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BANK REGULATION AND SUSTAINABILITY

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Abstract: Worldwide, the effects of the 2008 recession have had a major impact on the entire banking system. This report is aiming to give an insight of financial management within the banking system in the UK, focusing on the past five years and using the financial data of Lloyds Banking Group, Barclays Plc and Standard Chartered Group. The first part of this this paper is investigating how the bank regulation has changed over time, including the sustainability integration into the banking system. In the second part, a thorough analysis of regulatory capital, liquidity and efficiency level is presented. The third part is analysing whether regulatory capital has an impact on profitability. Finally, a critical review of the banks' risks and their mitigating strategies is presented.

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Introduction

The global financial crisis of 2008 led to the widespread dislocation of global financial markets that led to abrupt and persistent consequences in economic growth, rate of unemployment and required rapid and globally coordinated response from the public sector. The crisis was triggered by the market correction of US housing markets that had already started in 2006. A deeper analysis in hindsight points to global structural vulnerabilities that had accumulated previous to the housing boom (International Monetary Fund, 2018). The housing boom was supported by accumulated financial vulnerabilities in banks and other financial intermediaries in an inadequate regulatory environment. As the boom increased, these vulnerabilities were amplified and exposed US mortgage-based securities around 2007.

The level of leverage in financial institutions rose in a procyclical manner with the quality and quantity of capital needed to absorb the huge possible losses being insufficient. Banks responded to the benign macroeconomic environment by expanding their lending without sufficiently increasing their capital by off-balance sheet instruments to make them secure and sell them to investors. In Europe, the adoption of the Euro led to the convergence of interest rates among member countries that resulted in low borrowing costs for households (International Monetary Fund, 2018). This spiked a housing boom in Ireland, Spain, and Iceland. Even though capital resources seemed strong in many financial institutions, a high level of leverage and collapse of the special purpose vehicles used by these institutions exposed them to huge risks. Banks also had insufficient capacity to absorb market losses due to poor frameworks for testing risk. As the crisis progressed, banks realised that their capital was insufficient to cushion them from the possible risk. These had spill over effects in other sectors of the economy such as insurance companies. It is therefore important to explore in detail the regulatory drive that led to the global financial crisis, how regulation and sustainability requirements have changed since that time and the effectiveness of those policies. Therefore, three public-traded banks in the UK are analysed in order to evaluate their regulatory capital, liquidity, and level of efficiency (International Monetary Fund, 2018). This

will help assess the impact of these regulations on the bank's profitability and the risk associated with the bank.

Liquidity and Funding Risks after the Global Financial Crisis

To fully understand the global financial crisis, we have to evaluate some of the risks associated with funding sources and liquidity that arose in different economies during, before and after the crisis. Banks shifted their funding from long-term deposit-based funding to short-term market-based funding. This strategy allowed banks around the world to aggressively grow their lending portfolios but attracted high liquidity and maturity transformations. The majority of market-based funding provided by banks and other financial institutions were not covered by deposit insurance and their maturity was interlinked. This created a scenario where assets used as collateral could be passed along many financial intermediaries increasing the counterparty risk and fragility (Bank for International Settlements, 2013).

Banks and other financial institutions also started using complex financial instruments as collateral that increased the associated liquidity risk. Market funding relied on the investors' perceived quality of available mortgage-backed securities and other instruments as collateral. When housing prices started going down in 2006, the perceived value of these instruments reduced. The high complexity of these instruments and lack of transparency confused the market discouraging investors in the market and eliminating funding in the market. The majority of banks and other financial institutions that relied on these funds faced huge liquidity crunches (International Monetary Fund, 2018). This pressure spilled over to insurance companies that had provided default protection to complex structured securities leading to losses and insolvency.

There was also an increase in exchange rate risk during this crisis. Banks in Europe especially, the UK, France, and Germany used US mortgage-backed securities to obtain funding in the UK. Banks in Iceland exploited cheap short-term deposits denominated in pounds to fund higher interest lending at home. This was also replicated in central Europe

where low-cost mortgages in Swiss franc and euro flooded the market (International Monetary Fund, 2018). Even though many banks managed to keep low exposure to currency risk, they relied highly on the uninterrupted availability of short-term funding in foreign currencies that increased vulnerabilities to fluctuations in currency values.

