INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT

IJRCM

IJRCM

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

Indexed & Listed at:

Ulrich's Periodicals Directory ©, ProQuest, U.S.A., EBSCO Publishing, U.S.A., Cabell's Directories of Publishing Opportunities, U.S.A.,

Open J-Gage, India [link of the same is duly available at Inflibnet of University Grants Commission (U.G.C.)],

Index Copernicus Publishers Panel, Poland with IC Value of 5.09 & number of libraries all around the world.

Circulated all over the world & Google has verified that scholars of more than 2401 Cities in 155 countries/territories are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

http://ijrcm.org.in/

CONTENTS

CHIEF PATRON

PROF. K. K. AGGARWAL
Chancellor, Lingaya's University, Delhi
Founder Vice-Chancellor, GuruGobindSinghIndraprasthaUniversity, Delhi
Ex. Pro Vice-Chancellor, GuruJambheshwarUniversity, Hisar

FOUNDER PATRON

LATE SH. RAM BHAJAN AGGARWAL
Former State Minister for Home & Tourism, Government of Haryana
Former Vice-President, Dadri Education Society, Charkhi Dadri
Former President, Chinar Syntex Ltd. (Textile Mills), Bhiwani

CO-ORDINATOR

DR. BHAVET
Faculty, Shree Ram Institute of Business & Management, Urjani

ADVISORS

DR. PRIYA RANJAN TRIVEDI
Chancellor, The Global Open University, Nagaland
PROF. M. S. SENAM RAJU
Director A. C. D., School of Management Studies, I.G.N.O.U., New Delhi
PROF. M. N. SHARMA
Chairman, M.B.A., HaryanaCollege of Technology & Management, Kaithal
PROF. S. L. MAHANDRU
Principal (Retd.), MaharajaAgrasenCollege, Jagadhri

EDITOR

PROF. R. K. SHARMA
Professor, Bharti Vidyapeeth University Institute of Management & Research, New Delhi

CO-EDITOR

DR. SAMBHAV GARG
Faculty, Shree Ram Institute of Business & Management, Urjani

EDITORIAL ADVISORY BOARD

DR. RAJESH MODI
Faculty, Yanbu Industrial College, Kingdom of Saudi Arabia
PROF. SIKANDER KUMAR
Chairman, Department of Economics, HimachalPradeshUniversity, Shimla, Himachal Pradesh
PROF. SANJIV MITTAL
UniversitySchool of Management Studies, GuruGobindSinghI. P. University, Delhi
PROF. RAJENDER GUPTA
Convener, Board of Studies in Economics, University of Jammu, Jammu
PROF. NAWAB ALI KHAN
Department of Commerce, Aligarh Muslim University, Aligarh, U.P.

PROF. S. P. TIWARI
Head, Department of Economics & Rural Development, Dr. Ram Manohar Lohia Avadh University, Faizabad
DR. ANIL CHANDHOK
Professor, Faculty of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana
DR. ASHOK KUMAR CHAUHAN
Reader, Department of Economics, KurukshetraUniversity, Kurukshetra
DR. SAMBHAVNA
Faculty, I.I.T.M., Delhi
DR. MOHENDER KUMAR GUPTA
Associate Professor, P.J.L.N.GovernmentCollege, Faridabad
DR. VIVEK CHAWLA
Associate Professor, Kurukshetra University, Kurukshetra
DR. SHIVAKUMAR DEENE
Asst. Professor, Dept. of Commerce, School of Business Studies, Central University of Karnataka, Gulbarga

ASSOCIATE EDITORS

PROF. ABHAY BANSAL
Head, Department of Information Technology, Amity School of Engineering & Technology, Amity University, Noida
PARVEEN KHURANA
Associate Professor, MukandLalNationalCollege, Yamuna Nagar
SHASHI KHURANA
Associate Professor, S.M.S.KhalsaLubanaGirlsCollege, Barara, Ambala
SUNIL KUMAR KARWASRA
Principal, AakashCollege of Education, ChanderKalan, Tohana, Fatehabad
DR. VIKAS CHOUDHARY
Asst. Professor, N.I.T. (University), Kurukshetra

TECHNICAL ADVISOR

AMITA
Faculty, Government M. S., Mohali

FINANCIAL ADVISORS

DICKIN GOYAL
Advocate & Tax Adviser, Panchkula
NEENA
Investment Consultant, Chambaghat, Solan, Himachal Pradesh

