Examining Relationship of Income Diversification, Asset Quality with Bank Profitability: Implication for Indian Banks

Dhananjay Bapat
Indian Institute of Management, Raipur
Mahim Sagar
Indian Institute of Technology, Delhi

Abstract

We study empirically the impact of ownership change and size change on diversification and other bank performance measures for 46 public sector and private sector banks in India over the period from the year 2006- 07 to the year 2012-13. These banks comprise more than 90 percent of the business of scheduled commercial banks. A significant difference for diversification measures was observed when comparing public sector banks with private sector banks. While comparing on the basis of bank size, significant differences were not observed for diversification measure for majority years. We found negative relationship between Non- Performing Assets (NPA) and Return on Assets (ROA). In addition, diversification in the recent two years exhibits a positive relationship with return on assets.

Keywords: Ownership, Size, Diversification, Performance, Indian Banks, Return on Assets (ROA), Non-Performing Asset.

1. Introduction

Diversification and performance have gathered significant research attention in recent years. However, scant attention is paid from the perspective of emerging countries, in general and India, in particular. Banks derive income from interest and non-interest incomes. With the increased pressure on interest income, banks are looking at the option of enhancing income from non- interest sources. The study of Indian banking sector from diversification perspective might contribute to existing literature.

The objective of the paper is to measure the impact of ownership and size on various banking measures such as Ratio of Non- Interest Income to Interest Income (Measure of Diversification), Return of Assets (ROA), Non-Performing Assets (NPA), and profit per employee. The paper deals with secondary data which were collected from the year 2006-07 to the year 2012-13. In the study, diversification was measured through a ratio of non-interest income to interest income, which is in confirmation with the previous study (Gambacorta, Scatigna & Yang, 2014). In addition to examining the impact of ownership and size, our study intends to assess the antecedents of bank performance which were measured through return on assets (ROA). While examining antecedents to performance, measures such as credit quality, diversification and liquidity were treated as independent variables. In the banking context, diversification has been studied from the perspective of expansion of branches, increase in assets, non- traditional diversification and various banking channels (Hayden, Porath and Westernhagen 2007). With the pressure on interest income, there is a need to look into the relationship between diversification and profitability. The growing concern on asset quality, particularly for public sector banks in India, also requires the investigation. Contrasting results are available while examining the relationship between diversification and profitability. For example, for Italian banks, diversification was found to be beneficial but for US banks, diversification did not result in general improvement in bank performance (Chiorazzo, Milani & Salvini, 2008). Little research is available covering diversification, strategy, and performance from Indian Banks. The present study is intended to fill the gap in the literature.

2. Literature Review

There is a large body of research on various aspects of diversification involving banks. Various benefits of diversification are economies of scale, better resource allocation and ability to leverage competitive advantage (Bodnar et al., 1997; Stein, 1997). In some cases, regulatory considerations drive diversification (Acharya et al., 2006). For example, the imposition of a capital requirement may require banks to diversify.

By pursuing diversification, bank benefit by proprietary information of firms which has been modeled by Sharpe (1990) and Rajan (1992). Some researchers have argued against diversification because of coordination and allocation problems, (Harris et al., 1982; Meyer et al., 1992). The study by Acharya et al., (2006) outlined diseconomies of diversification by entering into the industry where it faces a high degree of competition or lacks prior lending experience. The downside of diversification can be deterioration of credit quality and reduction in returns. Different regulations in various countries affect the diversification. Diversification debate assumed increased interest with the withdrawal of Glass-Steag all Act. As a result, US commercial banks started diversifying into non-traditional financial services. Researchers have shown an interest in assessing the relationship between diversification and performance. Using an analysis of 98 internationally active banks over the period 1994-2012, it is established that income diversification is positively related to bank profitability (Gambacorta et al., 2014). In the study, income diversification was measured as a ratio of non-interest income to interest income and return of assets was used to measure bank profitability. Similar results were confirmed by studies examining the relationship between income diversification and returns (Chinnpiao et al.,2013). The findings on Bank Holding Companies (BHC) suggest that diversification has no impact on risk reduction.

Motives for the diversification have been identified from various studies. According to Froot and Stein (1998), diversification is a cushion against insolvency risk that reduces the occurrence of costly financial distress. Landskroner et al., (2005) regarded diversification as a means to improve profitability and operational efficiency and allows the bank to improve customer loyalty. For example, by increasing the product range, customers find the plausible reason to associate with same financial institutions be it insurance, mutual fund, and payments, etc. Non-interest income provides increased stability in banking income. According to Acharya et al. (2006) and Lepetit et al. (2008), diversification helps in creating competitive positioning for select market segments. The study by Sanya and Wolfe (2011) concluded that diversification across and within interest income and non-interest income reduce insolvency risk and enhance profitability. It is relevant to look intothe historical development of commercial banking in India. Traditionally, commercial banks offer short term finances to business establishments and developmental financial institutions.