Regulation and Sustainability Agenda

There were huge gaps in the regulatory and sustainability framework in the period before the global financial crisis. Large interconnected financial institutions proved to be a key vulnerability. Regulating large commercial and investment banks with complex operations in different financial markets proved to be a huge challenge to local government agencies. The majority of these institutions were large, highly interconnected and with opaque operations that could wreak havoc in different markets. Large financial institutions were deemed too large to fail which motivated them to take on more risk. When market funding stopped, many industry players faced liquidity crunches. There was low supervision in a highly networked and complex financial system where banks lend to one another using both secured and unsecured debt instruments that created a network that spread across institutions and jurisdictions (International Monetary Fund, 2018). Credit rating agencies highly rated mortgage-based securities often paid by the issuers misleading investors in the process. The presence of insurers who covered these instruments further increased the systematic risk in the market creating a domino effect when the crisis kicked in.

At the 2009 G20 summits, international regulatory bodies convened to evaluate causes and evaluate the regulatory framework to avoid similar crises in the future. The agenda of the summit was to improve regulatory capital buffers, lower leverage levels, reduce procyclicality, contain funding mismatch, enhance supervision of large financial institutions, improve supervision of financial systems, align corporate governance of banking with prudent risk analysis, reduce currency risk and overhaul resolution regimes used by large multinational financial institutions. This agenda was implemented through the different multilateral bodies

and memberships such as the IMF, Financial Sector Assessment Program and Article (IV) missions. The key form of legislation in the UK is the Financial Services and Markets Act 2000 (FSMA). The Basel agreements provide a basic framework and allows banks to establish increasingly robust risk control programs, including minimum capital, liquidity standards and stress tests that have been further improved since the recession. The following are some of the regulations proposed during and that have been implemented in the decade that followed.

- **Improved Quality and Quantity of Capital under Basel (III):** The Basel Committee on Banking Services developed a better framework to improve banks' resilience during crises. The new global framework increased the level and quality of capital held by banks (Bank for International Settlements, 2013). The new regulations focused on common equity held by banks by increasing the permanence and loss absorption capacity of the bank's capital. Basel III also specified how capital held by banks would be defined and its compositions to widen the risk covered. The framework also introduced non-risk-based leverage ratios to be used with traditional risk measures of capital and reduced the capital relief used by banks to weigh the risk. BCBS also added capital conservation and countercyclical capital to act as capital buffers and could be revised down during a time of crisis. Banks have also increased their capital buffers with capital ratios increasing steadily since the global financial crisis. Equity to assets ratios maintained by banks has increased by an average of 2%.
- **Reducing Procyclicality of Leverage:** Many countries introduced countercyclical capital buffer that could be activated to offset accumulated systematic risk. There were also shifts in accounting rules to introduce mechanisms to reduce procyclicality. The main accounting tool was the provision of a forward-looking provision to offer insights on expected credit losses and take corrective measures in advance. Basel III regulations introduced capital conservation buffers and keeping leverage levels stable and maintaining stable balance sheets especially when the economy is experiencing

an upwards surge (Alexander & Fisher, 2018). Many banks have also introduced sectoral tools that target riskier industries and sectors such as the real estate industry.

- **Introduction of Stress Testing mechanisms:** To avoid being caught off-guard, many banks introduced stress testing components to assess the impact of sudden stress scenarios especially on the solvency of banks. Bank supervisors use these tools to assess the adequacy of capital held by banks in different stress scenarios.
- **Basel II framework on Bank Liquidity:** To avoid similar bank liquidity, the Basel Committee introduced two more regulatory liquidity ratios (Bank for International Settlements, 2013). This included a liquidity coverage ratio that was based on the concept that banks hold liquid assets that can withstand high-stress levels for 30 days. They also introduced the Net Stable Funding Ratio to reign in on the mismatch between assets and liabilities with a maturity period of less than a year.

Integration of Sustainability in the Banking Sector

Banks play an important role in society by allocating financial resources to different sectors. They do this by lending capital, advising, underwriting insuring and other financial services to companies and government agencies around the world. These functions allow companies and the government to perform their functions smoothly. Many activities financed or facilitated by banks usually have positive or negative social and environmental impacts (Van Gelder & Stichele, 2011). Banks have recognised their influence and developed mechanisms to ensure positive outcomes.