LEGAL ADVISORS

JITENDER S. CHAHAL
Advocate, Punjab & Haryana High Court, Chandigarh U.T.
CHANDER BHUSHAN SHARMA
Advocate & Consultant, District Courts, Yamunanagar at Jagadhri

SUPERINTENDENT

SURENDER KUMAR POONIA

CALL FOR MANUSCRIPTS

Weinvite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the area of Computer, Business, Finance, Marketing, Human Resource Management, General Management, Banking, Education, Insurance, Corporate Governance and emerging paradigms in allied subjects like Accounting Education; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Monetary Policy; Portfolio & Security Analysis; Public Policy Economics; Real Estate; Regional Economics; Tax Accounting; Advertising & Promotion Management; Business Education; Management Information Systems (MIS); Business Law, Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labor Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; Public Administration; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism, Hospitality & Leisure; Transportation/Physical Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Digital Logic; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Multimedia; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic and Web Design. The above mentioned tracks are only indicative, and not exhaustive.

Anybody can submit the soft copy of his/her manuscript **anytime** in M.S. Word format after preparing the same as per our submission guidelines duly available on our website under the heading guidelines for submission, at the email address: **infoijrcm@gmail.com**.

GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1. **COVERING LETTER FOR SUBMISSION**:

DATED: _____________

THE EDITOR
IJRCM

Subject: **SUBMISSION OF MANUSCRIPT IN THE AREA OF**.

(e.g. Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)

DEAR SIR/MADAM

Please find my submission of manuscript entitled '____' for possible publication in your journals.

I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

I affirm that all the author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

Also, if my/our manuscript is accepted, I/We agree to comply with the formalities as given on the website of the journal & you are free to publish our contribution in any of your journals.

NAME OF CORRESPONDING AUTHOR:
Designation:
Affiliation with full address, contact numbers & Pin Code:
Residential address with Pin Code:
Mobile Number (s):
Landline Number (s):
E-mail Address:
Alternate E-mail Address:

NOTES:

a) The whole manuscript is required to be in ***ONE MS WORD FILE*** only (pdf. version is liable to be rejected without any consideration), which will start from the covering letter, inside the manuscript.
b) The sender is required to mentionthe following in the **SUBJECT COLUMN** of the mail:
New Manuscript for Review in the area of (Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/ Engineering/Mathematics/other, please specify)
c) There is no need to give any text in the body of mail, except the cases where the author wishes to give any specific message w.r.t. to the manuscript.
d) The total size of the file containing the manuscript is required to be below **500 KB**.
e) Abstract alone will not be considered for review, and the author is required to submit the complete manuscript in the first instance.
f) The journal gives acknowledgement w.r.t. the receipt of every email and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending separate mail to the journal.

2. **MANUSCRIPT TITLE**: The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.

3. **AUTHOR NAME (S) & AFFILIATIONS**: The author (s) **full name**, **designation**, **affiliation** (s), **address**, **mobile/landline numbers**, and **email/alternate email address** should be in italic & 11-point Calibri Font. It must be centered underneath the title.

4. **ABSTRACT**: Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para. Abbreviations must be mentioned in full.

5. **KEYWORDS**: Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.

6. **MANUSCRIPT**: Manuscript must be in ***BRITISH ENGLISH*** prepared on a standard A4 size ***PORTRAIT SETTING PAPER***. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of every page. It should be free from grammatical, spelling and punctuation errors and must be thoroughly edited.

7. **HEADINGS**: All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.

8. **SUB-HEADINGS**: All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.

9. **MAIN TEXT**: The main text should follow the following sequence:

   INTRODUCTION

   REVIEW OF LITERATURE

   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

   SCOPE FOR FURTHER RESEARCH

   ACKNOWLEDGMENTS

   REFERENCES

   APPENDIX/ANNEXURE

   It should be in a 8 point Calibri Font, single spaced and justified. The manuscript should preferably not exceed ***5000 WORDS***.

10. **FIGURES &TABLES**: These should be simple, crystal clear, centered, separately numbered & self explained, and **titles must be above the table/figure**. **Sources of data should be mentioned below the table/figure**. It should be ensured that the tables/figures are referred to from the main text.

11. **EQUATIONS**:These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.

12. **REFERENCES**: The list of all references should be alphabetically arranged. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per the following:

- All works cited in the text (including sources for tables and figures) should be listed alphabetically.
- Use (**ed.**) for one editor, and (**ed.s)** for multiple editors.
- When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
- Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
- The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
- For titles in a language other than English, provide an English translation in parentheses.
- The location of endnotes within the text should be indicated by superscript numbers.

PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:

BOOKS

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITES

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

ASSET LIABILITY MANAGEMENT IN PUNJAB NATIONAL BANK -WITH SPECIAL REFERENCE TO THEIR INTEREST RATE SENSITIVITY

DEVI PREMNATH
ASST. PROFESSOR
SREE NARAYANA GURU INSTITUTE OF MANAGEMENT STUDIES
COIMBATORE

GOWRY.R
STUDENT
SREE NARAYANA GURU INSTITUTE OF MANAGEMENT STUDIES
COIMBATORE

ABSTRACT

Financial sectors reforms, especially reforms relating to interest rate deregulation has given an awakening call to the modern sector banks. The prime motive of all the banks is to maximize the profitability at the same time they will have to maintain sufficient liquidity for attracting the depositors. To maintain and fulfill these objectives it has become imperative for all these banks to monitor and manage their assets and liabilities in a proper way. This paper titled 'Asset Liability Management In Punjab National Bank -With Special Reference To Their Interest Rate Sensitivity" is aimed at measuring the interest rate risk in PNB by using Gap Analysis technique. The researcher has taken the concept of interest rate sensitivity because it is a brand new concept which is posing a lot of problems to the modern banks and no much study has been done on that aspect of banking..

KEYWORDS

Interest rate sensitivity, Net Interest Income, Portfolio mix.

1. INTRODUCTION

1.1 ASSET LIABILITY MANAGEMENT

Asset Liability Management (ALM) defines management of all assets and liabilities (both off and on balance sheet items) of a bank. It requires assessment of various types of risks and altering the asset liability portfolio to manage risk. Till the early 1990s, the RBI did the real banking business and commercial banks were mere executors of what RBI decided. But now, Bureau of Indian Standards (BIS) is standardizing the practices of banks across the globe and India is part of this process.

The concept of asset liability management is of recent origin in India. It has been introduced in Indian Banking industry with effect from. 1st April, 1999. Asset liability management is concerned with risk management and provides a comprehensive and dynamic framework for measuring, monitoring and managing liquidity, interest rate, foreign exchange and equity and commodity price risks of a bank that needs to be closely integrated with the banks' business strategy.

1.2 BENEFITS OF ASSET LIABILITY MANAGEMENT

It is a tool that enables bank managements to take business decisions in a more informed framework with an eye on the risks that bank is exposed to. It is an integrated approach to financial management, requiring simultaneous decisions about the types of amounts of financial assets and liabilities - both mix and volume - with the complexities of the financial markets in which the institution operates.

1.3 INTEREST RATE RISK MANAGEMENT IN PUNJAB NATIONAL BANK

Interest rate risk is measured through the use of re-pricing gap analysis and duration analysis. Liquidity risk is measured through gap analysis. Since the bank's balance sheet consists predominantly of rupee assets and liabilities, movements in domestic interest rates constitute the main source of interest rate risk. Exposure to fluctuations in interest rates is measured primarily by way of gap analysis, providing a static view of the maturity and re-pricing characteristics of balance sheet positions.

An interest rate gap report is prepared by classifying all assets and liabilities into various time period categories according to contracted maturities or anticipated re-pricing date. The difference in the amount of assets and liabilities maturing or being re-priced in any time period category, would then give an indication of the extent of exposure to the risk of potential changes in the margins on new or re-priced assets and liabilities. Punjab National Bank prepares interest rate risk reports on a fortnightly basis. These reports are submitted to the Reserve Bank of India on a monthly basis. Interest rate risk is further monitored through interest rate risk limits approved by the Asset Liability Management Committee.

Asset Liability Management of the Bank is being done proactively to manage any eventuality. The Asset Liability Management in respect of all assets and liabilities is being done on a daily basis with the migration of entire branch network to the Core Banking Solution (CBS). The Bank has also adopted a scientific basis for fixation of BPLR and interest rates in respect of assets and liabilities products. The bank is preparing to move from BPLR to Base Rate System for pricing of loans.

Asset Liability Management Committee (ALCO) is primarily responsible for establishing the market risk management and asset liability management of the bank, procedures thereof, implementing risk management guidelines issued by regulator, best risk management practices followed globally and ensuring that internal parameters, procedures, practices/policies and risk management prudential limits are adhered to. ALCO is also entrusted with the job of pricing of retail advances and deposit products and suggesting revision of BPLR. The policies for hedging and/or mitigating risk and strategies and processes for monitoring the continuing effectiveness of hedges/mitigants are discussed in ALCO and based on views taken by / mandates of ALCO, hedge deals are undertaken.