Studies have examined the antecedents of bank performance. Factors was found to such as capital adequacy, asset quality, and liquidity affect the bank performance. Past studies have looked into the role of capital (Pringle, 1975) and the topic has been addressed in Basel accord. The requirement of capital increased after the global financial crisis. There is a general viewpoint that while leading banks from the US were affected by financial crisis, banks from some other countries to some extent remain insulated. The impact of the crisis varied among the countries. The capital buffer with Canadian bank helped to counter the financial crisis (Guidara et al., 2013). Beck et al. (2013) analyzed the role of asset quality using indicators such as maturity matching, loan loss provisioning, and non-performing loans. While investigating asset quality for Indian banks, Swamy (2013) pointed out that asset quality is influenced by industry characteristics, macro-economic conditions, size, and ownership of banks. Bourke (1989) observed a positive relationship between liquid assets and bank profitability. Kosmidou (2008) validated the study using data from Greek banks. Olaganju et al. (2012) found a bi-directional relationship between liquidity and profitability. However, Molyneux and Thornton (1992) observed an inverse relationship between bank profitability and liquidity.

With the reforms in the Indian banking system, the low- cost funds dried up for development financial institutions. Development financial institutions responded to the change, converted it into a commercial bank, and tapped low-cost funds and diversified their asset structures. These banks in addition to core banking activities engaged in Universal banking (Bapat, 2012). Universal banking is involved in financial services comprising deposit taking and lending, trading of financial instruments, foreign exchange, underwriting activities, brokerage, insurance and investment management activities (Calomiris, 1997). Two major advantages associated with Universal banks are economies of scale and scope. Economies of scale allow banks to reduce the average cost of production and economies of scope arise from sharing the cost between different business units. Canals (1997) suggested that

strategic response to heightened competition resulted in diversification into non-bank financial activities. We look into the Indian Experience. For example, State Bank of India (SBI), leading public sector bank, entered into insurance activities through SBI life. After entering into credit card business, ICICI Bank, leading private sector bank, surpassed the business of established players like Citibank. Kotak Mahindra Bank, private sector bank, and undertook extensive cross-selling of products resulting in significant expansion of their total business (Khandelwal, 2006).

Public sector banks entered into bancassurance and mutual fund tie-ups. From a regulatory perspective, with the increase of diverse business, the supervision of universal banks remains a challenge. It is pertinent to look into the recent findings. During the initial years after the global financial crisis, the mean efficiencies, calculated through data envelopment analysis, of public sector banks were higher than that of private sector banks (Bapat, 2012). The study by Ram Mohan (2005) observed that spreads at public sector banks did not decline and profitability showed an improvement, leading to Indian banking system the second most profitable in the world. There is a significant potential of business for Indian banks to diversify when we compare various benchmarks such as insurance premium/GDP, retail credit/GDP to other countries, both advanced and emerging countries. The present study provides significant contribution since it offers the analysis in the recent periods. The study is interesting to look into the developments particularly from the perspective of diversification after the global financial crisis.

3. Conceptual Framework: Hypotheses Development

Relation between Ownership with Bank Diversification and Performance

The study of Japanese banks by Sawada (2013) points out that revenue diversification positively affects bank market value. The motivation of banks to diversify include the need to have profit center, presence in diversified financial markets services, broad-based customer access, and establishing leading market positions in all financial services. Diversification has another advantage- good years in one business offset bad business in another (Ajit, 1997). The study on community banks of US showed that an increased focus on non-interest income is associated with the reduction in risk-adjusted performance (Stiroh, 2004).

While examining relationship among institutional ownership, diversification and risk of publicly traded Bank Holding Companies (BHC), stable ownership is associated with geographic, revenue and non-traditional (asset) diversification and lower risk (Deng et al.,2013). The study by Acharya et al.(2006) pointed out the disadvantage of diversification in terms of reduction of credit quality and returns. The study by Pennathur et al.(2012) concluded that ownership plays an important role in the area of diversification. It was observed that as compared to private banks, public sector banks generate lesser fee income, While comparing mean efficiencies, significant differences were observed between public sector banks and private sector banks and mean efficiency of public sector banks is higher than that of private sector banks for the period between the year 2007-08 to the year 2009-10 (Bapat, 2012). From an Indian perspective, although public sector banks maintain a majority share in core banking business, we find that bancassurance business is dominated by private sector banks. For example, while private sector banks generated fees of Rs. 135.5 billion from bancassurance activities in the year 2012-13, public sector banks generated fees of Rs. 74.7 billion in the year 2012-13. The focus on non-interest income is evident for private sector banks.

