

Major British Bank performance over the Business cycle

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Abstract:

This paper investigates the effect of macroeconomic changes particularly the cyclical nature of bank performance using the dataset of Large British Banks over the period 2004-2011. Financial ratios are employed to investigate whether loan loss provision, lending rate, income level and return on asset show a cyclical pattern. The study found a cyclical pattern before, during and after financial crisis 2008. The results show falling asset prices, high capital requirement, reduce lending and loss in bank balance sheet in the British banking sector. Therefore, for macro and financial stability, it is important to understand that to what extent banks are affected by the macro-economy.

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Introduction:

In order to evaluate the stability and soundness of financial and banking sector, it is important to find the link between business cycle and bank performance. As Walker (1982) pointed economic conditions worsen the quality of loan portfolio which generates credit losses. However, as financial intermediaries, banks are exposed to overall changes in the economic system. In recent years the issue of pro-cyclicality of banks has drawn the attention of both policy makers and academics. Cross (1982) is of the view that in order to guarantee the macroeconomic and financial stability it is important to understand why and to what extent banks are affected by the evolution of macroeconomic. Studies [Lowe and Rohling, 1993; Kaufman, 1998] show that the bank performance is correlated with the business cycle.

Business cycle is a most important component of macro-economic variable which is referred as fluctuation in total economic activity (Jenkinson, 1987). Macroeconomics and macro-economic models are concerned with understanding why these cycles occur and Britton (1991) asserts that unemployment and inflation in the economy occurs due to these fluctuations. The length and duration of these cycles varies and it goes from the highest point of prosperity to the lowest point where GDP increases and decreases along with many other factors such as unemployment, demand for goods and services and spending. Walker (1982) found that there is an obvious relationship between micro and macroeconomic variables such as the aggregate production and consumption level are the result of the individual demands and needs therefore connection is made by macroeconomic models.

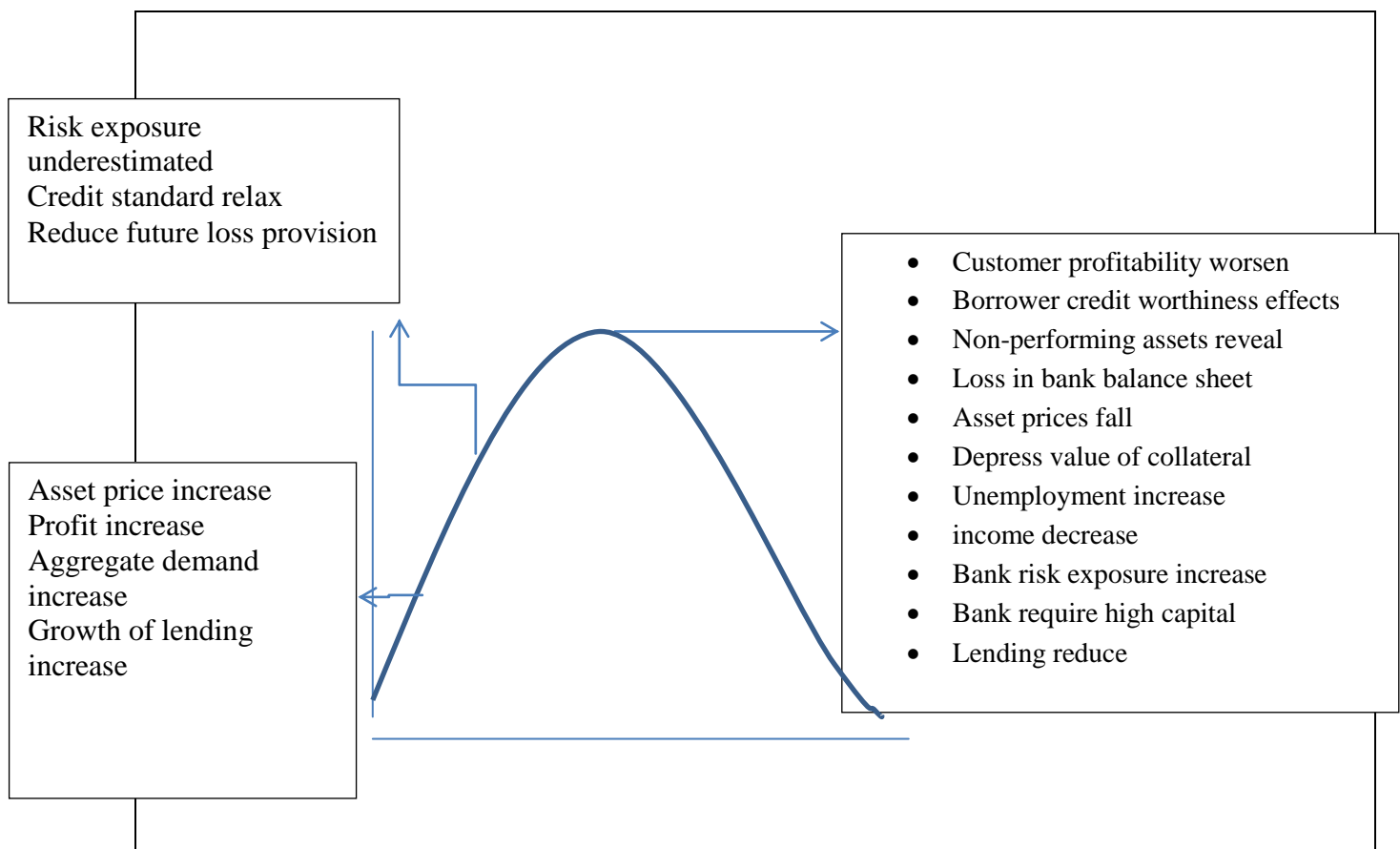
Therefore, if business cycle does affect the performance of the banks then during the recession period, banks financial surveillance need to strengthen. In contrast, if banks' reaction to macroeconomic shocks worsens the effect of downturn then bank needs to take sound steps to alleviate the pro-cyclicality of banking operations (Britton, 1991). As stated by Cross (1982) at the beginning of expansionary phase of bank or any other business, the profit of the firm increase, asset price rise and customers' expectations are positive. At this expansionary phase, the increase in aggregate demand lead to increase in bank lending and economy's indebtedness. Further, during the boom, banks relax the credit standards and provision for future loss thus banks start to underestimate their risk exposures (Walker, 1982). After the peak of this cyclical upturn, profitability from deposits worsens/ decreases and non-performing assets are revealed. This causes major losses on a banks' balance sheet and thus is an example of cyclicality. Jenkinson (1987) is of the view that this drop in profitability may arise due to fall in asset prices and affect the value of collateral and customer financial health. Due to these factors, unemployment in the economy increases which in turn reduces the level of disposable income

and a customers' ability to repay the debts decline. Further, this may cause an increase in the risk exposure of banks for which banks need high capital which becomes very expensive and unavailable. Therefore, bank reduces the level of lending during this period.

