). It's also worth noting that prior research has tended to focus on panel data from a number of different nations, making it difficult to generalize the results.

It's not only a byproduct of the increasing competitiveness in the financial markets, but essential to the survival of any bank that wants to thrive in this climate. Banks that make money help the economy as a whole when they are successful, and they are better positioned to weather times of trouble when they do (Aburime, 2009). The stability of the financial system is bolstered by a banking industry that can turn a profit and remain operational in the face of economic disruptions (Athanasoglou, Brissimis & Delis, 2008).

### 1.1 objectives of study

The main objective of study to check the impact of macroeconomic indicators on bank profitability performance.

## II. LITERATURE REVIEW

Profitability at banks tends to increase with growth, as discussed by Pilloff and Rhoades (2002). Efficiency in operation also has an impact on the overall size of a bank. Larger banks were more lucrative than smaller ones, and research has shown that this is due to economies of scale. Nonetheless, the empirical data further discusses the inverse relationship between bank size and profitability. Credit risk has a negative correlation with operational efficiency, as was mentioned by Ramlall (2009). Liquidation is exacerbated by banks' high real interest rates and the rapid turnover of their debtors (Sayilgan & Yildirim, 2009). When operational efficiency is good, it guarantees an increase in profits, as Kosmidou (2008) explains. According to Naceur and Goaid (2002), the issue of capital maintenance shows a negative correlation to profit. Capital's significance in shaping the bank's growth and the kind of its holdings. The capital has a huge impact on profitability and gives banks the ability to establish a solid foothold in the market. Operating income as a percentage of total assets is a measure of asset efficiency and has a direct, positive effect on profitability. According to Kunt and Detragiache (1998), the unstable macroeconomic climate ended up low GDP growth and high inflation are evidence of economic stagnation and scale inefficiencies.

Chinese commercial banks' profitability was studied by Zhao and Yang (2009), who found a positive correlation between the bank's financing structure and profitability after controlling for factors like capital adequacy ratio. Although there is a positive association between commercial banks' capital adequacy and ROA, the coefficient is minor. Capital adequacy ratio legislation negatively impacted bank profitability; however this effect was not long-lasting, according to research by Wang et al. (2009). On the other hand, Xin Chen (2016) looked at 17 Chinese commercial banks and found that neither the growth rate of operating income nor the operating profit rate of small-scale banks in China are well-balanced. Even if the growth rate is strong, the operational income growth rate for large-scale commercial banks is low.

Internal and external factors that impact the profitability of Chinese commercial banks were analyzed by Yong and Dong (2005). The study found that internal variables had a far bigger effect on profitability than did external ones. Internal factors, such as bank size, significantly affect profitability, while external factors, such as the natural logarithm of GDP and inflation, have no significant impact, according to research by X. Qu (2007) on a sample of state-owned and joint-stock banks in China between 1999 and 2005. For the 16 listed Chinese banks from 1999-2011, Zhong (2013) found that internal variables such as bank size, non-performing loan, and capital sufficiency had a substantial influence on bank profitability, but external ones such as the natural logarithm of GDP had no significant impact.

Internal variables (asset quality, capital sufficiency, liquidity, operational efficiency, and bank size) and external ones (GDP and inflation rate) are strongly correlated with profitability, as stated by Huang et al. (2006). Between 2000 and 2007, Sufian (2009) found that internal and external factors greatly affected the profitability of state-owned and joint-stock banks. Profitability is positively correlated with economic expansion and consumer price inflation, which is supported by empirical research (Alexiou & Sofoklis, 2009).

III. METHODOLOGY

This research uses the performance indicators of 251 different multinational banks and covers the period from 2009 to 2017.