Relation between Size with Bank Diversification and Performance

Researchers have shown a keen interest in studying size distribution of Banks (Goddardet al., 2014: Hughes et al., 2001). Studies have examined the relationship between bank size and stock market volatility (Feng & Serlitis, 2010; Haan & Poghosyan, 2011). The findings suggest that bank size related diversification does not result in its unconditional stock market volatility (Chen et al.,2011). Empirical Evidence is obtained showing the strong relationship between bank size, technical efficiency and scale efficiency (Drake & Hall, 2003). Attempts were also made to compare the levels of diversification between bigger and small banks. Wheelock and Wilson (2009) observed the presence of economies of scale in US Banks. The study on BHC indicates that large BHCs are better diversified than smaller BHCs. As a result, large BHCs have used their diversification advantage to operate with greater leverage and to pursue potentially more profitable

lending (Demsetz & Strahan, 1997). The study on Hungarian Banks found large banks are more efficient (Hasan & Marton, 2003). The empirical results related to the study of Syrian Banks observed a positive relationship between Bank Size and Profitability. The study considered dependent variable as return on assets (ROA). Similar results were obtained from studies by Goddard et al., (2004), Kosmidou et al., (2005) and Flamini et al., (2009). Using a panel of Pakistani banks, it is observed that bigger banks are more diversified than small banks. This happened because of greater outreach and size of credit portfolios (Afzal & Mirza, 2012). According to Vander (2002), financial conglomerates in Europe are relatively cost efficient as compared to specialized banks. Findings from Italian Banks indicate that there is a strong relationship between income diversification and return for bigger banks. Since smaller banks have little non-interest income, the importance of non-interest income does not find credible evidence (Chiorazzo et al., 2008).

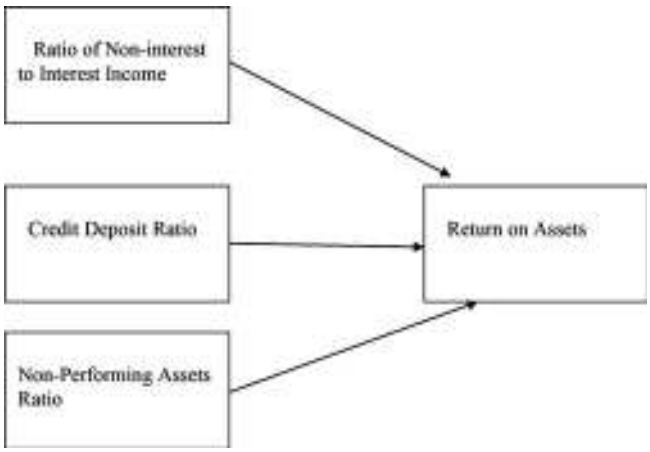
The results on bank size indicate that smaller banks were more involved in the non-interest generating activities, which is due to better specialization and availability of differentiated services (Karray & Chichti, 2013). Contradictory results were obtained by studies from Ben and Goaied (2008) and Sufian and Habibullah (2009). Nguyen et al.,(2012) studied the relationship between market power and revenue diversification and observed a non-linear relationship between market power and revenue diversification. While covering the period 1997-2003, the finding suggests size inefficiency for banks across India and years (Ray, 2007).

Antecedents of Bank Performance

Traces of extensive studies on Bank performance are available from 1980s. There is a belief that market structure of industries has implication on bank performance. Similarly, the economy also has a bearing on bank performance. It is seen when the economy takes a hit, there is an increase in non-performing assets, resulting in depletion in bank profitability. We find contrasting results between bank size and bank profitability. It has been discussed in the previous section. The studies by Athanasoglou et al. (2006) confirmed the drivers of bank profitability as both endogenous and exogenous factors. In the literature review, we find that bank profitability, typically measured by Return on Assets. The study by Ntow and Loryea (2012) studied the relationship among return on assets (ROA), asset quality and liquidity ratio measured through credit-deposit ratio. ROA performance was observed to be worse for older banks in China, (Wu et al., 2007).

The empirical findings suggest that all the bank specific determinant variables have a statistically significant impact on bank profitability. Positive results were obtained examining the relationship between diversification and bank performance upto 30 percent of the diversification ratio (Gambacorta et al.,2014). Rivard and Thomas (1997) suggest that bank profitability is not distorted by high equity multiples and it represents a better measure of the ability of a firm to generate returns on its portfolio of assets. According to the study by Duca and McLaughlin (1990), variations in bank profitability are attributable to variations in credit risk. Miller and Noulas (1997) suggest that when the institutions are exposed to higher risk loans, it results in accumulation of unpaid loans and decrease in profitability.

The model can be presented as follows:



Based on the above, we form the following hypotheses:

1. There is a significant difference between public sector banks and private sector banks in terms of ownership.
2. There is a significant difference between public sector banks and private sector banks in terms of size.
3. The ratio of non-interest income to interest income and credit deposit ratio positively affects return of assets and non-performing assets negatively affects

return of assets. The ratio of non-interest income to interest income is the measure of diversification, the ratio of non-performing assets is the measure of asset quality, and the return of assets was considered as a measure of performance.

4. Methodology

The initial part relates to the assessment of the impact of ownership and size on diversification and performance using a secondary data of public sector and private sector banks from the year 2006-07 to the year 2012-13. Both these bank groups constitute more than 90 percent of the business of scheduled commercial banks. The data was obtained from performance highlights for public sector banks and performance highlights for private sector bank released by Indian Banks Association (IBA). The data is reliable as IBA is a recognized banking body. One of the objectives is to collect, classify and circulate statistical and other information on the structure and working of the banking system. IBA is compiling the data on performance highlights of banks on the basis of different ownership. Two independent sample t test was applied to find out the difference on the basis of ownership and size. It compares the means between the two samples in order to determine whether there is a statistical evidence that population means are different. We assessed the impact of ownership on the various bank performance measures including diversification. Based on the earlier literature, we used the ratio of non- interest income to the interest income as a measure for diversification. Assessment of the impact of size effect on the performance measures was undertaken using two independent sample t-test. Because the concept of path analysis has been recognized as a useful research approach. The application of the approach is traced in sociology (Anderson & Evans, 1974; Lewis-Back, 1974). Path analysis is an extension of regression model where the objective is to test the fit of the correlation matrix against two or more causal models. The analysis includes the calculation of regression weights, observed correlation matrix, and goodness of fit. The interpretations are discussed in the context of structural equation modeling. We observe that Titman and Wessels (1988) introduced the application of structural equation modeling (SEM) in corporate finance which was subsequently applied by Maddala and Nimalendran (1995). The advantage of structure equation modeling is that it allows to consider several dependent variables at a time and controls the measurement errors. We observed that Chang et al., (2009) applied for determining the capital structure. In the later part, using structural equation modeling, antecedents for bank performance, measured through Return on Assets (ROA), was obtained.

5. Results

While relying on secondary panel data of public sector and private sector banks, we obtained data on interest income, non-interest income, return on assets, non-performing assets, ratio of non-interest income to interest income. We conducted two independent sample test for finding the difference between profit per employee, return on assets, non-performing assets, and ratio of other income to interest income.

Ownership and performance

The two sample independent t-test results are obtained in following Table 1.

A significant difference exists for non-performing assets (recent years), the ratio of non-interest income to interest income (4 out of 7 years) and profit per employee (-1 out of 7 years). Following charts represent the trends for various measures for both public sector banks and private sector banks in India.

Size and Performance

We performed two independent sample tests for finding the difference between Profit per Employee, Return on Assets, Non-performing Assets (NPA) and Ratio of Other Income to Interest Income on the basis of size. The size threshold was considered as the bank with a total business size of Rs. 20,000 billion. The threshold was chosen on the basis of expert advice and judgment. While reviewing the literature, we find the lack of consistent approach in distinguishing the banks based on size.

The two sample independent t-test results are obtained in following Table 2.

In our study, small size banks consist of the combination of public sector banks and majorly old generation private sector banks. We find that majority of small size banks continue to remain in the same group for past many years. Bigger size banks consist of few

public sector banks and new generation private sector banks, which are elevated to big size. Significant difference exists on account of profit per employee (2 out of 7 years) and ratio of non-interest income to interest income (2 out of 7 years). Our findings indicate that relationship between bank size and profitability was not pronounced. While comparing on the basis of bank size, significant differences were not observed on account of ratio between non-interest income to interest income for majority years.

Antecedents of Bank Performance

Structural Equation Modeling, also referred as path analysis, is used for assessing interdependencies between a dependent variable and independent variable. It has become a popular tool for various reasons such as analytical flexibility and generality. AMOS 21.0 was deployed as the statistical software package. Structural Equation Modeling has been used for wide applications such as service quality measurement (Kumar and Dash 2013). In our study, our interest was more in assessing the relationship between diversification and performance. For Diversification, we used the measure as the ratio of non- interest income to interest income. For Profitability, we used ROA which is an acceptable measure in a banking context. In addition, we used credit deposit ratio as a measure of liquidity and non-performing assets representing asset quality. AMOS 21.O was deployed, in which return on assets was treated as dependent variable and Diversification, Liquidity and Asset Quality measures as independent variable

The results of structural equation modeling are shown in Table 3.

As seen in the above Table 3, the negative relationship is established between Non-Performing Assets and Return on Assets. Diversification in the recent two years is showing a positive relationship with return on assets.

Seven fit indices which are commonly used in the literature (Chi Square/degrees of freedom, Goodness of Fit (GFI), Adjusted goodness of Fit (AGFI), Non Normed Fit Index (NNFI), Root Mean Square Residual (RMSR), Root Mean Square of Approximation (RMSEA)were employed for model fit. Chi square / degrees of freedom less than 3, goodness of fit index (GFI), non-normed fit index (NNFI), comparative fit index (CFI) greater than 0.9, an adjusted goodness fit index (AGFI) greater than 0.8,root mean square residual (RMSR) less than 0.1, and root mean square of approximation (RMSEA) less than 0.06 are considered indicators of good fit (Bentler and Bonett 1980). Our calculations met with the above requirements.

6. Conclusions

The study is based on responses and data obtained for public sector and private sector banks. Both public sector and private sector banks contribute to more than 90 percent of the business from scheduled commercial banks, which include regional rural banks and foreign banks in addition to public sector and private sector banks. While assessing the bank performance, we find that variations between public sector banks and private sector - banks remained while comparing the key ratios of NPA and ROA. Our study is focused on diversification and it was measured as a ratio of non-interest income to interest income. Independent sample t-test was used for comparing the difference on the basis of ownership patterns. Public

Table 1: Two Sample Independent t-test based on ownership

Parameter	2007	2008	2009	2010	2011	2012	2013
Profit/Employee	0.245**	0.039	0.555	0.200	0.275	0.566	0.115
Returns on Asset	0.661	0.199	0.999	0.725	0.165	0.094	0.002**
Non Performing Assets	0.574	0.659	0.162	0.263	0.009**	0.001**	0.001**
Ratio of Other Income to Interest Income	0.558	0.062*	0.047**	0.023**	0.302	0.133	0.003**

*P < .1 ** P < .05

Total Number of Banks - 46

Public Sector Banks - 26 Private Sector Banks - 20

Table 2: Two Sample T test Based on Size

Parameter	2007	2008	2009	2010	2011	2012	2013
Profit per Employee	0.051*	0.138	0.027**	0.387	0.252	0.129	0.282
Return on Assets	0.177	0.963	0.441	0.328	0.750	0.832	0.628
Non Performing Assets	0.373	0.717	0.932	0.647	0.344	0.393	0.201
Ratio of Other Income to Interest Income	0.454	0.923	0.415	0.185	0.018**	0.086*	0.286

*p < 0.10; **p < .05

sector banks and private sector banks were the scope of the study to assess the ownership differences. While looking at the trends, we find that private sector banks were performing better than public sector banks on all the parameters such as return on Assets, ratio of non-interest income to interest income and profit per employee. The gap in the non-performing Assets ratios between public sector banks and private sector banks widened. Significant differences, among others, were observed in terms of diversification measures when comparing public sector banks with private sector banks for 4 years during the 7 year study period with and private sector banks showing a higher ratio of diversification than public sector banks. Our results are consistent with Pennathur et al.(2012) which find public sector banks generate lesser fee income. Significant difference exists on account of non-interest income to interest income (2 out of 7 years) while comparing in terms of size. While some studies concluded that large banks are efficient and attain economies of scale (Feng & Sterlitis, 2010; Wheelock & Wilson, 1999), opposite results were obtained from the studies (Ben Naceur & Goaied, 2008; Habibullah, 2009). The study by Ray (2007) on Indian banking suggest the widespread size inefficiency across banks and years. In the context of bigger banks, the issue is whether the sheer size hinders the smooth flow of information within the organization and private sector banks.

A negative relationship was observed between non-performing assets and return on assets and positive relationship was observed in the recent two yearsbetween diversification and Return on Assets (ROA). Since the existing sources of income from traditional interest route is showing a downward trend, banks are showing a shift towards generating revenue from non- interest sources in the recent years. Critics are pointing out the higher levels of income from interest sources. With the evolving technologies and facilitative regulations, banks in India provide opportunities to generate income from payment business and fee-based avenues such as commission from sales of mutual fund and insurance products. Future research can assess the performance among and between new generation private sector banks, old generation private sector banks, public sector banks, regional rural banks, and foreign banks.

7. Managerial Implications

This study has important implications for managers and scholars. Banks in India followed the prescription of privatization as a fallout of financial sector reforms in1990s. The impact of privatization of banks was mixed. By 2008, banks were affected by the global financial crisis. However, Indian Banks remain insulated from financial crisis. During the period, the performance of public sector banks was comparable

Table 3: Path coefficient with dependent variable as Return on Assets (ROA)

Parameter	2007	2008	2009	2010	2011	2012	2013
Ratio of Non Interest Income to Interest Income	0.882	-0.454	-0.221	1.692	1.298	3.534*	2.396*
Credit Deposit Ratio	0.169	0.202	0.800	0.350	0.235	-0.371	0.946
NPA	-0.428**	-0.403**	-0.470**	-0.469**	-0.455**	-.483**	-.0.405**

*p < 0.10; **p < .05

with private sector banks. Post global financial crisis has a requirement for banks to keep a higher level of capital. The implication is that banks need to generate a higher level of profits from the same assets. By the year 2012-13, the performance of private sector showed a marked improvement which can be verified from the figures of return on assets, non-performing assets, profit per employee. There was a significant increase in non- performing assets of public sector banks and there is a realization that effective bad debt management is crucial to maintaining profitability in such a scenario. It was in October 2011 that savings accounts underwent deregulation for amounts above Rs. 0.1 million. Few Private sector offered higher rates for saving bank customers. In future, it is likely to have implications for other banks. As a result, there will be a pressure on these banks to reduce their interest rates.

Bank diversification is the provision of more products and services by banks. Regulations have proved to be double-edged sword. On the one hand, many non-banking players are keen to enter into the banking sector. The influence of technology is transforming the banking industry (Bapat & Bihari, 2015) and retail banking is witnessing a transformation where there is a greater role of electronic banking (Bapat, 2015). Telecom companies are offering payment based services through mobile phones. The majority of telecom brands are offering mobile payment and mobile wallet services to their customers. Through such services, it allows the customer to make payment to other customers, undertake payment of utility services and allow customer for mobile shopping services. In the latest banking license exercise, 26 Organizations evinced interest to enter into the banking sector and applied for the banking license. Two organizations, namely Bandhan and IDFC, were provided with banking licenses. Recently, 11 payment banks license were issued. This clearly shows that there is a greater interest among other non-banking players to enter into banking service. On the other hand, with the depletion of core banking revenues, banks are keen to generate revenue from other sources in the backdrop of a pressure on its existing banking revenue generating activities. This is reflected in a fall of net interest margin for scheduled commercial banks which showed a decrease from 3.63 percent to 3.36 percent.

Although Indian Banks to some extent remain insulated from global financial crisis, the growth of Indian Banks moderated. There was a consistent drop in the reduction in Net Interest Margins (NIM). As a result, banks need to find avenues from non-interest sources which are income diversification. One of the distinct features in the year 2012-13 is there is a marked improvement in performance of private sector banks. The findings indicate that there is a significant difference between public sector banks and private sector banks on various measures including diversification measures. On account of bank size, evidence was observed for select years.

Very little research exists for Indian Banking Industry which has witnessed significant growth rates, resulting in an impressive performance in the last decade. Bank deposits for Indian public sector banks grew by 18 percent and advances increased by 20 percent, resulting in an overall business growth of 18.7percent. This happened despite the marginal increase of 5percent in bank offices and 1percent in bank employees (Bapat, 2013). The next decade for Indian Banking is crucial as it will play a significant role in the backdrop of new customer additions, changing customer requirements and rapid technological developments.

References

Afzal, A., & Mirza, N. (2012). Size, diversification and risk: Preliminary evidence from commercial banks in Pakistan. *Pakistan Journal of Commerce & Social Sciences*, 6(2), 282-296

Acharya, V, Hasan, J., & Sanders, A. (2006). Should banks be diversified? Evidence from individual bank loan portfolios. *Journal of Business,* 79, 1355-1412.

Ajit, D. (1997). Para banking in India: Some issues. *Economic and Political Weekly,* 32 (42), 2677-2681.

Anderson, James & Evans Francis (1974). Causal models in educational re- search: Recursive models. *American Educational Research Journal,* 11 (Winter), 29-39.

Armstrong, J. Scott & Fred Collopy (1996). Competitor orientation: Effects of objectives and information on managerial decisions and profitability. *Journal of Marketing Research,* 33 (May), 188-99.

Athanasoglou P., Delis M. and C. Staikouras (2006). Determinants of banking profitability in the south eastern European region. Bank of Greece Working Paper 06/ 47.

Bapat D (2012). Efficiency for Indian public sector and private sector banks: Assessment of impact of global financial crisis. *International Journal of Business Performance Management,* 13 (3 /4), 330-40.

Bapat D. (2013). Growth, profitability and productivity in public sector banks: An assessment of their interrelationship. *The IUP Journal of Bank Management,* 12(3), 50-57.

Bapat D. & Bihari S.C. (2015). The electronic banking revolution in India, *Journal of Internet Banking and Commerce,* 20 (No. 2), 1-5.

Bapat (2015). Union experience- towards excellence in retail banking. Decision, 42 (3), 335-45.

Beck, T., Demirgüç-Kunt, A., & Merrouche, Q. (2013) Islamic vs. conventional banking: Business model, efficiency and stability. *Journal of Banking & Finance,* 37 (2), 433-447.

Ben Naceur, S., & Goaied, M. (2008). The determinants of commercial bank interest margin and profitability: Evidence from Tunisia. *Frontiers in Finance and Economics,* 5(1), 106-130.

Bentler, P.M.& Bonett, D.G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. Psychological Bulletin, 88(3), 558-606

Bodnar, G.M., Tang, C.& Weintrop, J. (1999)Both sides of corporate diversification: The value impacts of geographic and industrial diversification. Unpublished Working Paper (John Hopkins University, Washington and Baruch College. New York, USA).

Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking & Finance,* 13(1), 65-79

Calomiris, J. (1997). Universal banking and financing of industrial development. Policy Research Working Paper, 1533, World Bank, US, November.

Canals, J. (1997). Universal banking: International comparisons and theoritical perspective, Oxford University Press, April.

Chang, C., Lee, A.C.,& Lee, C. F. (2009). Determinants of capital structure choice: A structural equation modeling approach. *The Quarterly Review of Economics and Finance,* 49(2), 197-213.

Chen T. Y. (1999). Critical success factors for various strategies in the banking Industry. *International Journal of Bank Marketing,* 17(2), 83-92.

Chiorazzo, V., Milani, C., & Salvini, F. (2008). Income diversification and bank performance: Evidence from Italian banks. *Journal Of Financial Services Research,* 33(3), 181-203

Chinpiao Liu, Reichert, A.& Dieter, G. (2013). Diversification channels and bank holding company performance. *Journal of Accounting and Finance,* 13(2), 109-124.

Demsetz, R. S., & Strahan, P. E. (1997). Diversification, size, and risk at bank holding companies. *Journal of Money, Credit, and Banking,* 29(3), 300-313.

Deng, S., Elyasiani, E., & Jia, J. (2013). Institutional ownership, diversification, and riskiness of bank holding companies. *Financial Review,* 48(3), 385-415.

Drake, L.& Hall, M.J.B. (2003). Efficiency in Japanese banking: An empirical analysis. *Journal of Banking and Finance,* 27(5), 891-917.

Duca, J.& McLaughlin, M. (1990). Developments affecting the profitability of commercial banks. *Federal Reserve Bulletin,* 76(7), 477-499.

Feng, G. & Serlitis, A (2010). Efficiency, technical change and returns to scale in large U.S. banks: Panel data evidence from an output distance function satisfying theoretical regularity. *Journal of Banking and Finance,* 34 (1), 127-138.

Flamini, V., McDonald, C., & Schumacher, L. (2009). The determinants of commercial bank profitability in Sub-Sahran Africa.Working Paper, WP/09/15. International Monetary Fund.

Froot, K. and Stein, J. (1998). Risk management, capital budgeting and capital structure policy for financial institutions: An integrated approach. *Journal of Financial Economics,* 47(1), 55-82.

Gambacorta, L., Scatigna, M., & Yang, J. (2014). Diversification and bank profitability: A nonlinear approach. *Applied Economics Letters,* 21(6), 438.

Ghosh, S. (2011). Diversification and firm value: Evidence from Indian banks. *South Asian Journal of Management,* 18(3), 7-25.

Goddard, J., Liu, H., Mckillop, D., & Wilson, J. S. (2014). The size distribution of US banks and credit unions. International *Journal of the Economics Of Business,* 21(1), 139-156.

Guidara, A., Lai, V. S., Soumaré, I., & Tchana, F. T. (2013). Banks' capital buffer, risk and performance in the Canadian banking system: Impact of business cycles and regulatory changes. *Journal of Banking & Finance,* 37(9), 3373-3387.

Harris, M. Kriebel, C. H. & Raviv, R. (1982). Asymmetric information, incentives and intra-firm resource allocation. *Management Science,* 28(6), 604-620.

Hasan, I. & Marton, K. (2003). Development and efficiency of the banking sector in a transitional economy: Hungarian experience. *Journal of Banking and Finance.* 27(12), 2249- 2271.

Hayden, E., Porath, D., & Westernhagen, N. V. (2007). Does diversification improve the performance of German banks? Evidence from individual bank loan portfolios. *Journal of Financial Services Research,* 32(3), 123-140.

Hughes, J.P., Mester, L.J and Moon C.G. (2001). Are scale economies in banking elusive or illusive? Evidence obtained by incorporating capital structure and risk taking into models of bank production. *Journal of Banking and Finance,* 25(12), 2169-2208.

Karray, S. C., & Chichti, J. E. (2013). Bank size and efficiency in developing countries: Intermediation approach versus value added approach and impact of non-traditional activities. *Asian Economic and Financial Review,* 3(5),

593.

Kosmidou, K. & Pasiouras, F. (2005). The determinants of profits and margins in the Greek commercial banking industry: Evidence from the period 1990-2002. Working Paper (Financial Engineering Laboratory, Department of Production Engineering and Management, Technical University of Crete).

Khandelwal, A. K. (2006). Universal banking: Solution for India's financial challenges. *Economic and Political Weekly,* 41(11), 969-974.

Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance,* 34(3), 146-159.

Kumar, A., & Dash, M. K. (2013). Constructing a measurement in service quality for Indian banks: Structural equation modeling approach. *Journal of Internet Banking and Commerce,* 18(1), 1-13.

Landskroner, Y., Ruthenberg, D., & Zaken, D. (2005). Diversification and performance in banking:The Israeli case. *Journal of Financial Services Research,* 27(1), 27-49

Lepetit, L. Nys, E, Rous, P. and Tarazi A. (2008). Bank income structure and risk: An empirical analysis of European Banks. *Journal of Bank Finance,* 32 (8), 1452- 67.

Lewis-Beck, Michael S. (1974). Determining the importance of an independent variable: A path analytic solution. *Social Science Research,* 3, 95-107.

Meyer, M., Milgrom, P., & Roberts, J. (1992), Organizational Prospects, Influence Costs and Ownership Changes. *Journal of Economics and Management Strategy,* 1(1), 9-35.

Miller, S. M. & Noulas, A. (1997). Portfolio mix and large bank profitability in the USA. *Applied Economics,* 29(4), 505-512.

Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking & Finance,* 16(6), 1173-1178.