This paper aims to contribute to the stream of research on macroeconomic factors and the procyclicality of bank performance using major British banks whose data for the period of 2004-2011. The dataset includes yearly figures from the balance sheet and income statement using bank scope of the major British banks. With respect to previous research, this paper attempts to provide a comprehensive framework showing that the performance of the banks during a specified period follow cyclical pattern. The remainder of the paper is structured as follows. The next section provides a theoretical framework followed by section xx which reviews the literature dealing with procyclicality of banks behaviour and performance. Methodology and data used are described in section 3. Section 4 presents the analysis of the results followed by concluding remarks.

Theoretical Framework:

The theoretical model below provides theoretical foundations for the rest of the paper. The analysis of the research will follow and test the model below. The model shows that bank operations and performance follow a cyclical pattern. At the expansionary stage of the cycle, shows that the asset price increase, profit increase, aggregate demand increase. At the boom, risk exposure underestimated, credit standard relax and loan loss provision reduces. At the recessionary stage of the cycle, asset prices fall, collateral value depress, unemployment increases, lending reduces and banks need high capital.



Banks make loan loss provisions to adjust the value of the loan to reflect their true value when bank believe that the borrower will default. These provisions affect the profitability of the bank as they represent a cost for the intermediary and reduce the book value of the asset (Allsopp, 2002). There are two loan loss provisions set by banks which are static and dynamic where static is a specific one based on current condition of the debtor whereas, dynamic is general provision set against expected losses on non-impaired loans. Kaufman (1998) is of the view that when loan is granted, there is always a positive probability that banks will face losses due to debtor's inability to honour obligations.

Although banking crisis are caused by macroeconomic factors, disturbance anywhere in the economy effect the operations and stability of the banks. Banks due to their nature of business are exposed to many risks rooted in cyclical developments. The most affected banks in this changing economic market are those with low level of capital ratio and those with average reliance on creditor's funds as compare to corporate sector. While, Britton (1991) points that the banks whose assets are in effect longer term and less liquid than their liabilities will also be significantly affected. However, Cross (1982) argues that the health of the banks depend upon the health of the borrowers which in turn reflects the health of the financial system and economy as a whole. To analyse the macroeconomic

determinants of the banks' health, it is always useful to look at the main risks of banks such as interest rate risk, market risk, exchange rate risk, credit risk and most importantly liquidity risk (Guidara et al., 2010). As Arestis et al., (2001) agrees that these risks are directly, or indirectly influence by macroeconomic developments and policies.

Overall macroeconomic data provides the state of the business cycle hence the position of the cycle then determine the earnings of public and private sectors and influence their debt servicing capabilities (Bikker and Kennedy, 1999). When there is excessive borrowing, demand growth and floating production, it turns out to be the boom-bust cycle whereas, debt servicing problems turn out to be sharp downturn.

Review of Past studies:

There is abundance literature studying the link between banking sector and the business cycle (Albertazzi and Gambacorta, 2006, Fase, 2001, Bikker and Hu, 2001, Arestis et al., 2001). As discussed above banks as a suppliers of credit, play an important role in the business cycle. During cyclical downsizing, lending policy of bank becomes less liberal. It is important to know the correlation between banks performance and the business cycle. Some researchers, (Levine, 1997; Van der Zwet and Swank, 2000; Arestis et al., 2001; Fase, 2001) found a positive relationship between financial system and economic growth. Additionally, Demirgüç-Kunt and Huizinga (1998) in their study found that banks profitability and interest margin is affected by the macroeconomic factors.

Salas and Saurina (2002) in their study on the relationship between problem loans and the economic cycle in Spain, over the period of 1985-1997 found that during economic boom, bank expand their lending activities and increase their market share. This act of banks increases lending to borrowers of lower credit quality leading to an increase in bad loans which is seen in the recent business cycle which is the focus of this study that at expansionary stage banks started lending more and on easy credit standards. It is further observed in the research that bad loans increase in recessionary period. They concluded that the macroeconomic shocks quickly transmit to bank balance sheets.

Pesola (2001) focused on banking crisis and assessed the usefulness of macroeconomic shocks. He explained ratio of loan loss to lending and number of non-financial companies' bankruptcies per capita. According to his research, the GDP growth below the forecasts contributed to the banking crisis in Nordic countries. However, Albertazzi and Gambacorta (2006) in their research on bank profitability and business cycle found that due to controlled macroeconomic and structural factors, banks in the UK make higher profits which are due to flexible cost structure. Moreover, banks in the UK react more

quickly to exogenous shocks. Further, Bikker and Hu (2001)'s research on cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements establish that enlargement of credit loss provision depend strongly on business cycle as provision increase in bad times. Therefore the provision is $2/3$ greater at the time of less than 2% GDP growth and it is almost 2.5 times higher when GDP growth is below -2%. In balance sheet channel theory, demand factors are considered as a factor which creates fluctuations in lending but not the supply. Ervin and Wild (2001) stated that the business cycle may be responsible for a decline in credit demand.

Baele and Vennet (2005)'s study on whether stock returns of European banks differ from countries exhibit different risk factor sensitivities over the business cycle found the sensitivity of European banks to unexpected changes in market return and interest rates.. They argued that there is an obvious association between business cycle, asymmetrical information, and default risk in banks. They further argued that a shift in risk profile of banks over the business cycle is caused by the changing incentives of banks. Such as a downturn in economy may cause conditions in which bank lower their lending standards and increase their riskiness. It is therefore suggested that the banks with higher capital adequacy are better shielded in condition of adverse economic conditions hence are less risky and are able to make use of any profitable lending opportunities.

Bikker and Hu (2002) suggested that there are two types of causality for the correlation between banking system and macroeconomics such as economic development of banks and development of financial system. Some scholars (Levine, 1997; Van der Zwet and Swank 2000; Arestis, Demtriades and Luintel, 2001; Fase 2001) studied the influence of the development of banking and financial system on economic growth however found, positive effect when focusing on long term and negative when focusing on short term. Additionally, Arpa *et al.* (2001) in his research on the influence of macroeconomic developments focused on bank income level and provision for future credit loss during the period 1990-99. It is revealed in that study that banks make more provisions for credit risk as GDP growth decline due to procyclical effect and income level rises with countercyclical effect.