Liquidity risk of the bank is assessed through gap analysis for maturity mismatch based on residual maturity in different time buckets as well as various liquidity ratios and management of the same is done within the prudential limits fixed thereon. The bank is proactively using duration gap and interest rate forecasting to minimize the impact of interest rate changes. Advance techniques such as Stress testing, simulation, sensitivity analysis etc. are used on regular intervals to draw the contingency funding plan under different liquidity scenarios.

2. OBJECTIVES OF THE STUDY

2.1 PRIMARY OBJECTIVE

To study the management of assets and liabilities with reference to the interest rate sensitivity in Punjab national bank.

2.2 SECONDARY OBJECTIVES

- To arrive at net interest income, net interest margin and net income.
- To arrive at the portfolio mix
- To gauge the performance of the bank with reference to asset liability management using gap analysis

3. RESEARCH METHODOLOGY

This is an analytical research study. The bank under study is Punjab National Bank. The PNB was selected as this was a bank which has undergone a lot of policy changes after a lot of strategic moves. The researchers wanted to know how this bank is maintaining and managing their assets and liabilities portfolios especially in the wake of various financial reforms , particularly relating to interest rate deregulation. Primary data has been collected after personal discussions with the bank staff and the secondary data were collected from the annual reports of PNB, circulars and reading material on ALM. In this study, **GAP** Analysis Technique has been used to measure the interest rate risk. Period of the study is two years -2008-2009, 2009-2010 respectively.

3.1. GAP ANALYSIS

Gap analysis is a technique of asset-liability management that can be used to assess interest rate risk or liquidity risk. It measures at a given date the gaps between rate sensitive liabilities (RSL) and rate sensitive assets (RSA) (including off-balance sheet positions) by grouping them into time buckets according to residual maturity or next repricing period, whichever is earlier. An asset or liability is treated as rate sensitive if

i) Within the time bucket under consideration, there is a cash flow;
ii) The interest rate resets/ re-prices contractually during the time buckets;
iii) Administered rates are changed and
iv) It is contractually pre-payable or withdrawal allowed before contracted maturities.

This gap is used as a measure of interest rate sensitivity. A bank benefits from a positive gap i.e., (RSA>RSL), if interest rate rises. Similarly, a negative gap (RSA<RSL) is advantageous during the period of falling interest rate. The interest rate risk is minimized if the gap is near zero.

3.2. COMPUTATION OF RATE SENSITIVE ASSETS AND RATE SENSITIVE LIABILITIES

Rate sensitive assets and liabilities are arrived by grouping only those assets and liabilities which come within the time bucket 2-7 days to 6 months-1 year. There should be constant resets and re prices of interest rates during the time buckets. There should be contractual prepayment and withdrawal. The total of assets and liabilities which satisfy the above conditions are taken as rate sensitive assets and rate sensitive liabilities.

Thus the gap is given by,

Gap = Rate Sensitive Assets – Rate Sensitive Liabilities

$$\text{Gap Ratio} = \frac{\text{Rate Sensitive Asset}}{\text{Rate Sensitive Liabilities}}$$

3.3. PROCEDURE ADOPTED FOR BREAKING UP OF ASSETS AND LIABILITIES

After the computation of rate sensitive assets and rate sensitive liabilities, uniform rate of interest has been assigned for rate sensitive assets and fixed rate assets. This has been followed for rate sensitive liabilities and fixed rate liabilities.

The interest rate for assets are arrived by using the formula,

$$\text{Interest rate for assets} = \frac{\text{Interest Earned}}{\text{Total Advances} + \text{Total Investments} + \text{Total Foreign Currency Assets} - \text{Non Earning Assets}}$$

The interest rate for assets has been arrived at by taking into account total advances, total investments, total foreign currency assets and non earning assets.

The interest rate for liabilities are arrived by using the formula,

$$\text{Interest rate for liabilities} = \frac{\text{Interest Expended}}{\text{Total Deposits} + \text{Total Borrowings} + \text{Total Foreign Currency Liabilities}}$$

The interest rate for liabilities has been arrived at by taking into account the interest expended, total deposits, total borrowings and total foreign currency liabilities.