The econometric model is given below,

$$ProfitEff = \alpha_0 + \beta_1 TotalAssets_1 + \beta_2 overheadExp_2 + \beta_3 GDP_3 + \beta_4 Inflation_4 + \beta_5 Monetarypolicy_5 + \beta_6 Investpolicy_6 + \epsilon_t$$

IV. RESULTS AND DISCUSSION

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Profiteffi~y	2,259	.7066751	.3120154	.027	1
TotalAssets	2,236	148443.2	383523.9	44.64482	2964299
Overheadex~s	2,236	.0216395	.0144855	.0003513	.1585893
GDP	2,259	7.40e+11	3.22e+10	6.96e+11	7.94e+11
Inflation	2,259	1.483042	1.134636	-.0831471	3.417378
MonetaryPo~y	2,259	79.9401	2.622168	76.38696	85.07391
Investment~y	2,259	77.51208	2.366688	73.04348	80.86957

The above table show the descriptive statistics of all the variables. There 2259 observations of different banks. The mean value of profitefficiency is 0.70 with 0.312 standard deviation. Total assets mean value is 148443.24 with 383523.86 standard deviation. All the descriptive statistics show that all the variables are normally distributed except GDP and total assets. The standard deviation measures the typical dispersion of your data. The average deviation from the mean is shown. A large standard deviation implies that values are spread out from the mean, whereas a small standard deviation shows that values are concentrated near to the mean in a normal distribution. So the above data shows the large standard deviation and it shows above the mean.

Table 2: Pairwise correlations

> y	Profit~y	TotalA~s	Overhe~s	GDP	Inflat~n	Moneta~y	Invest~
> -							
Profiteffi~y	1.0000						
TotalAssets	-0.5109	1.0000					
Overheadex~s	0.2016	-0.2196	1.0000				
GDP	0.1078	0.0198	0.0170	1.0000			
Inflation	0.2229	0.0313	0.0304	0.3463	1.0000		
MonetaryPo~y	0.1698	0.0225	0.0334	0.0667	0.1255	1.0000	
Investment~y	0.2455	0.0325	0.0502	0.3208	0.5205	0.5293	1.000
> 0							

The above table shows the correlation matrix among the different variables. It tells the strength of the variables. All the variables are normally correlated with each other.

Table 3: Linear regression

Source	SS	df	MS	Number of obs	=	2,2
> 36						
				F(6, 2229)	=	206.
> 32						
Model	77.9517901	6	12.991965	Prob > F	=	0.00
> 00						
Residual	140.35932	2,229	.062969637	R-squared	=	0.35
> 71						
				Adj R-squared	=	0.35
> 53						
Total	218.31111	2,235	.097678349	Root MSE	=	.250
> 94						

Profiteffi~y	Coef.	Std. Err.	t	P> t	[95% Conf. Interva
> 1]					
> —					
TotalAssets	-4.12e-07	1.42e-08	-29.00	0.000	-4.40e-07 -3.84e-
> 07					
Overheadex~s	1.644383	.3762922	4.37	0.000	.9064628 2.3823
> 03					
GDP	1.74e-13	1.79e-13	0.97	0.331	-1.76e-13 5.24e-
> 13					
Inflation	.0421826	.0057285	7.36	0.000	.0309489 .05341
> 63					
MonetaryPo~y	.0111279	.0024603	4.52	0.000	.0063032 .01595
> 26					
Investment~y	.016608	.0032376	5.13	0.000	.010259 .02295
> 71					
_cons	-1.63635	.2330387	-7.02	0.000	-2.093346 -1.1793
> 55					
> —					

The dependent variable is profit efficiency. All the explanatory variables are significant with dependent variable. All the variables are positive related with profit efficiency. The coefficient of total assets shows that if 1% increases in total assets than 0.4% decrease in profit efficiency of banks because both variables are negative related. The coefficient of overhead head exp shows that if 1% increase in overhead exp than 16.44 increase in profit efficiency of banks because both variables are positive related. The coefficient of GDP shows that if 1% increase in GDP than 0.06% increase in profit efficiency of banks because both variables are positive related. The coefficient of inflation shows that if 1% increase in inflation than 4.2% increase in profit efficiency of banks because both variables are positive related. The coefficient of monetary policy shows that if 1% increase in monetary policy than 1.1% increase in profit efficiency of banks because both variables are positive related. The coefficient of investment policy shows that if 1% increase in investment policy than 1.7% increase in profit efficiency of banks because both variables are positive related.

The alpha shows the constant values and it has negative values. The values show that if explanatory variables are increasing then dependent variable is decrease. If 1% change in all explanatory variable then 1.63% change in dependent variable.

The value of R square shows that 35.7% change in profit efficiency due to the entire explanatory variable. The R square tells the strength of the model. Higher value of R square shows strong model and lower value shows the weak model. If model has R square is greater than 90% then model has fit. Our R square is 35% that shows it has not fit or weak model.

The F value in regression is the result of a test where the null hypothesis is that all of the regression coefficients are equal to zero. In other words, the model has no predictive capability. So there is no regression coefficient is equal to zero. So model has predictive capability.

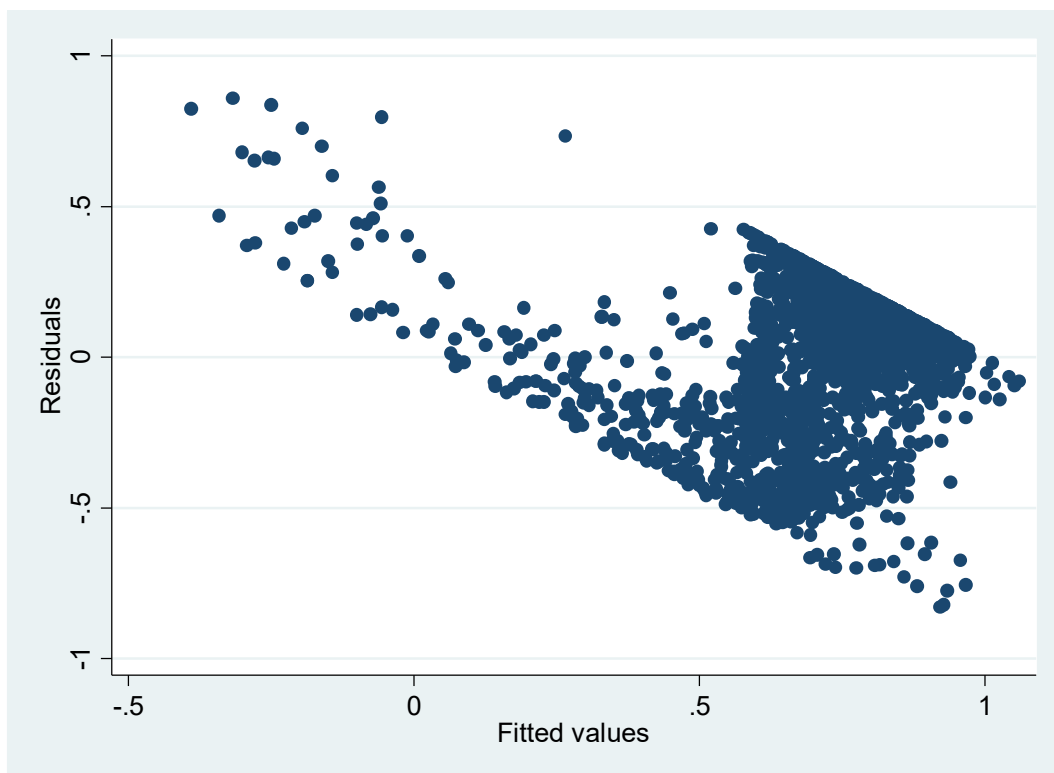
#### 4.1. Diagnostics Tests

Our model depends on panel data, so autocorrelation have no effect. The multicollinearity is checked by the VIF and heteroskedasticity is checked by breusch pagan lm test.