Guidara et al. (2010) in their study on Performance, Risk and Capital Buffer under Business Cycles and Banking Regulations in the Canadian Banking Sector emphasise that banks should build up their capital buffer during economic boom to avoid economic distress, increase risk and decrease in performance. This concurs with Arpa et al., (2001), who also emphasised that capital buffer can be a hedge against performance deterioration.

Research Objectives:

To analyse the cyclical pattern of British banking during and after financial crisis 2007-2008, the study focused on the following specific objectives.

- To review that the macroeconomic factors affect the operations of the banks.
- To study whether the banking operations follow the cyclical pattern
- To appraise that whether banks follow business cycle

Scope of the research:

In this research, we investigated the cyclical pattern followed by banking activities. After the financial crisis 2007-2008, far reaching impacts on banking sector were observed however, the macroeconomic activities in the economy are equally responsible for the crisis created in the financial sector. This investigation is in the context of business cycle and to analyse that banking activities follow cyclical pattern. The study used secondary data which is collected from Bank scope data base and annual reports of banks to analyse ratios and performance indicators to analyse the cyclical pattern. The financial data is collected for past eight years to get an insight of the research.

Methodology:

The study aims to analyse the procyclicality in major British banking operations and the performance over the business cycle.

Descriptive financial ratio analysis is used in this paper to analyse the cyclical pattern of the performance of the Major British banks during the period of 2004-2011. The period of 2004-2011 is selected to give a clear picture of the period before, during and after financial crisis 2008-2009. This episode covers the full business cycle which develops from the trough in 2008-2009, an economic expansion or growth in 2004-2007. Fig (1) above is the main model to be followed and tested in this analysis. Data from only commercial banks are employed to obtain homogenous group of banks. Beside, commercial banks tend to provide more balance sheet options.

Ratio analysis is the main tool used to analyse the performance and stability of the banking sector over the period. Ratio analysis helps to compare different time period. It helps in trend analysis where banks can be compared over different time periods. The main disadvantage of ratio analysis is that it is unable to depict the pitfalls. However, an analysis based on absolute figures is desirable in this type of

study. For the purpose of finding the cyclical pattern of banking operations and that the operations follow business cycle, two main ratios and data for lending, loss provision are examined.

Additionally, to examine whether banks follow cyclical pattern during 2004-2011, Loan loss provision, income level and Loan Growth is selected as variable to test correlation and multiple regression between these variables as there is significant relationship highlighted between them by the researcher. SPSS software is used to analyse the relationship between the variables and to find the changing.

Bolt et al., (2010) measured the bank profitability during recession. In this research regression analysis is used to measure the procyclicality of bank profit. Bikker and Hu (2001) analysed cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements. In this research financial ratio analysis is first used to calculate the ratio and their correlation coefficients are used to find the relationship of variable during the business cycle.

Selected Variables for correlation and regression:

Loan loss provision (LLP):

Loan loss provisions are the expenses in the bank which are set aside by the authorities as an allowance for bad loans. The value of these is always seen higher at the time of recession when customers' defaults or terms of loans are renegotiated. These are also called as valuation allowances.

Loan Growth (LG):

The level of loans over the period is considered as Loan growth. In a business cycle, loan level increases when the cycle is on expansionary stage, credit standards are easy, and collaterals are not paid attention.

Income level (IL):

Income level banks increases with an increase in loans growth however this is short term increase when banks do not check the credit position of the borrowers and therefore, IL increases in the expansionary period and reduces when the borrower default during the recessionary stage of the cycle.

Other variables:

Return on Asset: ROA: Return on Asset is measured by dividing net profit/total assets. This ratio shows the ability of bank management to convert the assets into net profit by investing in profitable investments. The greater the ratio, the better will be the profitability.

Net Profit Margin (NPM): It shows the ability of bank to generate profit from sales. NPM is compared with the competitors in the industry. The higher the NPM the better is the position of the banks as compare to competitors.

Sample:

The data used in this study consist of 2004-2011 years, banking statistics that are used to calculate and analyse the cyclical pattern followed by banking activities and operations. Convenient sampling design is used whereby the respondents are selected on the basis of research convenience.

Data analysis:

Specific period in the sample is focused that should offer additional insight of how British banks behaved in the recent economic downturn.

Result and Discussion:**Quality of loan ratio:**

The stability of financial institutions depends upon many internal and external factors. The internal factors include the operations of the banks such as assets, liabilities and capital management. Assets are the main performance indicators where quality of assets determines the survival of business as Siraj and Pillai (2011) stated that the financial institutions were considered stable during the crisis if the profitability and quality of assets were not affected. Loan on bank balance sheet are one of the main income generating assets therefore, the quality of loan is paramount for stability and performance. Due to low credit quality borrowers borrow on the generous terms that are offered by the banks during the credit boom which turn much riskier. This riskier lending reduces the quality of loans as well.

For the quality of loan ratios, loan loss by net loan ratios is calculated. Fig (1) and table (1) below shows the asset quality of major banks for the period 2004-2011. Asset quality is measured in terms of loan loss by net loan ratio.

Table (1) Loan loss per net loan ratio

Bank	2004	2005	2006	2007	2008	2009	2010	2011
HSBC	0.019	0.0153	0.0156	0.0196	0.0256	0.0293	0.02095	0.0186
Barclays	0.0127	0.0128	0.011	0.010	0.014	0.0255	0.0289	0.044
RBS	0.019	0.0093	0.0084	0.0077	0.012	0.0235	0.0325	0.0383
Lloyds	0.010	0.011	0.0115	0.0114	0.0147	0.0331	0.0300	0.032
Standards Chartered		0.0154	0.0155	0.0117	0.0137	0.011	0.01004	0.0113