Many banks now play in social and environmental impact and risks associated with the financial transactions they pursue. The majority of banks that have already incorporated social and environmental sustainability in their business model are motivated by the probability of default due to risky investments. Banks need to increase the quality of their risk assessment mechanism and transparency of other mechanisms. Banks must acknowledge that their products and production process and those of the companies they finance can have a huge

impact on society and the immediate environment (Van Gelder & Stichele, 2011). They should therefore clearly define the risk caused by their financial transactions and the businesses and government they support. Some of these risks include developing products that might cause debt overload or insolvency to their customers. The businesses they finance must also follow the principles outlined by the UN global act. This includes safeguarding human rights, adhering to labour standards, protecting the environment and shunning corruption.

Adopting the right sustainability criteria can help banks reinforce their regulatory frameworks. Some of the common criteria include measures of sustainable issues such as biodiversity, climate change, social justice, labour, and human rights. Regulators should outline these sustainability measures in detail and fully integrate them into their business model. Banks should also ensure businesses are stable by protecting their capital, keeping adequate liquidity levels and properly managing their risk (Van Gelder & Stichele, 2011). Banks should also conduct their business fairly and transparently. Lastly, banks should ensure financial stability to protect economics that is negatively affected when their business fails.

UK Banks financial analysis

The financial performance of three major UK banks is evaluated in order to determine their regulatory capital, level of liquidity and efficiency. This analysis is focusing on the Lloyds Banking Group, Barclays Plc and Standard Chartered Group.

Lloyds Banking Group

Lloyds Banking Group is one of the largest retail banks in the UK with over 26 million active users and present in almost every community in the UK. The bank concentrates on retail, corporate and commercial banking. The group also offers a wide range of insurance products that include general, life, pension, and investment insurance products. The group offers its services through its brands that include Lloyds bank, Scottish Widows, Halifax and Bank of Scotland. Lloyds group has developed tailored banking services for different

categories that include current and savings accounts in retail banking, working capital, and risk management products in the commercial segment, insurance and wealth management services. The company shares are traded in LSE and NYSE and forms part of the FTSE 100 index in the UK (Reuters.com, 2020).

Barclays Bank

Barclays Plc is a transatlantic consumer bank with operations all over the world. The bank offers different banking services that include retail, corporate and investment banking services. The bank also offers wealth management services to individuals around the world. Barclays UK offers everyday banking services that include lending, transactional and wealth management services (Barclays, 2020).

Standard Chartered Plc

Standard Chartered is a British multinational bank headquartered in Basing hall Avenue in London (Standard Chartered, 2020). The bank was first established in 1853 and it was listed in the London stock exchange in 1969. The bank offers a wide range of financial services that include private banking and corporate and institutional banking.

Bank	Year	Tier 1	LCR	CIR	LENDINGR	ROE
BARCLAYS	2019	13.80	1.60	0.71	0.74	0.30
BARCLAYS	2018	13.20	1.69	0.77	0.76	0.31
BARCLAYS	2017	13.30	1.54	0.73	0.86	0.28
BARCLAYS	2016	12.40	1.31	0.76	0.92	0.27
BARCLAYS	2015	11.40	1.33	0.84	0.95	0.31
Lloyds Banking Group	2019	13.80	1.37	0.69	1.12	0.36
Lloyds Banking Group	2018	14.30	1.30	0.63	1.10	0.35
Lloyds Banking Group	2017	13.90	1.10	0.68	1.07	0.36
Lloyds Banking Group	2016	13.80	1.09	0.71	1.12	0.34
Lloyds Banking Group	2015	13.00	1.09	0.88	1.10	0.24
Standard Chartered Plc	2019	13.80	1.44	0.71	0.74	5.60
Standard Chartered Plc	2018	14.20	1.54	0.79	0.76	4.60
Standard Chartered Plc	2017	13.60	1.46	0.72	0.76	3.50
Standard Chartered Plc	2016	13.60	1.33	0.73	0.76	0.30
Standard Chartered Plc	2015	12.60	1.11	0.73	0.83	0.12

	<i>Tier 1</i>	<i>LCR</i>	<i>CIR</i>	<i>Lending R</i>	<i>ROE</i>
Tier 1	1				
LCR	0.157264	1			
CIR	-0.63546	-0.0264	1		
Lending R	0.019482	-0.68459	-0.08158	1	
ROE	0.345908	0.330916	-0.01606	-0.48305	1

According to the table above, the correlation between tier 1 and liquidity coverage ratio is positive, meaning that when the tier 1 capital increases, the liquidity coverage ratio increases as well. Same situation occurs when it comes to lending ratio and return on equity. However, the relationship between tier 1 capital and cost income ratio is negative, meaning that when one of them increases, the other decreases.