Table 4: Heteroskedasticity Test

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of Profitefficiency

chi2(1)      =    207.07
Prob > chi2  =    0.0000
```



The above table shows the heteroskedasticity test of the model. The model show the existence of heteroskedasticity because p value is less than 5% that we reject the null hypothesis that variance are constant.

Table 5: VIF

Variable	VIF	1/VIF
Investment~y	2.06	0.484603
Inflation	1.51	0.661673
MonetaryPo~y	1.47	0.681690
GDP	1.18	0.847234
Overheadex~s	1.05	0.948285
TotalAssets	1.05	0.949365
Mean VIF	1.39	

The above table check the multicollinearity in the model. The results show that there is no multicollinearity in the model because values are less than 10%.

### V. CONCLUSION

The current financial crisis, which has been dubbed the worst crisis ever since the Great Depression, has brought to light the fact that a banking sector that is profitable and lucrative is best able to soak up negative distress and contributes to the stability of the financial system. This realisation has been brought about as a direct result of the current crisis. In this regard, the research aims to shed light on the indicators of profitability for the banking system by taking into account elements that are unique to individual banks as well as aspects that are macroeconomic in nature. This analysis provides an accurate picture of the profitability of the banking industry throughout the course of the period 2009–2017. In terms of the micro independent factors, it seems that size, operational efficiency, portfolio mix, and asset management all had a favourable influence on profitability. In the event that profitability is assessed, it seems that capital, portfolio composition, and asset management favourably benefited it, but size, operational efficiency, and credit risk adversely affected it. The Gross Domestic Product is determined to have a favourable effect on profitability when looking at the macroeconomic factors.

As the trip offers the study of commercial banking to better their consideration, this research makes it possible for academics, scholars, and bankers to have a picture about banking advancements in managing profitability.

### VI. IMPLICATIONS

The findings of this study point to fruitful avenues for further investigation, such as:

1. A first step may be to research the likely outcomes in related financial and non-financial industries.
2. Future longitudinal studies can more thoroughly probe the impact of crucial factors.
3. Alternative pragmatic and non-pragmatic research methodologies on the banking industry might be included, since this would reveal other facets of profitability.

### REFERENCES

- [1] Aburime, U. T. (2009). Impact of Political Affiliation on Bank Profitability in Nigeria. *African Journal of Accounting, Economics, Finance and Banking Research*, 4 (4), 61-75.
- [2] Albertazzi, U., & Gambacorta, L. (2009). Bank profitability and the business cycle. *Journal of Financial Stability*, 5, 393-409.
- Alexiou, C., & Sofoklis, V. (2009). Determinants of Bank Profitability: Evidence from the Greek Banking Sector. *Economic Annals*, LIV No. 182, 93-118.
- [3] Al-Tamimi, H. A. (2005). The Determinants of the UAE Commercial Banks' Performance: A Comparison of the National and Foreign Banks. *Journal of Transnational Management*, 10(4), 35 – 47.
- [4] Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *International Financial Markets Institutions & Money*, 18 (2008), 121-136.

- [5] Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance*, 34 (3), 146-159.
- [6] Kunt, A. D., & Detragiache, E. (1998). The Determinants of Banking Crises in Developing and Developed Countries. *International Monetary Fund (IMP Staff Papers)*, 45 (1), 81-109.
- [7] Hauner, D. (2005). Explaining efficiency differences among large German and Austrian Banks. *Applied Economics*, 37, 969-980.
- [8] L.K.Vong. (2005). Loans and Profitability of Banks in Macao. *AMCM Quarterly Bulletin*(15), 91-107.
- [9] Miller, S. M., & Noulas, A. G. (1997). Portfolio mix and large-bank profitability in the USA. *Applied Economics*, 24 (4), 505 — 512.
- [10] Molyneux, P., & Seth, R. (1998). Foreign banks, profits and commercial credit extension in the United States. *Applied Financial Economics*, 8, 533-539.
- [11] Naceur, S. B., & Goaid, M. (2001). The determinants of the Tunisian deposit. *Applied Financial Economics*, 11(3), 317 — 319.
- [12] Naceur, S. B., & Goaid, M. (2002). The relationship between dividend policy, financial structure, profitability and firm value. *Applied Financial Economics*, 12, 843-849.
- [13] Pilloff, S. J., & Rhoades, S. A. (2002). Structure and Profitability in Banking Markets. *Review of Industrial Organization*, 20, 81-98.
- [14] Ramlall, I. (2009). Bank-Specific, Industry-Specific and Macroeconomic Determinants of Profitability in Taiwanese Banking System: Under Panel Data Estimation. *International Research Journal of Finance and Economics* (34), 160-167.
- [15] Sayilgan, G., & Yildirim, O. (2009). Determinants of Profitability in Turkish Banking Sector: 2002-2007. *International Research Journal of Finance and Economics* (28), 207-214.
- [16] Spathis, C., Kosmidou, K., & Doumpos, M. (2002). Assessing Profitability Factors in the Greek Banking System: Amulticriteria methodology. *International Transactions in Operational Research*, 517-530.
- [17] Sufian, F. (2009). Determinants of bank efficiency during unstable macroeconomic environment: Empirical evidence from Malaysia. *Research in International Business and Finance*, 23, 54-77.
- [18] Sufian, F., & Habibullah, M. S. (2009). Bank Specific and Macroeconomic Determinants of Bank
- [19] Profitability: Empirical Evidence from the China Banking Sector. *Front. Econ. China*, 4 (2), 274-291.