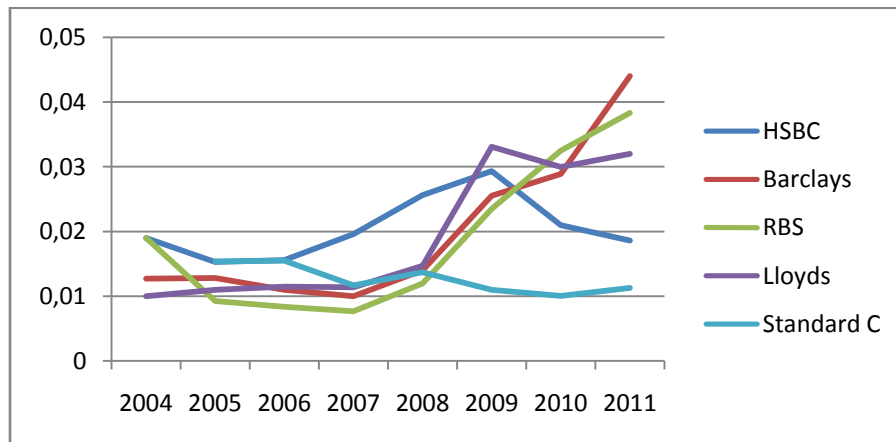


Fig (1) Loan loss per net loan ratio

Fig (1) and Table (1) shows an increasing trend from 2004-2008 with a huge downturn during the financial crisis 2008-2009. In case of HSBS the ratio started increasing from 2006, where loan loss to net loan ratio increased by 30.6% from 2006 to 2007 and further increased in 2009 by 14% before decreasing in 2010 and 2011. Lloyds TSB and Standard Charter follow the same trend where the ratio increased 2004-2007 attaining a boost in 2008-2009 and a great fall in 2010-2011. The percentage increase in net loans is greater than the percentage increase in loan loss reserves. This therefore means that at the time of growth banks increase lending which increases bank's profit for short term and the loss provision decreases in these good times.

However, at the onset of the economic downturn, bank lending rate was also affected and the net loans per year started to fall after the financial crisis due to the fact that the customer deposits were reduced. As Bikker and Kennedy (1999) argued that the net loans were reduced due to increased capital requirements by the regulatory authorities. As it can be seen from the above analysis that the banks' loan loss to net loan ratio follows the cyclical pattern as it increased in the growth period of the cycle. It was highest at the maturity and boom stage of business cycle and it declined after attaining the boom.

Lending growth:

As discussed above in the model, during the boom, banks relax the credit standards and provision for future loss therefore; banks start to underestimate their risk exposures. When the credit standards are relaxed, banks issue loans with less collateral or even without collateral. Customer credit history was ignored and guarantees were not required to back loan application. Therefore, borrowing and bank lending was increased over the cycle boom. Ivashina and Scharfstein (2010) stated that market risk exposure determine the economic value of financial institutions. Traditional banks borrow short term from money market in shape of repurchase agreement and lend for long term via securities such as mortgage bonds. Many banks do not take into account the risk exposure and underestimate the principle risk and other associated risks by avoiding the duration of the exposure between execution and final settlement of the trade during the expansionary period. The lending growth for major British banks is analysed in the table (2) below.

Table (2) Lending growth:

Year	HSBC	Barclays	RBS	Lloyds	Standard
2004	672891	207259	379791	157059	
2005	740002	268896	417226	176635	112177
2006	868133	282300	466893	190135	140524
2007	981548	345398	829250	209814	154266
2008	932868	461815	874722	242735	174178
2009	896231	420224	728393	245226	198292
2010	958366	427942	555260	611089	240358
2011	940429	431934	515606	584237	263765

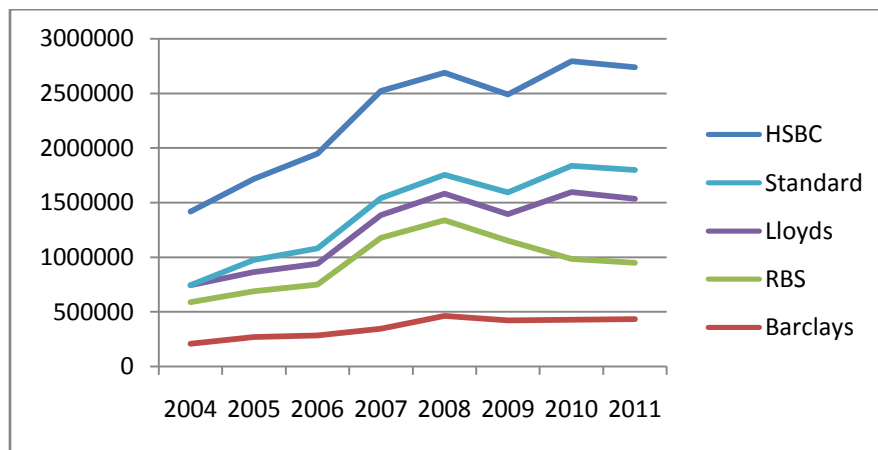


Table (2) lending growth

From fig (2) and table (2) above it can be seen that the level of lending increased from the expansionary phase of the business cycle. The lending rate in HSBC increased from 672891 in 2004 to 740002 in 2005. It continued increasing till 2007 during the expansionary and growth period of business cycle. Lending increased by 12.15% from 2006-2007 before decreasing by 5.3% in 2008. Barclays shows a stable and consistent lending behaviour as compare to other competing banks where the lending was reduced in Barclays by 9.8% in 2009. The reason could be that the bank may have enough capital to make loans and good access to deposit financing. A major fall in lending can be seen in RBS reducing by 20% in 2009 when the lending falls from 874722 to 728393 from 2008-2009. This decrease in lending resulted from the contraction of lending supply and demand for loan. It can also be argued that this decrease may be due to increase in loan maturity. However, when firms extend the maturity of loans, at the peak of boom there would be a decrease in the loans that mature during the crisis which result in low lending rate.

It is clear from fig (2) above that the lending rate in the banks follow the cyclical pattern which increases in the expansionary period when the credit standards are easy, risk exposure of banks are underestimated and demand for growth increases. In contrast, after attaining the boom the lending rate decrease due to fall in asset prices, increased rate of refinancing, risk exposure increases and depressed value of collaterals.

Bank Performance:

Profitability ratio:

There is always a risk reward trade-off when risk taking generates return through various mechanisms. For example, banks grant loans to risky customers, the return increases for short term but the credit risk

increases which affect the profitability in the long run (KPMG, 1998). The Profitability of bank can be measured through different ratios one of which is net profit margin which shows how efficiently the bank is turning its revenues into profit after excluding all the expenses. Albertazzi and Gambacorta (2009) stated that the higher profitability in banks depend upon the business cycle as the profit in banks is procyclical. GDP influence both lending activities and credit portfolio quality as on expansionary phase of business cycle, the GDP start to grow steady and gradually and increases substantially at the boom and start to drop when the decline is seen in the business cycle. Cook (2011) suggests that increase in GDP increases profit in the firm where investment increase and demand for loan increases.