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.75255
R Square	0.566332
Adjusted R Square	0.392865
Standard Error	0.598651
Observations	15

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	4.680167233	1.170042	3.264778	0.058772488
Residual	10	3.583832767	0.358383		
Total	14	8.264			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	15.86309	3.493359566	4.540927	0.001073	8.079399516	23.6467799	8.079399516	23.64677986
LCR	0.901778	1.13387046	0.79531	0.4449	-1.62464283	3.42819882	-1.62464283	3.428198825
CIR	-7.26334	2.569343791	-2.82692	0.017946	-12.9881961	1.53848664	-12.9881961	1.538486642
LendingR	1.612647	1.519821862	1.061076	0.31361	-1.77372763	4.99902065	-1.77372763	4.999020649
ROE	0.178051	0.100961353	1.763558	0.108278	-0.04690476	0.40300707	-0.04690476	0.403007066

Regulatory Capital

The global financial crisis exposed weaknesses in the capital bases held by internal banks. The definition of capital varied widely in different jurisdictions with many banks keeping insufficient levels of capital (Thismatter.com, 2019). These deficiencies coupled with the

opaqueness of the banking industry which reduced the level of confidence in banks. Basel III reforms established in 2010 and strengthened the quality and quantity of capital held by banks around the world. The new framework focused on high-quality capital that could absorb losses in the market.

Common equity tier 1 capital includes common shares held by investors, stock surpluses and retained earnings kept after distributing dividends to shareholders. Basel III framework set that all common equity tier 1 capital is above 4.5% of the total risk-weighted assets held by the bank while additional tier 1 capital instruments must be above 6% of total assets held by the bank (Van Gelder & Stichele, 2011). Additional tier 1 capital includes other capital instruments that meet the set criteria and qualify as minority interest to the banks. Tier 2 capital includes all undisclosed capital that appears on the financial statements of the bank that supplement tier 1 capital. These capital instruments are less reliable when a bank gets into financial distress.

Banks can have capital risk if they have low quality and insufficient capital. This means that the bank does not have enough capital resources to meet the regulatory requirements set by the government agencies and other external stakeholders (The Bank for International Settlements, 2019). This can make it difficult for the bank to support its strategic objectives in the long-run. Banks earn their net income from the net interest margin that shows the difference between the interest they pay for short-term debt and the interest they earn from loans. If left unchecked, banks would prefer low capital ratios because they increase their ROA and ROE. Keeping sufficient capital ratio lowers leverage and minimises the risks.

Bank	Year	Tier 1	LCR	CIR	LENDINGR	ROE
Lloyds Banking Group	2019	13.8	1.37	0.69	1.12	0.36
	2018	14.3	1.30	0.63	1.10	0.35
	2017	13.9	1.10	0.68	1.07	0.36
	2016	13.8	1.09	0.71	1.12	0.34
	2015	13	1.09	0.88	1.10	0.24

Bank Regulation and Sustainability

Lloyds Banking Group has maintained healthy capital ratios. The company tier 1 capital ratio has increased steadily from 13% in 2015 to 14.3% in 2018 before decreasing slightly to 13.8% in 2019 (Lloyds Banking Group, 2019). This means the bank has enough tier 1 capital instruments such as shareholders capital, retained earnings and other qualifying capital instruments that can be used to settle debts and pay investors if the company experiences financial stress. Thus, the bank has enough capital resources to finance their daily operations future expansion plans. This shows that the bank has managed to attract sufficient high-quality capital while keeping its risk-weighted assets low. These ratios are above the minimum regulatory standards in the UK meaning the bank regulatory capital is above average.