3.4 COMPUTATION OF MIX

The portfolio mix for assets and liabilities have been computed. The mix for rate sensitive assets, fixed rate assets, non earning assets, rate sensitive liabilities, fixed rate liabilities and non interest bearing liabilities have been calculated to suggest the appropriate mix for assets and liabilities.

$$\text{Mix of rate sensitive assets} = \frac{\text{Volume of rate sensitive assets}}{\text{Total / Average of assets}} \times 100$$

$$\text{Mix of fixed rate assets} = \frac{\text{Volume of fixed rate assets}}{\text{Total / Average of assets}} \times 100$$

$$\text{Mix of non earning assets} = \frac{\text{Volume of non earning assets}}{\text{Total / Average of assets}} \times 100$$

$$\text{Mix of rate sensitive liabilities} = \frac{\text{Volume of rate sensitive liabilities}}{\text{Total / Average of liabilities}} \times 100$$

$$\text{Mix of fixed rate liabilities} = \frac{\text{Volume of fixed rate liabilities}}{\text{Total / Average of liabilities}} \times 100$$

$$\text{Mix of non interest bearing liabilities} = \frac{\text{Volume of non interest bearing liabilities}}{\text{Total / Average of liabilities}} \times 100$$

3.5 COMPUTATION OF PERFORMANCE MEASURES

The Net Interest Income (NII), Net Interest Margin (NIM), Net Income (NI) and gap are the measures used to gauge the performance of Punjab National Bank (Chandranagar branch) with relation to the asset liability management.

Net interest income = (Interest rate of RSA × Volume of RSA) + (Interest rate of FRA × Volume of FRA) – (Interest rate of RSL × Volume of RSL) – (Interest rate of FRL × Volume of FRL)

$$\text{Net interest margin} = \frac{\text{Net interest income}}{\text{Total Performing Assets}}$$

Net Income = Net Interest Income – Provisions and contingencies

4. RESULTS AND DISCUSSIONS

TABLE 4.0: RESIDUAL MATURITY PATTERN OF ASSETS AND LIABILITIES FOR THE YEAR 2008-09 (In Crores)

Maturity Pattern	Deposits	Advances	Investments	Borrowings	Foreign currency assets	Foreign currency liabilities
Next day	28.206	80.403	.300	4.583	1.297	4.633
2-7 days	55.540	38.856	10.482	.372	6.837	.918
8-14 days	15.445	75.611	.195	.173	1.486	2.263
15-28 days	40.981	53.569	8.886	1.457	7.648	5.721
29 days-3 months	100.758	91.893	20.371	7.295	14.273	29.976
3 months-6 months	209.472	91.001	22.525	13.929	24.593	17.721
6 months-1 year	266.932	198.264	24.501	.541	10.649	12.115
1 year-3 years	870.681	545.859	91.193	9.768	8.849	3.719
3 years-5 years	24.376	187.547	142.739	11.466	7.271	.306
Over 5 years	385.211	66.645	366.411	75.007	2.457	2.857

Source: Annual reports of Punjab National Bank, 2008-09.

TABLE 4.1: BREAK- UP OF ASSETS AND LIABILITIES FOR THE YEAR 2008 – 2009 (In crores)

Items	Volume	Interest Rate	Mix
RSA	783.648	9.3	34
FRA	1418.975	9.3	62
NEA	102.506	0	4.4
Total / Average	**2305.130**	**6.2**	**100**
RSL	821.040	5.7	35
FRL	1383.394	5.7	60
NIBL	102.696	0	5
Total / Average	**2305.130**	**3.8**	**100**

Results computed.

INTERPRETATION

The above table 4.1 shows the break – up of assets and liabilities in the year 2008-09. The table suggests that the RSA and RSL which is Rate Sensitive Assets and Rate Sensitive Liabilities of balance sheet positions have been classified according to the residual maturity. Here, the entire volume of Rate Sensitive Assets, Rate Sensitive Liabilities, Fixed Rate Assets, Fixed Rate Liabilities, Non Earning Assets and Non Interest Bearing Liabilities has been calculated and the total average comes around to 2305.13055.

The interest rates for RSA, FRA, RSL and FRL shows that the total average of interest rate for assets comes around 6.2 and the total average of interest rate for liabilities comes around 3.8.

