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AN EVALUATION OF REVENUE DIVERSIFICATION AND ITS IMPACT ON PROFITABILITY AND EFFICIENCY OF PUBLIC SECTOR BANKS IN INDIA

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Abstract

The purpose of this paper is to trace the pattern of revenue generation from non fund activities of selected five public sector banks in India from 2005-06 to 2015-16. Besides, its impact on bank's profitability and efficiency is also examined. Our analysis has clearly revealed that there is substantial variation in the share of non-fund income in net income of banks overtime which is on account of both domestic and global factors. The impact of these variations in the share of non-fund income is not in accordance to our hypothesis. Rather, both have deteriorated over time as return on assets (ROA) has declined while cost to income has increased.

Keywords: Revenue Diversification, Profitability, Efficiency.

Introduction

The thrust towards enhancement of profitability of public sector banks with the recommendation of Narasimham Committee coupled with the diffusion of Information technology enabled services in the sphere of financial sector has stimulated the banking sector to diversify their revenue generation activities from fund based operations to non fund business activities. Almost all commercial banks sooner or later stepped into various forms of non- fund business functions like establishment of insurance marketing wing, bank assurance services (both life insurance and general insurance services), marketing of mutual fund activities, money transfer transactions in collaboration with Western Union Money Transfer, services of government tax collection, depository participant services, corporate sub agent of M/s. Weizmann Forex Limited, healthcare services, Indian Overseas bank visa international credit card services, sale of gold coins, association of Punjab national bank with M/s SMC Global Securities Limited and M/s Networth Stock Broking Limited offered a unique service of ''3 in 1" account (savings account + demat account + trading account), setting up of specialized recovery branches for asset management, gold coin business, Punjab national bank also owned 100% merchant banking subsidiary i.e. Punjab national bank interest securities limited, etc. Considering the expansion of bank's business into various forms of non fund business activities, the purpose of this paper is to trace the pattern of revenue generation from non fund activities as well as income generation from different components of the non fund business operations. Besides, its impact on bank's profitability and efficiency is also examined.

Review of Literature

There are many studies in the past that have analyzed the pattern of change in income structure of the commercial banks over time, as well as, the effects of diversification of banks activities on their profitability in India and abroad. In this context, Gallo, Aplado and Kolari (1996) scrutinized the bank holding companies of United States to know the impact of mutual fund activities on banks profitability during the period 1987 to 1994. Their findings have showed that mutual fund activities have enhanced banks profitability during the sample period of study.

Another study based on the quarterly data of the financial holding companies of United States by Stiroh and Rumble (2006) for the period 1997 to 2002 have investigated the benefits of the income diversification activities of these companies. The results of their analysis have revealed that greater focus towards non-interest income activities have imparted volatility in banks income that has more than neutralized the benefits of diversification, which in fact represent the dark side of the diversification process.

Baele, Jonghe and Vennet (2007) have examined long term performance of seventeen diversified European banks using panel data for the period 1989 to 2004. The outcome of their analysis have revealed a positive relationship between banks performance as measured by their franchise value and share of non-interest income in total income of banks.

In another study on European banks, Mercieca, Schaeck and Wolfe (2007) have assessed the performance of 755 European banks in the context of diversification of banks activities during the period 1997 to 2003. They found an inverse relationship between banks performance and non-interest income.

Elsas, Hackethal and Holzhauser (2010) have examined the mechanism by which revenue diversification affects banks value using panel data collected from nine developed countries for the period 1996 to 2008. Their investigation has revealed that diversification of banks activities has raised its profitability which in turn has enhanced its market value, irrespective of the fact, whether diversification activities has been pursued on its own (organic growth), or through mergers and acquisitions.

Jacob Amediku (2012), in their study on Uni bank, Cal bank and Zenith bank in Ghana analysed that the fee component of the non- interest income has a positive impact on the performance of the banks. Till 2008 all the three banks have shown an increasing trend in return on asset (ROA). In 2009 Uni bank and Cal bank return on asset declined while that of zenith bank increased. In 2010 return on asset of Uni bank and Cal bank increased while that of zenith bank declined over the previous years.

Jin-Lung Peng, Vivian Jeng, Jennifer L. Wang (2015) in their study on banking industry in Taiwan from 2004 to 2012 analysed that bancassurance business has tended to accrue larger risk- adjusted returns to the banks.

Vincenzo Chiorazzo, Carlo Milani, Francesca Salvini (2008) in their study on income diversification in Italian banks concluded that diversification of income increases risk adjusted returns. It also analysed that the gains resulting from increase in non-interest income of the banks starts reducing as the banks gets larger.

Andreas Dietrich, Gabrielle Wanzanried (2011) in their study on 372 commercial banks of switzerland from 1999-2009 and especially analysed the impact on profitability of banks during the global financial crisis period (2007 to 2009). Their findings have shown that profitability of banks deteriorated during the crisis years.

Anita K. Pennathur, Vijaya Subrahmanyam, Sharmila Vishwasrao (August 2012) in their study on Indian commercial banks for the period 2001-2009 investigated the impact of income diversification on profitability and insolvency of banks. They concluded that ownership does matter in the quest of non-interest income. In comparison to private sector banks and foreign banks, public sector banks earn less fee income. Fee based income of the banks reduces risk of the banks.

De, Bikram (2012) in their study of ownership effects on bank performance analyzed that ownership on banks profitability and efficiency of public and private sector banks. Their findings suggest that ownership effect does not effect banks. But the net interest margin and operating cost ratio of public sector banks have increased.

Objectives, Scope and Methodology

The objective of this paper is to trace the pattern of revenue generation from non fund activities as well as income generation from different components of the non fund business operations. Besides, its impact on bank's profitability and efficiency is also examined.

The scope of our study is confined to five public sector banks namely State Bank of India (SBI), Punjab National Bank (PNB), Indian Overseas Bank (IOB), United Commercial Bank (UCO) and Union Bank of India (UBI). The period of study is from 2005-06 to 2015-16.

The ratio of non-interest income to net operating income and the ratio of net interest income to net operating income over time would enable one to comprehend the extent of change in bank's revenue diversification activities. Moreover, the component-wise analysis of the non fund based income of the bank would facilitate in explaining the contribution of each component in the non-fund income of the bank. The strength and weakness of the share of each component over time would throw light on the incidence of revenue diversification by the bank, which ultimately has a bearing on bank's profitability and efficiency. These two parameters are analyzed with the help of the following measures:

Bank's profitability is measured by the return on assets (ROA) which is the ratio of net income to total assets of banks. In percentage terms it is expressed as:

$$ROA = \frac{Net\ Income}{Total\ Assets} * 100$$

Bank's efficiency is measured by the cost to income ratio (CIR) which is expressed as:

$$CIR = \frac{Operating\ expenses}{Net\ Income} * 100$$

Hypotheses

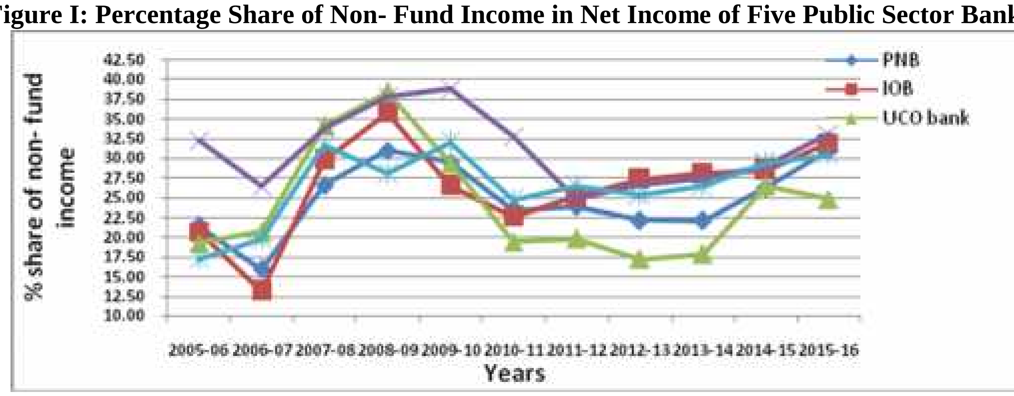
Diversification of bank's income from fund based to non-fund based activities has implications on its profitability and efficiency either directly or indirectly through different channels which have enabled us to formulate the following hypotheses:

1. As diversification of bank's income from fund based to non-fund based activities take place, the share of non-interest income is expected to rise or fall because of the implied volatility in the capital market. This may either raise or depress net profit of the bank. Thus we can hypothesize that:
H_0: There is hardly any impact of the percentage share of non-interest income on the return on average assets (ROA), **i.e. H_0: $b_i = 0$,** where, b_i is the regression coefficient associated with the explanatory variable return on average assets (ROA).
H_1: There is a positive impact of the percentage share of non-interest income on the return on average assets (ROA), **i.e. H_1: $b_i > 0$.**

2. As diversification of bank's income from fund based to non-fund based activities ensues, it is presumed that the share of non-interest income either improves or deteriorate, which may result in the operating income of bank to increase or decrease. This would either promote or lower efficiency in the banking industry i.e. cost to income ratio accordingly would fall or rise. We may therefore hypothesize that:
H_0: There is hardly any impact of the percentage share of non-interest income on the cost to income ratio, which is a parameter signifying efficiency in the banking industry, **i.e. H_0: $b_i = 0$,** where, b_i is the regression coefficient associated with the explanatory variable cost to income ratio
H_1: There is a negative impact of the percentage share of non-interest income on the cost to income ratio, **i.e. H_1: $b_i > 0$.**
The above hypotheses are substantiated with the help of graphical and panel data regression analysis.

Analysis
The initial impact of diversification of income has been favourable in enhancing the share of non fund income for all selected public sector banks which showed a tendency to increase upto around 2009-10 (refer figure-I).

Figure I: Percentage Share of Non- Fund Income in Net Income of Five Public Sector Banks



However thereafter there has been substantial decline in the share of non- fund income of these public sector banks up to 2011-12 which is specially because of the significant decline in one of the components of the non-fund income mainly treasury income as well as slow down in the core and recovery components of the non- interest income of the banks (refer table -I). This is on account of both global and domestic reasons.

Table I: Percentage share of Non- Fund Income and Its Components in Net Income of Five Public Sector Banks in India

Years	PNB				IOB				UCO				SBI				Union Bank			
	% of core[1]	% of TI[2]	% of rec.[3]	% of NII[4]	% of core	% of TI	% of rec.	% of NII	% of core	% of TI	% of rec.	% of NII	% of core	% of TI	% of rec.	% of NII	% of core	% of TI	% of rec.	% of NII
2005-06	16.83	3.55	1.06	21.44	17.91	1.80	1.04	20.74	17.06	-0.31	2.53	19.28	25.19	2.57	4.52	32.29	10.7	5.37	1.15	17.21
2006-07	19.68	-4.81	1.02	15.90	19.27	-8.07	1.93	13.13	20.17	-2.53	3.04	20.68	22.02	4.53	4.45	26.43	11.13	5.72	2.9	19.76

2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
19.56	20.82	20.23	18.18	19.00	17.39	16.95	17.16	17.37
5.87	6.71	6.64	1.94	1.97	2.55	2.65	4.56	3.27
1.10	3.44	2.61	3.31	2.89	2.20	2.49	4.53	10.35
26.53	30.97	29.49	23.43	23.86	22.14	22.09	26.24	30.99
21.34	21.90	19.21	17.98	19.47	19.38	19.15	20.13	19.03
5.51	11.64	5.54	1.03	2.03	3.36	4.96	3.76	5.75
2.90	2.20	1.76	3.53	3.60	4.57	3.90	4.53	7.18
29.74	35.74	26.51	22.55	25.10	27.31	28.00	28.42	31.96
21.95	23.63	19.76	15.70	15.35	12.52	9.92	10.85	11.76
9.29	11.78	7.39	1.93	4.03	2.57	3.98	13.14	10.97
2.92	2.93	2.22	1.76	0.47	2.11	4.00	2.50	2.03
34.16	38.33	29.36	19.39	19.84	17.20	17.90	26.49	24.77
23.77	24	26.59	25.79	22.34	20.17	19.22	18.95	23.85
6.78	11.16	9.59	4.93	0.89	4.62	5.85	7.16	5.9
3.26	2.64	2.56	2	1.67	1.76	2.27	2.99	3.36
33.81	37.81	38.74	32.73	24.9	26.57	27.35	29.1	33.11
15.17	15.44	14.53	13.78	15.06	14.08	15.28	15.64	15.73
12.22	9.76	11.84	8.35	7.6	7.98	8.62	11.15	7.67
4.24	2.79	2.97	2.57	3.83	3.21	2.48	2.65	7.00
31.63	28	32	24.7	26.49	25.28	26.37	29.43	30.4