Bank	Year	Tier 1	LCR	CIR	LENDINGR	ROE
BARCLAYS PLC	2019	13.8	1.60	0.71	0.74	0.3
	2018	13.2	1.69	0.77	0.76	0.31
	2017	13.3	1.54	0.73	0.86	0.28
	2016	12.4	1.31	0.76	0.92	0.27
	2015	11.4	1.33	0.84	0.95	0.31

Barclays Plc has also maintained healthy and steady capital ratios. The bank's tier 1 capital ratio increased steadily from 11.4% in 2015 to 13.8% in 2019 (Barclays PLC, 2019). This shows the bank managed to attract enough high-quality capital compared to the total risk-weighted assets they held during the five years under review.

Bank	Year	Tier 1	LCR	CIR	LENDINGR	ROE
Standard Chartered Plc	2019	13.8	1.44	0.71	0.74	5.6
Standard Chartered Plc	2018	14.2	1.54	0.79	0.76	4.6
Standard Chartered Plc	2017	13.6	1.46	0.72	0.76	3.5
Standard Chartered Plc	2016	13.6	1.33	0.73	0.76	0.3
Standard Chartered Plc	2015	12.6	1.11	0.73	0.83	0.12

Standard Chartered Plc also maintained above-average capital ratios. Its Tier 1 capital ratio increased steadily from 12.6% in 2015 to 13.8% in 2019 (Standard Chartered, 2019).

Bank liquidity

Liquidity in the banking sectors refers to the ability of a bank to meet its short-term financial obligations when they are due. To achieve this, banks must hold enough liquid assets such as cash and other cash equivalents that can easily be liquidated without losing value (Bank for International Settlements, 2013). These include other credit worth securities such as government bonds. Banks should, therefore, hold enough liquid assets with a short maturity date that can be sold or with very short maturity dates that allow them to wait to receive the interest and principal invested. If a bank does not have sufficient liquid assets, then they can experience liquidity problems especially when there is a crisis.

Need for Liquidity

Banks play an important part in the financial system of a country. Their success or failure can have far-reaching impacts even in sectors that are not directly associated with the sectors. Past crises have shown the impact on the economy when banks' liquidity dries up. Capital is essentially the most important buffer since it offers resources that can be reclaimed against in case of a crisis (Chen, et al., 2018). Banks should also be in a position to survive bank runs. This means they can easily replace cash outflows in the short and long run. Basel III introduced the liquidity coverage ratio and net stable funding ratio to continuously monitor the liquidity of banks.

The net stable funding ratio

This is a liquidity metric introduced by the Basel III meant to promote more resilient banking sectors by monitoring long-term liquidity (Bank for International Settlements, 2014). The NSFR ratio became a regulatory minimum in 2018 and requires banks to seek funding from stable sources by comparing it to their assets and off-balance sheet activities. The ratio is calculated by dividing the total stable funding available to a bank by the required amount of stable funding. Banks must ensure that they keep their NSFR above 100% at all times.

Available stable funding includes all capital and liabilities expected by the bank over a period.

The required stable function is unique to a bank and is a function of the residue matures of different assets and the liquidity characteristic of the assets held by the bank. All the three banks maintained NSFR well above the minimum set requirements of 100%.

Liquidity coverage ratio

This ratio compares the total stock of high-quality liquid assets to the total net cash outflows expected in the next 30 days (Bank for International Settlements, 2013). In theory, the total stock of high-quality liquid assets held by a bank should be sufficient to withstand a 30-day stress period.

Lloyds Banking Group	2015	2016	2017	2018	2019
Total high-quality liquid assets (in billions)	£ 123	£ 121	£ 121	£ 129	£ 131
Net stress outflows (in billions)	£ 113	£ 100	£ 93	£ 102	£ 96

Lloyds bank liquidity coverage ratio increased steadily from 109% in 2015 to a peak of 137% in 2019. The bank's stock of high-quality liquid assets increased from 123 billion in 2015 to 131 billion in 2019. The net stress cash outflow within that period also decreased steadily from 113 billion in 2015 to 96 billion in 2019 (Lloyds Banking Group, 2015). This shows that the bank was able to reduce its net stress cash outflows while increasing the available liquidity buffer. This means the bank can easily survive short liquidity crunches. These levels are way above the regulatory minimum supposed to be maintained by the bank.