The **mix** for RSA, FRA, NEA, RSL, FRL and NIBL has been computed. The mix for assets i.e., RSA comes around 34, for FRA it is 62, for NEA it is 4.4. The mix for liabilities i.e., RSL comes around 35, for FRL it is 60 and for NIBL it is 5. It has been confirmed from the table that the mix of RSA, FRA and RSL, FRL should be 35:65, which shows that there is a negative gap i.e., RSA<RSL. This trend is advantageous during the period of falling interest rates. The interest rate risk is minimized if the gap is nearing to zero

CHART 4.1: COMPOSITION OF ASSETS AND LIABILITIES FOR THE YEAR 2008-09

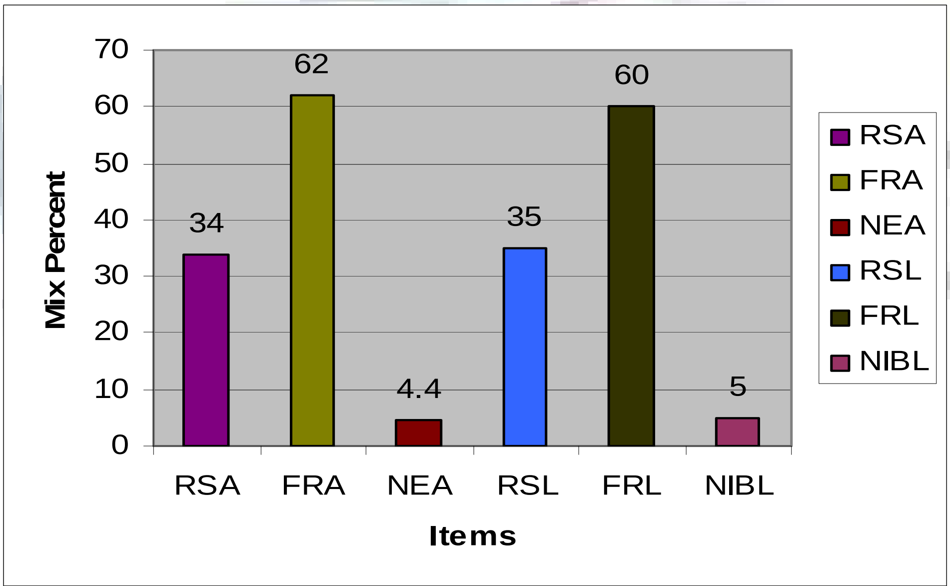

TABLE 4.2: SUMMARY OF PERFORMANCE MEASURES (In crore)

Performance Variables	Measures
Gap	-37.392
Net Interest Income (NII)	7930.61
Net Interest Margin (NIM)	2.7 %
Net Income (NI)	7581.467

Results computed.

INTERPRETATION

As stated in the objective, the performance measures can be arrived at by the calculation of Net Interest Income (NII), Net Interest Margin (NIM) and Net Income (NI). From the above table it can be inferred that I the year 2008-09, the gap is negative and it comes around -37.39215. The Net Interest Income is 7930.61. The Net Interest Margin is 2.7 and the Net Income comes around 7581.467.

It can be suggested that if a negative interest rate shock of 200 basis points i.e., 2% is applied the Net Interest Income, Net Interest Margin and Net Income will be reduced. The negative shock would bring down the Net Income.

TABLE 4.3: RESIDUAL MATURITY OF ASSETS AND LIABILITIES FOR THE YEAR 2008-09 (In Crores)

Items	Next day	2-7 days	8-14 days	15-28 days	29 days – 3 months	3months –6months	6 months – 1 year
Advances	80.403	28.856	75.611	53.569	91.893	91.001	198.264
Investments	.300	10.482	.195	8.886	2.836	22.525	24.501
Foreign currency assets	1.297	6.837	1.486	7.648	14.273	24.593	10.649
Deposits	28.206	55.540	15.445	40.981	102.758	209.472	266.932
Borrowings	4.583	.372	.173	1.457	7.295	13.929	.541
Foreign currency liabilities	4.633	.918	2.263	5.721	29.976	17.721	12.115
Gap	44.578	-.655	59.411	21.943	-31.832	-103.002	-46.174

Source: Annual reports of Punjab National Bank, 2008-09.

INTERPRETATION

The above table shows the residual maturity of the rate sensitive assets and rate sensitive liabilities from 2-7 days to 6 months-1 year for the year 2007-08. It is revealed that the time buckets of 2-7 days, 29 days-3 months, 3 months-6 months and 6 months- 1 year are vulnerable paving way to negative gaps of high volume.

2009-2010 CALCULATIONS

TABLE 4.4: RESIDUAL MATURITY PATTERN OF ASSETS AND LIABILITIES FOR THE YEAR 2009-2010 (In Crores)

Maturity Pattern	Deposits	Advances	Investments	Borrowings	Foreign Currency Assets	Foreign Currency Liabilities
Next day	35.058	37.737	0	2.956	3.416	2.165
2-7 days	64.398	37.676	4.606	32.314	1.447	5.209
8-14 days	52.225	29.831	2.420	1.323	2.938	8.670
15-28 days	58.159	132.052	13.546	3.827	3.283	6.351
29 days– 3 months	101.040	76.098	19.209	19.737	37.653	39.419
3 months–6 months	137.238	108.779	35.171	10.246	50.760	19.094
6 months – 1 year	308.911	248.364	24.968	.483	26.618	18.606
1 year – 3 years	1232.258	844.403	91.487	112.045	11.896	10.877
3 years – 5 years	58.939	222.383	107.083	108.430	4.623	4.934
Over 5 years	98.006	218.684	350.994	109.690	8.411	3.003

Source: Annual reports of Punjab National Bank, 2009-10.