Table (3) and Fig (3) below shows the net profit margin (NPM) of major British banks over the period of 202-2011.

Table (3) Net profit margin

Year	HSBC	Barclays	RBS	Lloyds	S.chartered
2004	0.449	0.48	0.58	0.47	-
2005	0.50	0.47	0.56	0.45	0.44
2006	0.46	0.57	0.61	0.54	0.43
2007	0.53	0.53	0.60	0.55	0.45
2008	0.15	0.45	-0.22	0.10	0.44
2009	0.16	0.88	-0.17	-0.52	0.45
2010	0.35	0.36	-0.11	-0.007	0.51
2011	0.43	0.32	-0.15	-0.06	0.48

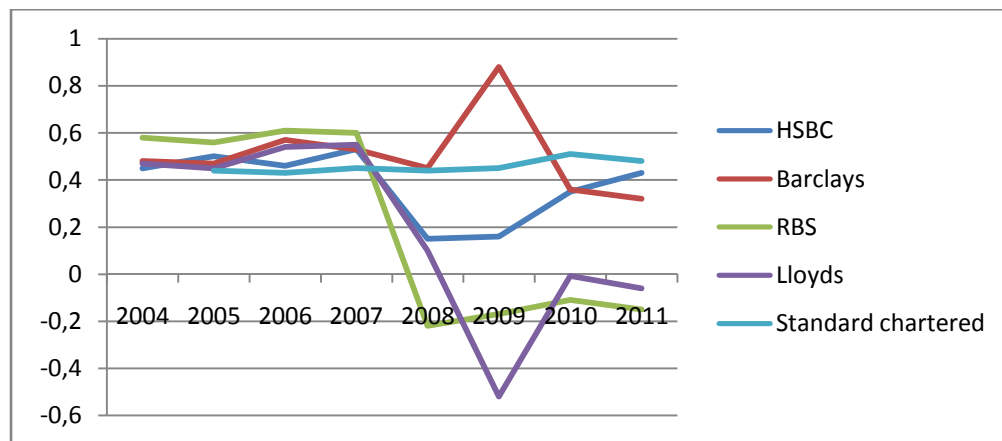


Fig (3) Net profit margin

Fig (3) and Table (3) above shows an increasing trend of profitability from 2004 which remain consistent till 2006. However, a decline in almost all of the banks above is seen during the period of financial crisis 2007-2008 and it remained low till 2009. Lloyd TSB net profit margin reduced from 0.60 in 2007 to -0.22 in 2008 which was the result of economic downturn where increases in revenues were less than the increase in operating expenses so the bank faced negative income. The net profit margin in HSBC dropped from 0.53 in 2007 to 0.15 in 2008 which was increased from 0.46 in 2006 to 0.53 in 2007. RBS followed the same situation as that of Lloyd TSB where the NPM reduced from 0.60 in 207 to -0.22 in 2008. In contrast, Barclays' net profit margin (NPM) reduced in 2008 but less than other banks due to increased revenues and less operating expenses.

As seen above in the fig (3) the net profit margin follows a cyclical pattern where at the expansionary stage the net profit margin increases due to increase in lending which can be seen in fig (2) and table (2) above. As Bolt et al. (2010) asserted that among different bank profit components, some of them may be responsible for the co-movement with the business cycle. He further stated that procyclicality of bank profit may be the result of bank procyclical lending nature which depends upon the GDP over the period. Therefore, as GDP increase in the expansionary phase, lending increases therefore, the net profit margin increases and vice a versa. The decline in the net profit margin during the recession stage of the cycle is due to increase in loan losses during economic decline (Jimenez et al., 2009).

Return on assets:

Return on assets (ROA) is another profitability ratio which shows the performance of the banks over the business cycle. Returns on assets depict how efficiently banks transform their assets into income. Siraj and Pillai (2011) are of the view that ROA is affected by the economic changes in the

market such as changes in the GDP where unit decrease in GDP decreases the ROA, which fall during recession and increases in expansionary phase of business cycle.

The table (4) and fig (4) below shows ROA of major British banks over the period of 2004-2011.

Table (4) Return on assets

Year	HSBC	Barclays	RBS	Lloyds	S. Chartered
2004	1.11	0.61	0.88		
2005	1.14	0.53	0.76	0.85	0.92
2006	1.00	0.54	0.74	0.89	0.98
2007	0.97	0.46	0.74	0.95	1
2008	0.27	0.32	-0.58	0.21	0.87
2009	0.27	0.60	0.03	0.40	0.80
2010	0.59	0.32	-0.07	-0.03	0.93
2011	0.72	0.26	-0.12	-0.28	0.88



Fig (4) Return on assets

Fig (4) and table (4) above shows the ROA position of British banks over the period of 2004-2011. Return on assets on all the banks increase during the expansionary phase of business cycle due to increased lending and increasing GDP. However the ROA fall rapidly during the financial crisis 2007-

2008 which is the recession phase of cycle. ROA in HSBC decrease from 0.97 for the year 2007 to 0.27 in 2008 and then it started to increase in the recovery stage of cycle during 2009-2011. The downturn trend is also seen in other banks such as RBS, ROA fall from 0.74 in 2007 to -0.58 in 2008 which is due to losses over the period. Lloyds TSB, Standard Chartered and Barclays follow the footsteps of other banks where the return on assets fall during 2007-2008, and assumed the upward trend in 2009.

It is clear from the fig (4) above that ROA follow a cyclical pattern which increases from 2004-2005 which is an expansionary phase of the cycle and reach to the boom of the cycle due to increased lending, easy credit standards, and increase profit for the bank. Furthermore, the decline or recession stage starts from 2007-2008 where profitability decreased, asset prices fall, and non-performing loans reveal. Lending reduced during recessionary phase because banks require high capital for liquidity to cover the losses which occur during recession.

Income level:

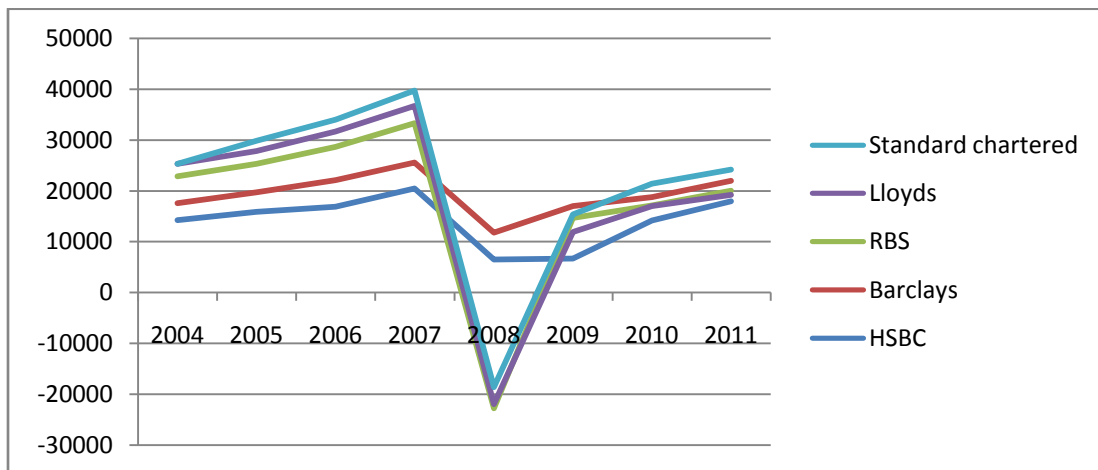
The profitability of the banking system depends upon the phases of business cycle in the economy where it operates therefore; banks tend to smoothen the income level over the business cycle to limit the volatility bank profits (Wahlen, 1994; Ahmed et al., 1999). However, Cornett and Tehranian (1994); Calomiris and Hubbard, (1995) argued that due to the presence of agency problem and tax-adverse conditions, the recessionary phase of the business cycle put negative impact of business cycle on the profitability of the banks. Further, Apergis (2009) asserts that there is positive relationship between bank profitability and the business cycle and this relationship continues in either phase of business cycle. The table (5) and fig (5) below shows the income level of British banking over the period of 2004-2011.

Table (5): Income level over the period of 2004-2011

Year	HSBC	Barclays	RBS	Lloyds	S.chartered
2004	14258	3310	5289	2438	
2005	15837	3872	5558	2566	1971
2006	16871	5256	6497	3020	2354

2007	20455	5126	7712	3416	2989
2008	6498	5249	-34542	844	3344
2009	6694	10289	-2323	-2773	3477
2010	14191	4563	-1666	-93	4414
2011	17944	4046	-1969	-795	4933

Fig (5) Income level over the period of 2004-2011



As seen above in fig (5) and table (5) the income level of the fluctuation over the period which is selected as a complete business cycle. The level of income increases in all the banks from 2004-2006 but a dramatic fall is seen in 2007-2008. In RBS the income level reduces from 7712 in 2007 to -34542 in 2008 this fall is due to the reduces revenues, reduced lending and increased operational expenses. Lloyds and Standard Chartered follow the same pattern as that of RBS whereas, Barclays and HSBS is in good position as compared to other banks in the sample. The reason behind this scenario is that these banks take proactive activities to insulate profitability during the downturn of business cycle which turn sensitive activities of business cycle with less sensitive activities.

The income level as shown above in fig (5) follows a cyclical pattern where in the expansionary phase, income increases, on boom income is at the peak due to increased lending in 2007. The level of income however falls dramatically after reaching the peak in the recessionary phase. As Apergis (2009) stated that during the recessionary phase of business cycle, bank loan portfolio performance becomes risky which lead to credit losses and thus lowers the bank profitability. Logan (2000) is of the views that during the recessionary phase banks realize that borrowers borrow from non-bank lenders to offset potential shortfall in bank lending.

Future loss provision:

Loan loss reserve management coherent with increase of loan loss reserves in good times of bank and economy and decrease in bad times such as recessionary phase which reduces profit volatility (Kim and Santomero, 1993). Greenwald and Sinkey (1988), Collins et al. (1995), and Ahmed et al. (1999) have found that loan loss provisions increase in bad time and decrease in good times as there is a positive relationship between loan loss provision and bank earnings. Further, there is a negative relationship exists between loan loss provision and GDP, suggesting an anti-business cycle behaviour of loss provision (Laeven and Majnoni, 2002). Loan loss provision of major British banks is shown below in table (6) and fig (6) below for the period of 2004-2011.

Table (6) Loan Loss provision

Year	HSBC	Barclays	RBS	Lloyds	S.chartered
2004	6191	1093	1485		
2005	7801	1567	1709	1302	369
2006	10573	2068	1873	1560	644
2007	17242	2782	1865	1721	754
2008	24937	4913	4555	2876	1321
2009	24942	7358	11373	16028	2000
2010	13548	5625	9299	10771	883
2011	11505	3790	6969	8069	908

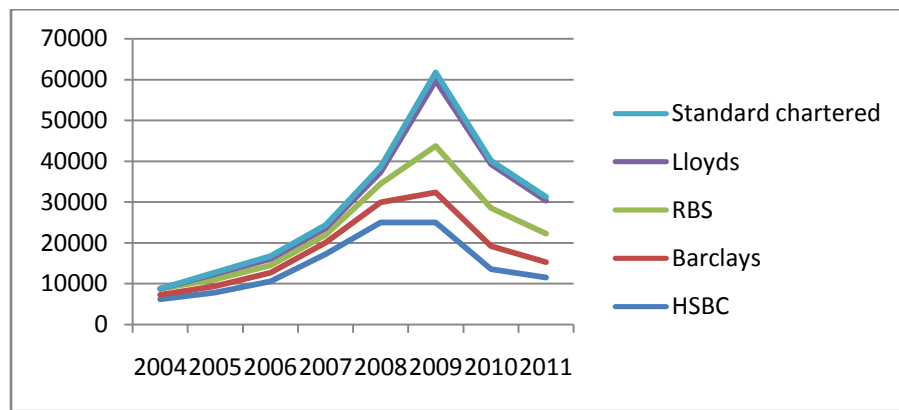


Fig (6) Loan Loss Provision

Fig (6) and Table (6) above shows the trends of loan loss provision of British banking trend over the period. Loan loss provision is less at the expansionary stage of the business cycle in all of the banks but the level start increasing during the period of recession. As seen from the Table (6) above, the value of loan loss in Lloyds increased from 2876 in 2008 to 16028 in 2009 which is the recessionary period due to financial crisis. Loan loss provision follows a cyclical pattern over the period where in average the provision is less in expansionary period and increases during recession or decline of the cycle. During the recessionary period capital regulations increase capital requirement and credit level reduces which decrease the profit in the bank.

Regression analysis:

The sample comprises of five major British banks and the technique used to test the relationship between variables is multiple regressions using SPSS. The table (7) shows the regression results. The first column of the table presents the coefficient of each independent variable which are Loan growth (LG) and Income level (IL) which indicates the strength of influence between Loan loss provision (LLP) and IL. The fifth column illustrates p-value followed variance inflation factor (VIF) tells about slander error.

Table (7) Coefficient from SPSS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
Constant	-2725.932	9313.016		-.293	.782	-26665.803	21213.938		
IL	-.786	.187	-1.123	-4.190	.009	-1.268	-.304	.617	1.620
LG	.032	.012	.708	2.644	.046	.001	.064	.617	1.620

a. Dependent Variable: LLP

The linear regression model will be as follows:

$$LLP = B_0 + B_1X$$

$$2725.932 = (-.786 * \text{Income level} + 0.032 * \text{loan growth})$$

This means that one unit increase in income level will decrease the loan loss provision -0.786 times. One unit increase in LG increases LLP by 0.032 times.

The p-value is showing whether IL is the best predictor of LLP or not. As seen from the table the p-value is 0.05 which means both IL and LG are best predictor of LLP pattern. The last column of the table shows VIF which shows that the independent variables are correlated and no collinearity. VIF can be calculated as 1 divide by tolerance so if the VIF values are less than 10 it means there are no issues with variable. Therefore, in this case the VIF is less than 10 which mean that independent variable are correlated either positive or negative. As seen from the above analysis, that the correlation between income level and loan loss provision is negatively correlated when one increases other decreases.

Table (8) R and R- Square**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.882 ^a	.778	.690	2812.839

a. Predictors: (Constant), LG, IL

b. Dependent Variable: LLP

Table (8) shows that the adjusted r-square value 0.69 shows that 69% of the variation in LLP is explained by IL. Further, the correlation between IL, LG and LLP is shown below in table (9):

Table (9) Correlation between LLP, IL and LG

		LLP	IL	LG
Pearson Correlation	LLP	1.000	-.685	.014
	IL	-.685	1.000	.619
	LG	.014	.619	1.000
Sig. (1-tailed)	LLP	.	.031	.487
	IL	.031	.	.051
	LG	.487	.051	.
N	LLP	8	8	8
	IL	8	8	8
	LG	8	8	8

As shown above (Table 9) the correlation between LLP and IL is negative which means that the increase in income level decreases the level of Loan loss provision in banks whereas, LLP and LG are positively related which shows that the increase loan growth increases the level of LLP. However, LG and IL are positively correlated where increase in one variable increases the other. The correlation between LLP and IL is -0.685 which means these two variables are negatively correlated because the profit which banks earn from loans is used back in lending activities or full fill the capital requirements hence bank pay less attention to provision in good times.

Therefore, it can be concluded that the IL and LLP follows opposite cyclical pattern when brought together as shown below.

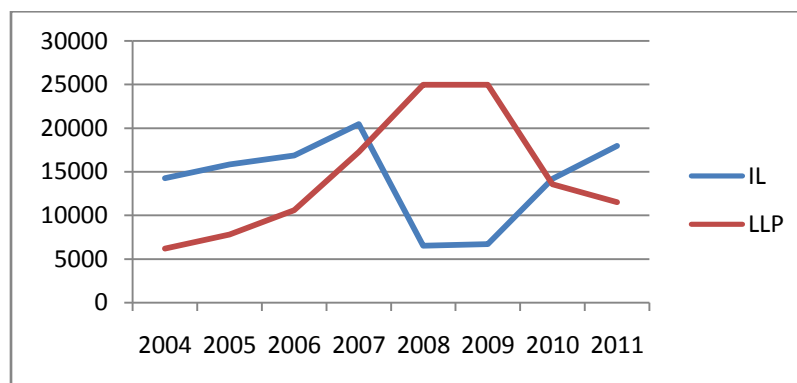


Fig (7) cyclical pattern of IL and LLP

From the above correlation and regression analysis between Loan Growth (LG), Loan loss provision (LLP) and Income Level (IL) it is clear that there is negative correlation between Loan Loss Provision (LLP) and Income level (IL) where an increase in Income level decreases the level of loan

loss provision and vice versa. The adjusted r-square in regression analysis shows that 69% variation in IL explains the changes in LLP. This is mainly because the when Loans grow at the expansionary stage of business cycle where the credit standards are relaxed, income for the bank increases in the short run. The increase in bank income in turn reduces the level of loan loss provision. The credit quality of the loan move up and down with the business cycle when the business cycle is on recessionary stage, bank take larger amount away from low profit on behalf of provisions. While in times of expansionary stage, the provision of for expected credit losses go down, augmenting profit. This countercyclical behaviour in banks for provision, therefore, reinforces the cyclical nature of profit.

Summary and Conclusion:

This approach yield two main empirical results.

First, this study find evidence that bank income, level, profit, loan loss provision and performance behave pro-cyclically, and that this co-movement is especially strong during severe recessions of business cycle. Among the different profit components, loan loss provision is selected to test the relationship between income level and LLP which found the both follow opposite cyclical pattern where LLP is the driver of this asymmetry. This research found that each percentage contraction of IL during recession lead to increase in LLP. Secondly, severe recessions decrease the level of lending, income, net profit ratio which is high during the expansionary phase of the cycle.

The paper aimed to provide an in depth detail of bank performance over the business cycle. The recent financial crisis 2008-2009 which lead to severe recession revived the interest in the issue of pro-cyclicality of bank performance, profitability and stability. This research contributes to extant research in to the procyclical nature of bank performance. Firstly, a theoretical framework is developed for bank performance over the business cycle which takes into account the lending trend, income level, asset price, loan loss provision, and credit standards. Secondly, the procyclicity of net profit margin, Loan loss per net loan ratio and return on asset ratios are also estimated. Further, the relationship between variables and correlation between them is analysed by using regression analysis. Finally, the research assesses the degree of procyclicity of bank performance especially income level and loan loss provision over the business cycle.

The paper indicate that the performance of major British banks follows a cyclical pattern over the period of 2004-2011 which is considered as business cycle where 2004-2007 is the expansionary period of the cycle, 2008-2009 is the downturn and 2010-2011 is the recovery stage of the cycle. The study

found that banks increased the size of their loan portfolio during the period of 2004-2007. Although the bank aggressively increased their loan portfolio, the relaxed credit standards increased credit risk during the period of recession. Further, the non-performing loans revealed in the downturn trend of cycle. However, performance such as return on Asset (ROA) and net profit margin (NPM) follows a cyclical trend which increases during the expansionary period and deteriorated during 2008-2009 due to global financial crises which is considered as the trough of the cycle.

This analysis has also analysed the loan loss provision (LLP) in the major British banks over the period of 2004-2011. The level of LLP worsened when the income level increases and LLP increases during the period of recession. Further, enlargement of provisions for loan loss depends strongly on the business cycle in the sense that LLP increase in bad times. Apparently, bank reserve more in good times or expansionary stage when everything seems good.

References

- Ahmed, A.S., Takeda, C. and Thomas, S. (1999) "Bank loan loss provisions: A Re-examination of capital management, earnings management and signalling effects", *Journal of Accounting and Economics* 28, 1-25.
- Allsopp, C. (2002), "Macroeconomic Policy Rules in Theory and Practice", *Bank of England Quarterly Bulletin*, Winter, 485-504.
- Apergis, N., (2009) "Bank profitability over different business cycles regimes: evidence from panel threshold models", *Banks and Banks system*, Vol. 4, Iss.3,
- Arestis, P., Demtriades, P.O., Luintel, K.B, 2001, Financial development and economic growth: the role of stock markets, *Journal of Money, Credit and Banking* 33, 16-41.
- ARPA, M., I. GIULINI, A. ITTNER and F. PAUER (2001), "The influence of macroeconomic developments on Austrian banks: implications for banking supervision", *BIS Papers*, no. 1, pp. 91-116. Available from: <http://www.bis.org/publ/bppdf/bispap01c.pdf> [Accessed on: 10 November 2012]

- Bolt, W., Haan, D., L., Hoeberichts, M., Oordt, V., M., and Swank, J., (2010) "bank profitability during recession", De Nederlandsche bank. Available at: http://www.dnb.nl/binaries/Working%20paper%20251_tcm46-236504.pdf [Accessed on 20 November 2012]
- Baale, L., and Vennet, V., R., (2005) "Bank Behaviour across the Business Cycle", *European commission*.
- Bikker, J.A., Kennedy, N.O., 1999, *Composite leading indicators of underlying inflation for seven EU countries*, *Journal of Forecasting* 18, 225-258.
- Bikker, A., J. and Hu, H., (2001) "cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new basel capital requirements", *research series supervision*, Available at: http://www.dnb.nl/en/binaries/ot039_tcm47-146052.pdf [Accessed on: 9 November 2012]
- Cornett, M.M. and Tehranian, H. (1994) 'An examination of voluntary versus involuntary security issuances by commercial banks: The impact of capital regulations on common stock returns', *Journal of Financial Economics*, 35, 99-122.
- Collins, J., D. Shackelford and J. Wahlen (1995), "Bank Differences in the Coordination of Regulatory Capital, Earnings, and Taxes", *Journal of Accounting Research* 33(2), 263-292.
- Cook, K., (2011) GDP vs. Corporate Profits: Is there a true disconnect? Available at: <http://www.zacks.com/commentary/18364/gdp-vs-corporate-profits-is-there-a-true-disconnect>
- Calomiris, C.W. and Hubbard, G.R. (1995) 'Internal finance and investment: Evidence from the undistributed profit tax of 1936-37', *Journal of Business* 68, 443-468.
- Demirgüç-Kunt, A., Huizinga, H, 1998, Determinants of commercial bank interest margins and profitability: some international evidence, Working Paper, World Bank, Washington DC.
- Ervin, W. And T. Wild (2001), *Capital Volatility and Pro-cyclicality in the New Accord*, Credit Suisse First Boston, London.
- Fase, M.M.G., 2001, Financial intermediation and long-run economic growth in the Netherlands between 1900 and 2000, in: Klok, H., Schaik, T. van, Smulders, S. (red.), *Economologues, Liber Amicorum Prof. dr.Th. van de Klundert*, Katholieke Universiteit Brabant, Tilburg, 85-98.
- Greenwald, M.B. and J.F. Sinkey Jr. (1988), "Bank Loan-Loss Provisions and the Income-Smoothing Hypothesis: An Empirical Analysis, 1976-1984", *Journal of Financial Services Research* 1, 301-318.
- Ivashina, V., Scharfstein, D., (2010) "Bank lending during the financial crisis of 2008", *Journal of financial economics*, Vol. 97, Iss. 3, pp. 319-338
- Jiménez, G., S. Ongena, J.L. Peydró-Alcalde, and J. Saurina (2009), Credit supply: Identifying balance-sheet channels with loan applications and granted loans, CEPR Discussion Paper Series 7655.
- Kim, D. and A. Santomero (1993), "Forecasting Required Loan Loss Reserves", *Journal of Economics and Business* 45, 315-329.
- Levine, R., 1997, Financial development and economic growth: views and agenda, *Journal of Economic Literature* XXXV, 688-726.
- Laeven, L., and Majnoni, G., (2002) "Loan Loss Provisioning and Economic Slowdowns: Too Much, Too Late?", *World Bank*.
- Logan, A. (2000) 'The early 1990s small banks crisis: Leading indicators', *Financial Stability Review*, Bank of England.

- Pesola J. (2001), "The role of macroeconomic shocks in banking crises", Bank of Finland Discussion Papers, n. 6, Helsinki.
- Siraj., K., K., and Pillai, S., P., (2011) "Asset Quality and Profitability of Indian Scheduled Commercial Banks during Global Financial Crisis", *International research journal of finance and economics*, Iss. 80.
- Salas V. and Saurina J. (2002), "Credit risk in two institutional settings: Spanish commercial and saving banks", *Journal of Financial Services Research*, Vol. 22, issue 3, December.
- Van Der Zwet, A., M., C., And Swank, J., (2000), "Financial fragility and macroeconomic performance. A comparison of emerging and highly developed countries", *DNB Staff Reports*, no. 52, De Nederlandsche Bank; <http://www.dnb.nl>.
- Wahlen, J.M. (1994) 'The nature of information in commercial bank loan loss disclosures', *The Accounting Review*, 69, 455-478.
- Zwet, A.M.C. van der, Swank, J., 2000, Financial fragility and macroeconomic performance. A comparison of emerging and highly developed countries, *DNB Staff Reports* no. 52, De Nederlandsche Bank (www.dnb.nl).