Source: Annual reports of banks from 2005-06 to 2015-16

Notes: [1] core implies core component of non-interest income, [2] treasury income indicates treasury income component of non- interest income, [3] recovery means recovery component of non- fund income from written- off accounts, [4] NII implies non-interest income in net income of the banks.

At the global level recession in many of the developed countries after the global financial crisis in 2007-08 and the high inflationary expectations in the emerging market economies after 2009-10 forced central bank to take preventive measures in their respective countries. In India the inflation rate in 2010-11 was around 9% and to ease the inflationary pressures Reserve Bank of India followed a tight monetary policy by enhancing the repo rate from 4.75% to 7.25% and increasing cash reserve ratio from 5% to 6%. These measures reduced the price of the government securities and other bonds which caused treasury income of the banks through sale of investment to dip (refer table –I). Moreover the measures undertaken by the RBI also adversely impacted the economic growth of the country. The sluggish growth of business activities in the economy caused stressed assets of the banks to increase. The problem of stressed assets further aggravated as banks tried to accommodate sick industrial units (specially MSME) through credit guarantee scheme which permit banks to provide collateral free/ guarantee free loans and also concessional lending to them to meet their working capital requirements. These policy measures coupled with moderation in economic growth ultimately caused gross non-performing assets to increase. Thus increasing non-performing assets and poor recovery from written- off accounts (refer table-I) adversely affected the return on assets (ROA) (figure II). Our observation find support from figure II which shows a declining trend of ROA especially after 2009-10, as well as, the estimated regression equation between return on assets (ROA) as dependent variable and gross non- performing assets and percentage share of non- fund income as independent variables.

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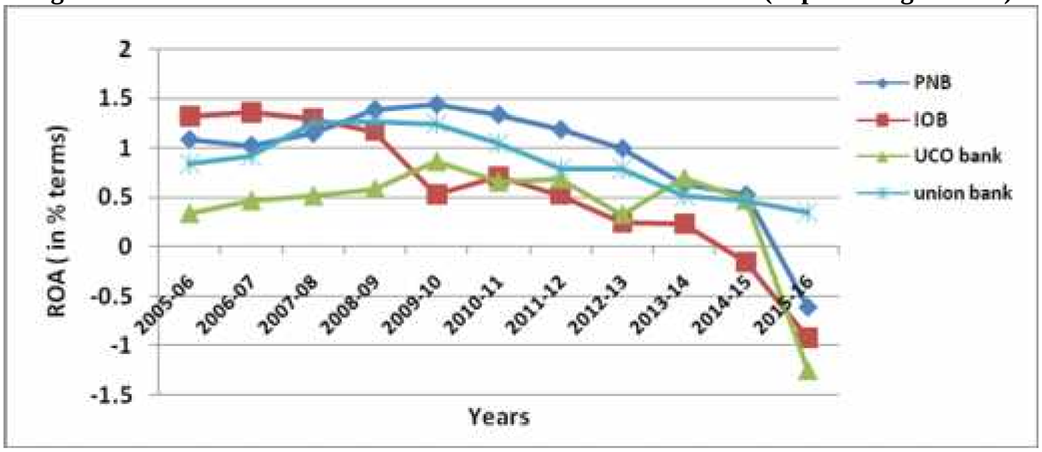
Figure II: Return on Assets of Five Public Sector Banks in India (in percentage terms)



The results of the estimated regression equation is as follows:

Table II: Estimates of the Intercept Term and Regression Coefficient between Roa as Dependent Variable and Non-Fund Income (Nfi) As Well As Non-Performing Assets (Npa) Of Five Public Sector Banks

Name of Bank	Intercept Terms	Regression coefficient associated with NFI	Regression coefficient associated with NPA	R^2	F- Ratio
PNB	1.42	-0.0106 (-1.02)	-.000019 (-5.25)	35.92%	14.57
IOB	0.98				
UCO	0.77				
SBI	1.84				
Union Bank	1.27				

Figures in parenthesis indicate t-values

The values of R^2 and F statistic clearly indicate that the overall regression model significantly explains variation in return on assets. Further fixed effects regression equation based on panel data for the period 2005-06 to 2015-16 does not support our hypothesis because despite increase in share of non- fund income during the last couple of years of the analysis yet the return on assets during this year declined sharply. An important fact that has contributed to decline in return on assets is the liberal policy pursued by the banking sector towards the industrial sector since 2010-11 by providing them unsecured loans (collateral/ guarantee free) and concessional lending to the industrial sector so as to revive the business of the medium small and icro enterprises despite the fact that many of these industrial units were sick. This contributed in enhancing non-performing assets of the banks which had a considerable negative impact in substantially lowering the return on assets as is evident by the negative and significant coefficient associated with the variable of non- performing assets (refer regression equation and figure- II).

Another important parameter with which banks are concerned is its efficiency which is defined as ratio of operating expenses to net operating income. The increase in the share of non- fund income is expected to lower cost to income ratio and therefore we have hypothesized negative relationship between share of non- fund income and cost to income ratio which signify efficiency of banks. However, the estimated regression equation between cost to income as dependent variable and non-fund income as independent variable is as follows:

Table III: Estimates of the Intercept Term and Regression Coefficient between Cost to Income Ratio (Cir) As Dependent Variable and Non-Fund Income (Nfi) Of Five Public Sector Banks

Name of Bank	Intercept Terms	Regression coefficient associated with NFI	R^2	F- Ratio
PNB	38.41	0.24 (1.69)	5.03%	2.86
IOB	43.44			
UCO	41.78			
SBI	42.82			
Union Bank	39.31			

Figures in parenthesis indicate t-values

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The value of the coefficient associated with the non-fund income is positive which contradict our hypothesis. This is especially because of the fact that the operating expenses of the banks since 2011-12 has increased considerably due to the expenditure pertaining to the provision and payment to employees on account of enhancement in the salary of bank employees since 2011-12 which constitute a little over 50% of the total operating expenses of the banks, despite the fact that the share of non-fund income of the banks also increased during this period but the increase has not been commensurate to the operating expenses of the banks. In a nutshell analysis of five public sector commercial banks over a period 2005-06 to 2015-16 has clearly revealed that there is substantial variation in the share of non-fund income in net income of banks which is on account of both domestic and global factors. The impact of these variations in the share of non-fund income is not in accordance to our hypothesis. Rather both have deteriorated over time as return on assets (ROA) has declined while cost to income has increased.

Conclusions and Policy Implications

It is thus evident from the analysis that the initial impact of the income diversification activities of the banks has been favourable as share of non-fund income in net income of the banks increased until and around 2009-10 but thereafter it diminished because of recession in most of the developed countries and policies pursued by central bank to curb inflationary pressures in India which also caused sacrifice in economic growth. The moderation in economic growth weakened the performance of industrial sector and banks policy to accommodate many of the sick industrial units through unsecured loans and concessional lending caused non- performing assets to increase and lack of sufficient efforts to enhance recovery from written- off accounts has been an important barrier in adversely impacting the share of non- fund income to improve considerably. All these factors contributed in reducing the profitability of public sector banks as the return on assets declined. Further, the enhancement in provision and payment to employees since 2011-12, also deteriorated the efficiency of banks as the value of the parameter namely cost income ratio signifying the efficiency of banks enhanced since 2011-12. Since all the five banks considered in the analysis are of public sector, therefore it is mandatory for the government to augment their capital base through recapitalization of banks. Policy to revive sick industrial units especially of the medium, small and micro enterprises by providing them with unsecured loans and commercial lending should be scrapped-off, because it has substantially enhanced banks non- performing assets. Moreover, recovery from written- off accounts require considerable improvement through time bound and target approach. For improving the efficiency, bank management must look towards greater income generating avenues.

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