Barclays Plc	2015	2016	2017	2018	2019
Total high-quality liquid assets (in billions)	£ 145	£ 165	£ 215	£ 219	£ 206
Net stress outflows (in billions)	£ 108	£ 126	£ 140	£ 129	£ 128

Barclays plc also had a high liquidity coverage ratio for the five years under review. The banks, stock of qualifying liquid assets increased from 145 billion in 2015 to peak at 206

billion in 2019. This trend shows that the bank was able to increase the quantity and quality of its liquid assets during that period to bolster its liquidity. The bank's net stress outflows also increased from 108 billion in 2015 to 128 billion in 2019 (Barclays PLC, 2015). Even though the net stress outflows increased during the five years under review, the bank was able to mass even more liquid assets during that period to cushion its liquidity.

Standard Chartered Plc	2015	2016	2017	2018	2019
Total high-quality liquid assets (in millions)		\$ 136,291	\$ 132,251	\$ 149,602	\$ 158,415
Net stress outflows (in millions)		\$ 102,263	\$ 90,691	\$ 97,443	\$ 110,269

Standard chartered plc liquidity coverage ratio in 2015 was above 100%. The bank also relied on liquid assets ratio to evaluate its liquidity (Standard Chartered, 2015). The bank's liquid assets ratio showed that the bank liquid assets were 305 of the total liabilities held by the bank. The bank's liquid coverage ratio increased steadily from 133% in 2016 to 144% in 2019. The bank was able to increase its liquid buffers from 136.29 billion in 2015 to 158.4 in 2019 while keeping its net stress outflows in stable form 102.3 billion in 2015 to 110.26 billion in 2019.

Bank Efficiency

Just like any other business, banks strive to increase their efficiency. Bank managers strive to use less cost to generate the highest possible income. Banks incur several operating expenses such as salaries for its management and staff, rent for their premises and other administrative expenses (Ahern, 2017). Interest expenses are usually excluded when evaluating the efficiency levels of a bank since they represent an investing decision. Banks will then generate revenues from the fees they charge their customers, interest income from loans they extend to their customers. It is therefore important for banks to closely monitor their efficiency.

Bank Efficiency Ratio

This ratio evaluates a bank's ability to utilise resources at its disposal to maximise revenue. The ratio is computed by dividing the net operating expenses incurred by the bank by the net revenue generated during the year. Banks strive to lower their efficiency levels at least to lower than 50%. Low-efficiency ratios mean that a bank has successfully lowered its costs of operations while generating maximum revenue.

Lloyds Banking Group	2015	2016	2017	2018	2019
	£	£	£	£	£
Operating Expenses (in Millions)	15,387	12,277	12,696	11,729	12,670
	£	£	£	£	£
Net revenue (in Millions)	23,150	39,611	34,237	22,091	42,356
Efficiency Ratio	66%	31%	37%	53%	30%

Lloyds banking group efficiency level was reduced from 66% in 2015 to a low of 30% in 2019 (Lloyds Banking Group, 2019). This shows that the bank's management succeeded in keeping its operating costs low compared to the revenue they generated each year.

Barclays Plc	2015	2016	2017	2018	2019
	£	£	£	£	£
Operating Expenses (in Millions)	18,536	16,338	15,456	16,243	15,434
	£	£	£	£	£
Net revenue (in Millions)	22,040	21,451	21,076	21,136	21,632
Efficiency Ratio	84%	76%	73%	77%	71%

Barclays' efficiency ratio decreased from 84% in 2015 to 71% in 2019 (Jones & Knaack, 2019). This shows that the banks internal efficiency improved during the five years under review. The bank's management should strive to further lower this ratio to lower than 50%.

Standard Chartered Plc	2015	2016	2017	2018	2019
	£	£	£	£	£
Operating Expenses (in Millions)	11,173	10,211	10,417	11,647	10,933
	£	£	£	£	£
Net revenue (in Millions)	15,289	14,060	14,425	14,789	15,417
Efficiency Ratio	73%	73%	72%	79%	71%

The Standard Chartered plc efficiency ratio remains fairly stable ranging in the 70% range. The ratio improved slightly from 73% in 2016 to 71% in 2019 (Standard Chartered, 2016). The bank management should do more to manage its operating expenses and generate more revenue.

Impact on Profitability

Banks must closely monitor their profitability to ensure they are efficiently using their assets and equity to generate profits. Profitable banks can easily secure cheap loans and attract more equity from investors (Chen, et al., 2018). There are many metrics banks can use to assess how profitable they are. They include computing return on the assets and equity they hold. This report will compare the net profits earned at the end of the year by the total operating expenses incurred by the bank during the year to assess their profitability. This will help give a picture of the impact of implementing different regulatory and sustainability strategies in their business model for the five years under review.