Nguyen, M., Skully, M., & Perera, S. (2012), Bank market power and revenue diversification: Evidence from selected ASEAN countries. *Journal of Asian Economics, 23(6),* 688-700.

Ntow, G. M., & Laryea, A. E. (2012). A financial performance comparison of foreign vs local banks in Ghana. *International Journal of Business and Social Science,* 3(21), 82-87.

Olagunju, A., David, A. O., & Samuel, O. O. (2012). Liquidity management and commercial banks' profitability in Nigeria. *Research Journal of Finance and Accounting,* 2(7-8), 24-38.

Pennathur, A. K., Subrahmanyam, V., & Vishwasrao, S. (2012). Income diversification and risk: Does ownership matter? An empirical examination of Indian banks. *Journal of Banking & Finance, 36(8),* 2203-2215.

Pringle, J. J. (1975). Bank capital and the performance of banks as financial intermediaries. *Journal of Money, Credit & Banking (Ohio State University Press),* 7(4), 545-550.

Rajan, R (1992). Insiders and outsiders: The choice between relationship and arms length debt. *Journal of Finance,* 47 (4), 1367-1400.

Ram Mohan, T. T. (2005). Bank consolidation: Issues and evidence. *Economic and Political Weekly,* 40(12), 1151-1161.

Ray Subash C (2007). Are some banks too large? An examination of size efficiency in Indian banking. *Journal of Productivity Analysis,* 27(1), 41-56.

Rivard, R.J. & Thomos, C.R. (1997). The effect of interstate banking on large bank holding company profitability and wamy, Swamy, V. (2013). Determinants of bank asset assessment. Munich Personal RePEc Archive, MPRA Paper No. 47513.

Sanjeev, G. M. (2006). Does banks' size matter in India? *Journal of Services Research,* 6(2), 135-144.

Sanya, S., & Wolfe, S. (2011). Can banks in emerging economies benefit from revenue diversification? *Journal of Financial Services Research,* 40(1-2), 79-101.

Sawada, Michiru (2013). How does the stock market value bank diversification? Empirical evidence from Japanese banks. *Pacific Basin Finance Journal,* 23(3), 40- 61.

Sharpe, S. (1990). Asymmetric information, bank lending, and implicit contracts: A stylized model of customer relationships. *Journal of Finance,* 45(4),1069-87.

Sufian, F., & Habibullah, M. S. (2009). Bank specifc and macroeconomic determinants of bank profitability: Empirical evidence from the China banking sector. *Frontiers of Economics in China,* 4(2), 274-291.

Stein, J. C. (2002). Information Production and Capital Allocation: Decentralized versur Hierachical Firms. *Journal of Finance,* 57(5), 1891-1921.

Tao, X. (2013). Can ownership diversification enhance banks' efficiency? An analysis based on super efficiency and to bit regression on the Chinese listed commercial banks. *Engineering Economics,* 24(1), 36-43.

Vander Vennet R (2002). Cost and profit efficiency of financial conglomerates and universal banks in Europe, *Journal of Money, Credit and Banking,* 34(1), 254-282.

Wheelock, D.C. & P.W. Wilson, (1999). Technical progress, inefficiency and productivity change in U.S. Banking: 1984-1993. *Journal of Money, Credit and Banking,* 31, 212-234.

Wongsansukcharoen, J., Trimetsoontorn, J., & Fongsuwan, W. (2013). A structural equation model development of social customer relationship management, and business strategies effecting to banking performance effectiveness. *Journal of American Academy of Business, Cambridge,* 19(1), 274-280.

Wu, H., Chen, C., & Fang-Ying, S. (2007). The impact of financial development and bank characteristics on the operational performance of commercial banks in the Chinese transitional economy. *Journal of Economic Studies,* 34(5), 401.

Dhananjay is an Assistant Professor at the Indian Institute of Management, Raipur, India. He has previously worked with National Institute of Bank Management (NIBM), GCMMF (AMUL) and Crompton Greaves. He holds a Ph. D. in Marketing from Sardar Patel University, Vallabh Vidyanagar, Gujarat and conducts executive training programs for national as well as international participants in the area of bank marketing. He has published articles in reputed journals such as Decision, Journal of Strategy and Management, International Journal of Services Sciences, Global Business Review, Ivey Case Study, Emerald Emerging Market Case Studies, Vision-The Journal of Business Perspective, South Asian Journal of Management, IUP Journal of Bank Management, International Journal of Business Performance Management, Bancon Proceedings, ICFAI Journal of Brand Management and Indian Banker. He has published books "Brand Extensions in Indian Context" and "Marketing for Financial Services and has presented research papers and attended conferences in India, Philippines, and USA. (Email:-dhananjay1304@gmail.com)

Mahim Sagar is faculty at IIT Delhi in the area of Management. Sagar is also a member and the coordinator of the Policy Group in Bharti School of Telecommunication Technology & Management. His work has been published in various reputed Journals. (Email:-mahim@dms.iitd.ac.in)