TABLE 4.5: BREAK- UP OF ASSETS AND LIABILITIES FOR THE YEAR 2009– 2010 (In Crores)

Items	Volume	Interest Rate	Mix
RSA	897.671	8.3	31
FRA	1859.967	8.3	64
NEA	100.000	0	3.5
Total / Average	**2857.639**	**5.5**	**100**
RSL	927.439	4.8	32
FRL	1825.396	4.8	64
NIBL	104.802	0	3.7
Total / Average	**2857.639**	**3.2**	**100**

2009-10. Results computed.

INTERPRETATION

The above table shows the break – up of assets and liabilities in the year 2009-10. The table suggests that the RSA and RSL which is Rate Sensitive Assets and Rate Sensitive Liabilities of balance sheet positions have been classified according to the residual maturity. Here, the entire volume of Rate Sensitive Assets, Rate Sensitive Liabilities, Fixed Rate Assets, Fixed Rate Liabilities, Non Earning Assets and Non Interest Bearing Liabilities has been calculated and the total average comes around to 2857.63950

The interest rates for RSA, FRA, RSL and FRL have also been computed. The total average of interest rate for assets comes around 5.5 and the total average of interest rate for liabilities comes around 3.2.

The **portfolio mix** computation suggest that the asset mix i.e., RSA comes around 31, for FRA it is 64, for NEA it is 3.5. Similarly, the liability mix i.e., RSL comes around 32, for FRL it is 64 and for NIBL it is 3.7. The mix of RSA, FRA and RSL, FRL for the year 2009-10 falls between 35:65, which shows that there is a negative gap i.e., RSA<RSL. This trend is advantageous during the period of falling interest rates. The interest rate risk is minimized if the gap is nearing to zero.

CHART 4.5: COMPOSITION OF ASSETS AND LIABILITIES FOR THE YEAR 2009-10

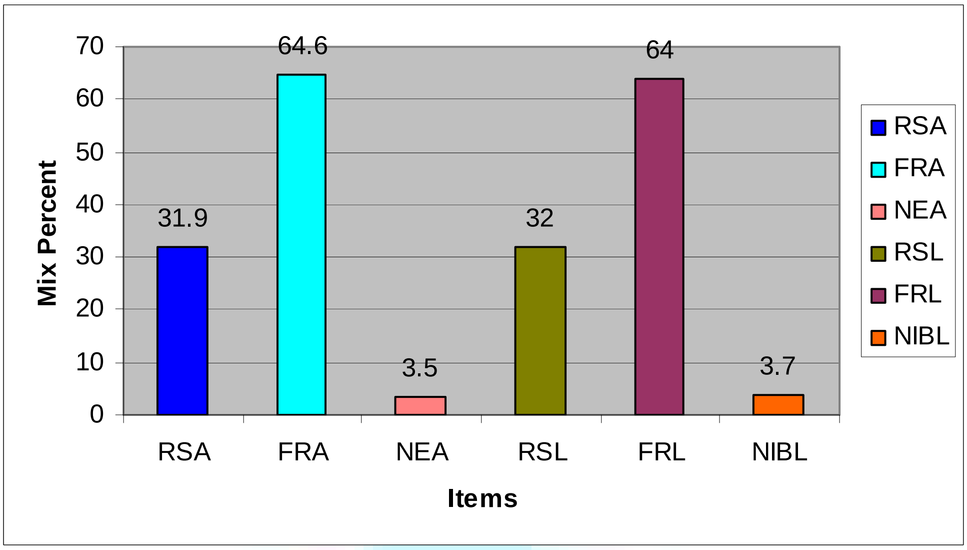

TABLE 4.6: SUMMARY OF PERFORMANCE MEASURES (In Crores)

Performance Variables	Measures
Gap	-29.768
Net Interest Income (NII)	9674.792
Net Interest Margin (NIM)	3.38 %
Net Income (NI)	9325.649

Results computed.