Lloyds Banking Group	2015	2016	2017	2018	2019
	£	£	£	£	£
Operating Expenses	15,387	12,277	12,696	11,729	12,670
	£	£	£	£	£
Net Income	956	2,514	3,547	4,400	3,006
Profitability Ratio	6%	20%	28%	38%	24%

Lloyds banking group overall profitability increased during the four years under review. The bank profitability increased, net profit margin increased from 6% in 2015 to peak at 38% in 2018 before slightly decreasing to 24%. This metric shows that the bank's management managed to keep their total cost of operation low and still managed to post positive net income. This trend shows that the bank managed to improve its liquidity, adhere to regulatory capital requirement and bolster its internal efficiency.

Barclays Plc	2015	2016	2017	2018	2019
	£	£	£	£	£
Operating Expenses	18,536	16,338	15,456	16,243	15,434
	£	£	-£	£	£
Net Income	1,238	2,828	720	2,583	3,354
Profitability Ratio	7%	17%	-5%	16%	22%

Barclays profitability fluctuated during the five years under study. The bank's net profit margin increased from 7% in 2015 to 17% in 2016 before decreasing sharply to post a loss of 5%. The bank, however, managed to post a profit margin of 16% and 22% in 2018 and 2019 respectively. Despite the fluctuation, the bank's profitability had an upward trend. This trend indicates that bank profitability increased as they systematically adopted the new regulations.

Standard Chartered Plc	2015	2016	2017	2018	2019
	£	£	£	£	£
Operating Expenses	11,173	10,211	10,417	11,647	10,933
	-£	-£	£	£	£
Net Income	2,196	191	1,268	1,109	2,340
Profitability Ratio	-20%	-2%	12%	10%	21%

Standard Chartered Plc also had a similar trend for five years. The bank's net profit margin increased from losses of 20% in 2015 to a profit of 21% in 2109. This shows that the new regulations were effective in boosting the bank's liquidity and internal efficiency.

Impact on Risk

Banks face different risks that can affect their performance negatively if left unchecked. Some of these risks include capital and liquidity risk. Capital risk is associated with holding insufficient and low-quality capital that can be used to finance operations of the bank (Miele & Sales., 2011). Basel III framework strengthens the capital requirement for banks. This included increasing the tier 1 capital requirements held by banks. All three banks have posted higher tier 1 and total capital ratios for the five years under review. This means they are more resilient and less risky in case of an internal or external shock to the economy. Banks have also been encouraged to closely monitor their capital appetite and the sources of their capital to avoid extra capital risk. Regulators have also conducted regular stress testing analysis to assess

banks' ability to withstand stress scenarios in the market. The new framework seems to have increased banks' resilience.

Banks also face liquidity problems during times of crisis. Higher liquidity risk means that a bank holds insufficient liquid assets that can be used to easily cover its short-term financial obligations when they fall due (Onaran, 2016). The new regulations introduced Liquidity coverage and net stable funding ratios to monitor the liquidity levels of banks. All three banks have posted an increasing liquid coverage ratio for the five years. All these ratios are above 100% which is the minimum regulatory standard set by the Basel III framework. This means the banks have sufficient liquidity buffers that can be used when there is a stress outflow of assets from the banks within a short period. The banks have also posted high NSFR for five years. This means the bank managed to lower its liquidity risk during this period. In general, the three banks have reduced their capital and liquidity risks significantly by adhering to the new regulations. This makes it easier for them to withstand future problems in crisis in the future. This trend is good for the economy that relies on the financial health of banks to thrive.

Conclusion

To conclude, periodic performance appraisal is a critical component that is essential to be able to respond quickly to changing circumstances in the market environment and also to potential financial crisis. Thereby, the purpose of regulatory bodies is to guide and enable the financial sector in addressing the issues, fostering security and preventing financial institutions operations. This paper concludes that since the 2008 financial crisis, the banking system has been recovering due to the implementation of rigorous regulations and enhanced financial management within the financial services industry. The mitigating strategies used by banks in the emerging banking system contributed to a minimised risk which led to a more sustainable financial system. However, the data analysed in this paper is reflecting the

financial performance of three UK banks in the past five years and further investigation should be considered.

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