INTERPRETATION

The performance measures such as Net Interest Income (NII), Net Interest Margin (NIM) and Net Income (NI) has been calculated. From the above table it can be inferred that in the year 2009-10, the gap i.e., RSA-RSL is negative and it comes around -29.76807. The Net Interest Income is 9674.792. The Net Interest Margin is 3.38 and the Net Income comes around 9325.649.

It can be suggested that if a negative interest rate shock of 200 basis points i.e., 2% is applied the Net Interest Income, Net Interest Margin and Net Income will be reduced. The negative shock would bring down the Net Income.

TABLE 4.7: RESIDUAL MATURITY OF ASSETS AND LIABILITIES FOR THE YEAR 2009-10 (In Crores)

Items	Next day	2-7 days	8-14 days	15-28 days	29days –3mnths	3months –6months	6 months – 1 year
Advances	37.737	29.831	132.052	76.098	108.779	248.364	844.403
Investments	0	4.696	2.420	13.546	108.779	35.171	24.968
Foreign currency assets	3.416	1.447	2.938	3.283	37.653	50.760	26.618
Deposits	35.058	64.398	52.225	58.159	101.040	137.238	308.911
Borrowings	2.956	32.314	1.323	3.827	19.737	10.246	.483
Foreign currency liabilities	2.165	5.209	8.670	6.351	39.419	19.094	18.606
Gap	.973	-65.946	75.191	708.790	-5.445	167.716	567.987

Source: Annual reports of Punjab National Bank, 2009-10.

INTERPRETATION

The above table shows the residual maturity of the rate sensitive assets and rate sensitive liabilities from 2-7 days to 6 months-1 year for the year 2007-08. It is revealed that the time buckets of 2-7 days and 29 days-3 months are vulnerable, paving way to negative gaps of high volume. These negative gaps are due to the mismatch in the maturity pattern of assets and liabilities.

5. FINDINGS AND SUGGESTIONS

5.1 FINDINGS OF THE STUDY

1. The asset liability management concept though in vogue since 1997, its inherent complexities in obtaining accurate timely information from the grass root level makes the bank in not getting the full advantage of it.
2. The Punjab national bank's interest rate sensitivity is measured through the use of gap analysis technique.
3. During the year 2009-10, the net income of the bank has increased in spite of the negative gap.
4. The difference in the net interest income, net interest margin and net income during 2008-09 and 2009-10 is due to the difference in the mismatch of maturity pattern of the assets and liabilities during those years.
5. The analysis of net interest margin, net interest income and net income shows an increasing trend due to better asset liability management carried out by the bank.
6. The analysis of residual maturity pattern of assets and liabilities from 2-7 days to 6 months-1 year reveals one or more substantial negative gaps.
7. The negative gaps can be advantageous for the bank during the period of falling interest rates.

5.2 SUGGESTIONS

1. The bank can adopt asset driven strategies by lengthening the maturity of the asset portfolio to overcome the asset liability mismatch.
2. To overcome the mismatch in the maturity pattern of assets and liabilities, the bank can also adopt liability driven strategies by shortening the maturity of liability portfolio.
3. An adjustment in the asset and liability portfolio could yield better net income for the bank.
4. The bank can actively participate in the derivative market by using interest rate derivatives to manage asset and liability positions.

6. CONCLUSION

The study aimed to analyze the management of assets and liabilities with reference to the interest rate sensitivity in Punjab National Bank. The analysis of residual maturity pattern of assets and liabilities show a negative gap. This has revealed that the bank is exposed to asset liability mismatch.

Though there is a negative gap, the bank's net interest income, net interest margin and net income shows an increasing trend. The net income of the bank during 2009-10 is higher than that in 2008-09. This shows betterment in the asset liability management of the bank during the year 2009-10 .The banks should use information about these risks as key input in their strategic business planning process. The sensitivity analysis can be tool for risk management. The performance of the bank has been promising thereby opening new horizons of hope and development for the country.

7. REFERENCES

1. Annual Report of Punjab National Bank for the years 2008, 2009, 2010.
2. Basel committee on Banking supervision (2001). Principles for the manangement and supervision of interest rates risk, bank for international Settelments.
3. Fama ,E.F.(1984)," The Information in the Term Structure of interest rates ", Journal of financial Economics, PP.509-528
4. RBI Guidelines on Asset Liability Management Practices in banks , http://www.rbi.org

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Commerce, Economics and Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mail **info@ijrcm.org.in** for further improvements in the interest of research.

If you have any queries please feel free to contact us on our E-mail **infoijrcm@gmail.com**.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Co-ordinator

ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals