ACTUARIAL ASSESSMENT OF PENSION AND GENERAL PROVIDENT FUND LIABILITIES AS AT 30.06.2010

(AS PER CONTRACT WITH PRMP, GOVERNMENT OF PUNJAB UNDER TA Loan No. 2386 – PAK)

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Executive Summary

1. The primary objectives of the current assignment given by Punjab Resource Management Programme, Government of Punjab (GoPb) (under the extension of TA Loan No. 2386) in the Terms of Reference of contract are:

   i. Update of actuarial assessments, including Pension / General Provident Fund liabilities at 30.06.10.
   ii. Reporting of Pension and GPF Schemes in line with IPSAS 25, for the year 2009-10.
   iii. Report on test of accessibility and accuracy of the payroll, pension and GP Fund records on the SAP R/3 system.

   This Report addresses Part (i) and Part (ii) of the above summary of Terms of Reference of Contract mentioned above. Part (iii) of the above summary will be presented as a separate report.

2. Punjab Government has set up a separate Punjab Pension Fund to pre-finance part of pension liability. This fund has assets of Rs.12.05 billion as at 30.06.2010. The Government has subsequently approved a law for setting up of GP Fund. However, no contributions have been made to the GP Fund as yet.

3. An actuarial assessment of GoPb Pension Fund and GP Fund Liability was conducted in 2009. The Government of Punjab intends to update estimates of Pension and GP fund Liabilities.

4. The accrued liability of the Punjab Government Pension Scheme, based on the information provided in 2009 (and assuming NIL early retirements) was Rs.597.6 billion as at 30th June 2009.

Out of this liability, Rs.391.7 billion pertained to active employees and the remaining Rs.206.0 billion was associated with existing pensioners.

5. Data for the current exercise was received from two sources, AG Office and Finance Department of GoPb.

6. Information received for estimating pension liability and future cash outflows was as follows:

AG Office:

i. 199,768 records (including 48,467 repetitive records) of 151,401 active employees of Lahore District in MS Excel.
ii. 344,315 records of GoPb Pensioners,
iii. Total pension payout for the year 2009-10 (split by pension and commutation payments)
iv. Information of total number of pensioners for the year 2009-10.

Finance Department of GoPb:

i. Information of total sanctioned posts for 2010.

7. Different checks revealed a number of anomalies in data set of active employees and pensioners.

The numbers of records discarded from each data set are as follows:

	Active	Pensioners
Total Discarded Data	55,333	148,922
Total Repetitive Data Removed	48,367	N/A
Total Original Data	199,768	344,315
Final Data Used	**96,068**	**195,393**

8. During the year 2009-10, all of the contract employees were regularized. As per our discussion with AG Office personnel, total number of these regularized employees stands out to be approximately 125,000. The data provided by the AG Office for Lahore District Active Employees does not segregate these newly regularized employees. It has been assumed that the data provided includes the proportionate number of these employees regularized and thus is a true representative of the population. This was checked by comparing various salient features of the data..

9. From the remaining sample set of 96,068 active employees and 195,393 pensioners, the distributions of active employees and pensioners were derived using aggregate information of sanctioned posts for employees (after making adjustments for actual employees using information received for previous exercises) and total amount of pension payout during 2009-10.

10. **There was adequate confidence in the constructed data because the valuation base used aggregate information for both active employees and pensioners information i.e. aggregate pension payout of Rs. 18.726 billion for the year 2009-10 and total number of active employees of 938,511 (extracted from information of total sanctioned posts). The individual records of active employees and pensioners were used to construct various age, service, salary and pension amount distributions.**

11. Government of Punjab has announced the following benefit changes w.e.f. 01.07.2010:

    i. Increase in the rate of Family Pension from 50% to 75% of gross and net pension.

    ii. Increase in minimum pension from Rs.2,000 per month to Rs.3,000 per month. Minimum family pension has been increased from Rs.1,000 per month to Rs.2,250.

These benefit changes were announced through annual budget for 2010-11 during June 2010 but effective from 01.07.2010. Therefore it was considered appropriate to reflect the liability based upon the revised benefit structure. As such, it has been assumed that the changes made in the 2010 budget will be effective from 30.06.2010.

12. **The accrued liability of the Punjab Government Pension Scheme, based on the above information base and assuming NIL early retirements is Rs. 687.7 billion as at 30th June 2010 (compared to Rs.597.6 billion as at 30th June 2009.**

    Out of this liability, Rs.401.9 billion pertains to active employees and the remaining Rs.285.8 billion is associated with existing pensioners.

    The extent of variation in accrued liability due to change in long-term economic assumptions has also been analysed. The sensitivity analysis shows that the liability varies within the range of -6% to +6% for salary related scenario and -8% to 9% for interest/discount rate related scenario.

13. However, the accrued liability of the Punjab Government Pension Scheme increases to Rs.718.1 billion as at 30th June 2010, in case early retirements are assumed as per the historic pattern.

14. The accrued liability of Punjab Government Pension Scheme as at 30.06.2010 is in the expected range due to the fact that gains/losses arsing during the year nearly offset each other. The major sources of gains and losses are as follows:

    a. The Average Salary increase during the year was 1.6% against the assumption of 11% during 2009-10. This lower than assumed salary increase has generated gain during the year.
    b. The new entrants during the year have a nominal amount of going-concern liability of as at 30.06.2010.

c. The Government has announced some benefit enhancements with effect from 01.07.2010. The actuarial valuation assumes that these benefit changes are effective as at the valuation date of 30.06.2010. This has generated past service cost as at 30.06.2010.

d. The Government has announced Pension increases at the rate of 20% for those who have retired before 01.12.2001 and 15% for those who have retired on or after 01.12.2001. The average Pension increase assumption for 2009-10 was 8%. This excess Pension increase has generated loss during the year and consequently has increased the Pension liability as at 30.06.2010.

15. A summary of the expected pension out goes related to Pension Scheme over the next 30 years (on nominal and real basis) is:

			Total Expense	
Year	**Expected Pension**	**Expected Commutation**	**Expense on Nominal Basis**	**Expense on Real Basis**
2010 - 11	23.7	6.0	29.7	29.7
2019 - 20	62.8	17.7	80.5	38.9
2029 - 30	193.2	54.6	247.8	49.5
2039 - 40	442.8	80.9	523.7	43.8

16. There are no visible jumps in the total expected cash flows in any year (in both nominal and real terms) and the amounts have a smooth progression over time. The commutation payments over the next 30 years do have sudden changes on nominal basis. Commutation payments are one-time expense and this pattern of jumps is mostly due to the distribution of the active employees determined from the data. The pension payout on real basis increases by 3% per annum for the next 18 years and remains virtually static thereafter.

17. It should also be noted that while there is no noticeable change in trends of cash flows as compared to 2009 projections, the absolute amount of regular pension outgo

expected for 2010-11 has increased substantially due to the heavy indexation provided to pensioners with effect from July 01, 2010.

18. Govt. has introduced an additional Medical Allowance for pensioners equal to 15-20% of monthly pension with effect from July 1, 2010. However, since this benefit has been introduced in lieu of an existing medical benefit, i.e. outdoor reimbursement of medicines, it has been considered appropriate not to consider this liability as part of Pension liability.

19. Information received for estimating GP Fund liability and future cash outflows was as follows:

GP Fund Balances (Lahore District)

Information of 125,212 records having details of Net GPF Balances from SAP/R3.

GP Fund balance (Other District)

Information of 265,614 records having details of Net GPF Balances from SAP/R3.

20. Different checks revealed a number of anomalies in data set. The number of records discarded from each data set are as follows:

GP Fund Net Balances (Lahore District)	292
GP Fund Net Balances (Other Districts)	28,008

21. The district wise average balances for other districts were significantly lower as compared to those provided for Lahore district **(Rs. 85,639)** and were much lower than the expected range of **Rs.75,000 –Rs.85,000. It appeared that the accumulated GPF balances were not updated from the date of start of employment. Thus, to determine the underlying liability of the Government of Punjab GP Fund and cash-flow projections the Lahore district information was used.**

22. The resulting information was mapped on to the active population to estimate the GP Fund Liability.

23. **Estimate of accrued liability of the Punjab Government General Provident Fund Scheme, based on the above information base is Rs.83.772 billion as at 30th June 2010 (as compared to Rs.79.2 billion as at 30th June 2009.**

24. There are outstanding GP Fund payments to employees leaving service during 2009-10. As per AG Punjab, these GPF payments were not made due to non availability of cash. The estimated amount of these outstanding payments is Rs.3.109, thus making the total GPF liability **Rs. 86.881 billion.**

25. The growth in GP Fund balances (i.e. liability), assuming future interest credited is 12% per annum, for the next 30 years at 5 year intervals on nominal and real basis (using 2009-10 as base year) is given the following table:

Year	Estimated GPF Liability at fiscal year End (Nominal Basis)	Estimated GPF Liability at fiscal year End (Real Basis)
2010 – 11	95.4	87.1
2013 – 14	141.5	99.0
2018 – 19	257.7	117.3
2023 – 24	421.8	126.8
2028 – 29	595.6	120.7
2033 – 34	964.9	132.0
2038 – 39	1617.7	149.6
2039 – 40	1,784.9	152.8

Importantly, GoPb is expected to consume approximately Rs. 5.4 billion of employees' money in 2010-11, which is projected to escalate over time.

26. A summary of the expected out goes related to General Provident Scheme over the next 30 years (on nominal and real basis) is:

Year	Expense on Nominal Basis	Expense on Real Basis
2010 - 11	7.3	6.7
2019 - 20	13.5	5.6
2029 - 30	49.4	8.7
2039 - 40	99.3	7.7

27. There is a visibly rapid increase in GP Fund payments on nominal basis after which the payments have sudden dip in years 2029-30. Overall, even on real basis, the increase in GP Fund cash outflows is more significant than the increase in pension outgoes.

28. The GP Fund liability of Rs. 83.8 billion as at 30.06.2010 is less than the expected liability of Rs.89.8 billion at 30.06.2010, based upon the estimate in the previous valuation as at 30.06.2009. The possible reasons to this relatively lower liability are:

    a. Average GPF balance of Rs.85,639 in current valuation as compared to the expectation of Rs. 97,850 as per the previous valuation.

    b. Possible change in distribution of permanent employees from 2009 to 2010.

    It is important to look more deeply into the records of other employees on sample basis and test the accuracy of record fed on SAP/R3. If found sufficiently credible, the liability should be appropriately updated in future valuations.

29. The report on Actuarial Assessment of Pension and General Provident Fund as at 30.06.2009 provided various funding options for the Govt. of Punjab Pension Fund and General Provident (GP) Fund. Government of Punjab approved the recommended

Funding Strategy for Pension and General Provident Fund liabilities given in the Report.

30. This Report updates amount of contributions required in Pension and GP Fund over the next 30 years (as per the liability estimates based on the latest data) in accordance with the funding strategy already approved by the Government of Punjab.

31. The following table illustrates the total contributions in each GP and Pension Fund for the next 30 years based on the adopted funding strategy and revised information received as at 30.06.2010:

Year	Annual Regular Contribution deducted from Salaries	Past GP Fund Liability Amortization Instalment	Total Amount of Pension Fund Contribution	Total Contribution
2010 - 11	5.4	2.0	2.0	9.4
2011 - 12	6.0	2.0	2.0	10.0
2012 - 13	6.7	3.0	3.0	12.7
2013 - 14	7.4	3.0	3.0	13.4
2014 - 15	8.1	4.0	4.0	16.1
2015 - 16	8.9	5.1	6.0	20.0
2016 - 17	9.8	6.2	6.6	22.6
2017 - 18	10.9	7.4	7.2	25.5
2018 - 19	11.9	8.7	7.9	28.5
2023 - 24	18.8	14.9	12.0	45.7
2028 - 29	27.2	27.7	18.2	73.1

32. The reporting and disclosures of GoPb Pension and GPF Schemes have been prepared as per International Public Sector Accounting Standard (IPSAS) 25, for the year 2009-10.

The disclosures for the year 2009-10 are based on the same interpretations used for the reporting during 2008-09.

33. The Standard requires calculation of following 2 benchmarks :

   i. Statement of Financial Position; and
   ii. Statement of Financial Performance.

   These act as useful criteria for comparison of assets vs. liabilities AND scheme cost vs. contributions during the accounting period.

34. It needs to be noted that the amount recognised under "Statement of Financial Performance" for 2009-10 has increased significantly to Rs.129.469 billion as compared to Rs.96.46 billion for 2008-09.

   The primary reason is that the vast bulk of increase in past service liability due to change in benefits is vested (i.e. Rs.23.769 billion out of a total of Rs.29.711 billion). Consequently, the amount under Statement of Financial Position as at 30.06.2010 has also increased.

Introduction

In 2003, the Government of Punjab (GoPb) formed a working group to study the management of liabilities associated with its existing Pension and General Provident Fund schemes; to advise the reforms that were needed and suggest how they would be implemented.

During the first meeting of the working group held on 5th July 2003, it was decided that, in order to achieve the objectives of the study, it would be necessary to perform a preliminary actuarial valuation to determine the scope and magnitude of the scheme and the associated liability of the Government of Punjab Pension Scheme.

Nauman Associates carried out the above mentioned valuation at the behest of the Provincial Government, the results of which were submitted in report CM/L-1955/03 on 26th September 2003 to the working group. This was followed by a second report CM/L-2465/03 on 11th November 2003 containing the Firm's comments, observations and suggestions regarding the GoPb's Pension Scheme.

The results of the exercise carried out in 2003 were very approximate as they were based on minimal information. As such, it was decided to arrive at a better and up-to-date estimate of the GoPb Pension liability by incorporating greater amount of specific information.

In 2007, the undersigned under Contract A12419, Project RSC – C71322 (PAK) – Punjab Government Pension Scheme provided the results of preliminary actuarial valuation for estimating the extent of Pension liabilities and cash flow projections of the Government of Punjab employees. The Report highlighted in detail the sources of data, the anomalies in the available data, cash flow projections of the Pension Fund, sensitivity testing of key assumptions, and made recommendations for the funding requirement related to the Pension Fund.

Punjab Government, with the Asian Development Bank (ADB), has initiated the second phase of reforms under Punjab Government Efficiency Improvement Program [PGEIP]. PGEIP is the continuation of Punjab Resource Management Program [PRMP]. Under this, the GoPb has created a separate Punjab Pension Fund to pre-finance part of the liabilities. One of the policy actions under PGEIP requires streamlining the processing of Pension cases through necessary restructuring of the Pension administration and improving Pension & GP Fund record keeping. Government of the Punjab intends to update the earlier work and to illustrate financing options for revising the funding strategy. For this purpose, the Finance Department, engaged the undersigned to assist GoPb in conducting an actuarial assessment of Pension and General Provident Fund liabilities and carrying out various tasks.

In August 2009, a report providing the results of actuarial valuation for estimating the value of Pension and General Provident (GP) Fund liabilities, related cash flow projections, funding options and reporting and disclosures of these Schemes under IPSAS 25 of the Government of Punjab (GoPb), (as outlined under Pension and GP Fund Reforms component of TA Loan No. 2386 – PAK) was generated.

Under the extension of the same contract, the undersigned has been asked to update the Pension and GP Fund liabilities as per the data available on 30th June 2010 and also conduct IPSAS reporting for the year 2009-10. The Terms of Reference of the current assignment given by Punjab Resource Management Programme, Government of Punjab (GoPb) (under the extension of TA Loan No. 2386) are:

i. Update of actuarial assessments, including Pension / General Provident Fund liabilities at 30.06.10.
ii. Reporting of Pension and GPF Schemes in line with IPSAS 25, for the year 2009-10.
iii. Report on test of accessibility and accuracy of the payroll, pension and GP Fund records on the SAP R/3 system.

This Report addresses Part (i) and Part (ii) of the above summary of Terms of Reference of Contract mentioned above. Part (iii) of the above summary will be presented as a separate report.

This report also highlights the sources of data and the anomalies in the available data. The government adopted the funding strategy recommended in the 2009 valuation report, to partly fund the liabilities of pension and GP Fund. The report also provides the revised projections under the funding option adopted by the government for Punjab Pension Fund and General Provident Fund.

The Report is split into the following four chapters:

i. Government of Punjab Pension Scheme
ii. Government of Punjab General Provident Fund Scheme
iii. Funding Strategy
iv. International Public Sector Accounting Standard 25 for Punjab Government Pension & General Provident Fund Schemes.

MAIN REPORT

CHAPTER 1
Government of Punjab Pension Scheme

1.1 Introduction

Government of Punjab Pension Scheme is a defined benefit scheme, where the final pension benefit is calculated on last drawn salary and service rendered by the Punjab Government Employees.

This chapter gives details on the accrued liability of Government of Punjab Pension Scheme and the expected future cash-outflows for this scheme. Details of the sources of data and data analysis are also part of this chapter.

1.2 Data

1.2.1 Data Sources

Data / information for estimating the accrued pension liability and future cash outflows was provided by the Accountant General (AG) Office and the Finance Department of Government of Punjab. The following are the details of the data / information obtained from each of the sources:

Accountant General (AG) Office

Active Employees

The AG Office provided data for active employees of Lahore District only. The information was made available for 199,768 active employees (including 48,367 repetitive entries) in MS Excel. Each entry of an employee contained fields including:

i. name of employee,
ii. date of birth, date of appointment,
iii. pensionable salary (including details of different components),
iv. grade; and
v. other relevant information.

Pensioners

The AG Office provided the data for pensioners as at 30th June 2010. The information was made available for 344,315 pensioners in MS Excel.

The information provided included the following fields:

i. date of birth,
ii. date of appointment,
iii. date of death etc.
iv. net pension amount at the time of cessation of service.

AG Office intimated that total number of pensioners as at 30th June 2010 is 436,995.

We wish to highlight that dataset provided in 2010 is significantly greater than the data available in 2009 for both actives employees and pensioners. This can be seen from the following comparison:

	2010	2009
No. of Active Employees for whom information was available	**151,401***	**96,536**
No. of Retirees for whom information was available	**344,315**	**44,477**

*** 199,768 total records less 48,367 repetitive entries**

Pension Payout

The following information was provided by AG Office for total pension payout for the year 2009-10 (split by pension and commutation payments) for actuarial valuation of Pension Scheme:

(Rs. Billion)

Description	2009-10
Pension	18.726
Commutation	5.900
TOTAL	**24.626**

Finance Department (FD) of Government of Punjab

The FD of GoPb provided information of the total sanctioned posts for each Grade (1 to 22) as at 30.06.2010. Total sanctioned posts for 2010 are 1,029,646.

1.2.2 Data Analysis

Data provided by the AG office was analysed for its reasonableness to qualify its appropriateness for the exercise, and to develop confidence in the valuation results. This section provides a commentary on the reasonableness checks adopted, the anomalies found in the data, and summarises the number of records discarded for each anomaly identified in all data sources.

Anomalies found in active employees and pensioner's data are as follows:

Anomalies in Active Employees Data

The format of information provided for active employees was different as compared to the last exercise conducted. The pensionable salary was broken down into its components such as basic pay, special pay etc., with each component being represented as a unique data entry. 48,367 such repetitive entries were removed. The remaining 151,401 were analyzed for anomalies.

A number of anomalies were found in the remaining data for active employees some of which are highlighted below. A table at the end summarizes the number of records removed for each anomaly identified. It was deemed more appropriate to delete an incorrect record rather than making an adjustment to the data, since a wrong adjustment would distort the characteristics of active employee's population, and thus the accrued liability and cash flow projections.

Incorrect Date of Appointment and/or Birth: A few entries were found where the dates of appointment and/or birth were missing or could not be understood. These entries were discarded since they could not be used for any calculations.

Age at Appointment less than 15 and greater than 45: Age of employees at the time of appointment was calculated from the information provided in the data. Records with age at appointment less than 15 and greater than 45 were discarded, since individuals are highly unlikely to be hired at such ages.

Dummy Entries: A fairly large number of records were found with the same date of birth and/or date of appointment. These date of births and/or appointments were distributed equally between all basic pay scales but showed inconsistencies with other fields of the same record. These entries, referred to as "dummy entries", were deleted for the purpose of this exercise. Such dummy entries may exist when the data feeder may not be able to read certain pieces of information from the hard copy, and decides to enter one value for the information he/she is unable to read clearly. As mentioned earlier, such entries would give a distorted picture of the population characteristics.

Age is greater than 60 years: GoPb has a normal retirement age (NRA) of 60 years. Therefore, records with age greater than 60 were discarded on the assumption that the date of birth of these records was incorrect.

Other Anomalies: Some other checks to validate a record were performed, such as date of appointment should be less than date of retirement, basic pay should be at least Rs. 2,500 since minimum basic pay of grade 1 employees is Rs. 2,500 where salary increases take place with change of a grade. Entries that failed to pass these checks were qualified as incorrect and discarded.

The following table provides a summary of each type of anomaly and the number of records discarded:

Type of Anomaly	No. of Records
Incorrect Salary	1,057
Basic Pay Scale was Zero	39
Basic Pay less than 2,500	18,603
DOA was 00/00/0000 or Missing	606
DOB was 00/00/0000 or Missing	3
Age less than 20 Years with Past Service	86
Age greater than 60 Years	11,711
Dummy DOB (01/08/1984) and DOA (01/01/2003)	5,731
Dummy DOB (01/08/1984)	297
Dummy DOA (01/01/2003)	16,737
DOB equal to DOA	23
Age at Appointment less than 15 years	32
Age at Appointment is more than 45 years	363
Service less than Zero	45
Records Discarded	**55,333**
Repetitive Entries for Different Components of Pensionable Salary Removed	**48,367**
TOTAL RECORDS USED	**96,068**

For the data provided in 2009, 38% of the data was discarded due to anomalies found in the data. This has dropped marginally to 37% for the data provided in 2010.

Anomalies in Pensioners Data

A number of anomalies were found in the data for pensioners highlighted below. A table at the end summarizes the number of records removed for each anomaly identified. It was deemed more appropriate to delete an incorrect record rather than making an adjustment to the data, since a wrong adjustment would distort the characteristics of pensioners' population, and thus the accrued liability and cash flow projections.

Incorrect entries: Records with missing or incorrect fields important for valuation such as:

- date of birth,
- pension at the time of retirement etc.

were deleted.

Incorrect Beneficiary: A check was performed on records to see if the pensioner status matched with the beneficiary type. There were a number of entries that showed pensioner as the beneficiary where date of death and status as dead were provided. There was lack of confidence in such entries and hence were deleted.

Incorrect Date of Appointment, Date of Retirement, Date of Birth or Date of Death:
Total service at the time of retirement of each retiree was calculated from the information available. Records with a total service at the time of retirement being less than 10 years were discarded. As per the rules of the pension scheme, an active employee has to complete a minimum of 10 years of service to qualify for a pension benefit.

On further analysis, some records had a highly unlikely age of greater than 108. Therefore, a minimum benchmark for each pensioner's age was determined according to the category of the pensioner (for instance, for family pensioners, a lower benchmark was set because it was unclear from the data if the date of birth pertains to the pensioner or beneficiary). Any record not falling in the above set range was discarded.

Also, some records showed a pensioner as a “Normal Retiree” while the status was “Dead”. A check was carried out to see if the death took place after retirement since for a case of death during service, the pensioner should fall into the category of “Family Retiree”. A few records were found to have this anomaly, and since no appropriate adjustment could be made, these records were discarded.

The following table provides a summary of each type of anomaly and the number of records discarded:

Pensioners Data

Type of Anomaly	No. of Records
Pension Type and Pensioners Status did not match	6,729
Service at Date of Retirement/Death was less than 10 years	1,269
Incorrect Date of Appointment	50
Age Greater than 108	26
Date of Death earlier than Date of Retirement	241
Age at ret. <60 & total service<25 & not on medical grounds	23,806
Missing Pension	77,571
Dummy Entries	1,419
Duplicate entries	8
Incorrect Type	11,991
Incorrect Date of Retirement	1
Incorrect Pension	25,783
Total Discarded Data	**148,922**
Total Original Data	344,315
Final Data Used	**195,393**

For the data provided in 2009, 4% of the data was discarded due to anomalies found in the data. This has increased to 43% for the data provided in 2010. However, the size of the final data used in 2010 is reasonably greater than that used in 2009, which improves our level of confidence in the data.

We wish to highlight that the anomalies and errors in active and pensioners data are being analyzed in greater depth and will be given in a separate report under the Terms of Reference 5 (vi) of this contract [i.e. Report on test of accessibility and accuracy of the payroll, pension and GP Fund records on the SAP R/3 system].

1.2.3 Data Summary

This section provides summary statistics of active employees' and pensioners' data after removal of anomalies as described in the earlier section. It also provides commentary on any visible trends found in the remaining data of active employees and data for pensioners.

Active Employees

The following table provides summary of the cleaned data of active employees (i.e. data used for valuation and cash flow projections):

Grade	Number	Average Pensionable Pay	Average Age	Average Past Service
1	3,964	3,185	32	7
2	11,610	4,588	40	15
3	1,756	5,418	45	21
4	1,337	4,622	39	14
5	31,046	5,075	34	10
6	1,448	6,095	44	19
7	8,811	6,055	38	14
8	590	6,705	48	24
9	8,536	6,934	40	16
10	757	8,858	51	28
11	1,714	7,096	42	18
12	1,518	6,234	39	16
13	350	6,274	51	29
14	8,904	8,496	38	14
15	1,068	11,910	46	22
16	4,748	11,280	41	16
17	4,484	17,891	43	16
18	2,153	26,353	49	22
19	951	33,249	53	26
20	274	38,913	54	26
21	44	47,076	56	29
22	5	57,111	57	32
Total	**96,068**	**14,974**	**38**	**14**

Government of Punjab has been hiring many individuals on a contract basis. These contract employees were not entitled to any post-retirement benefits and are therefore not included as part of the earlier actuarial valuations of pension liability.

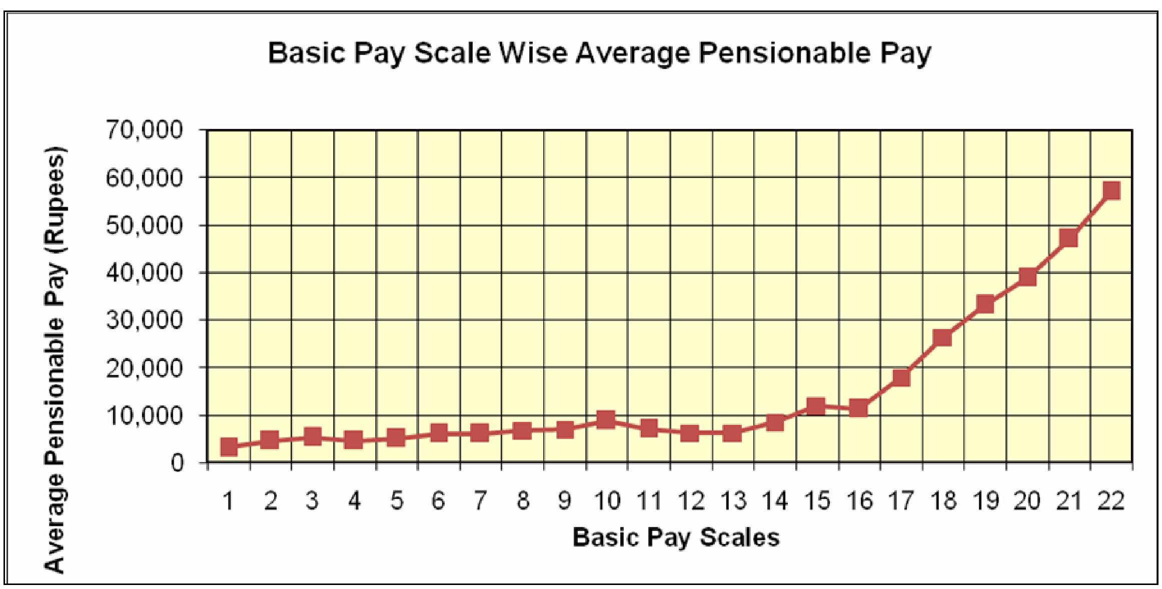
During the year 2009-10, all of the contract employees were regularized. As per our discussion with AG Office personnel, total number of these regularized employees is approximately 125,000. The effective date of appointment for pensionable service of the regularized contract employees starts from their date of regularization. Consequently, these employees do not carry any past service pension liability. The data provided by the

AG Office for Lahore District Active Employees does not segregate these newly regularized employees. It has been assumed that the data provided includes the proportionate number of these employees regularized and thus is a true representative of the population. In order to test these assumptions, some statistics were compared with 2009 data, which are as follows:

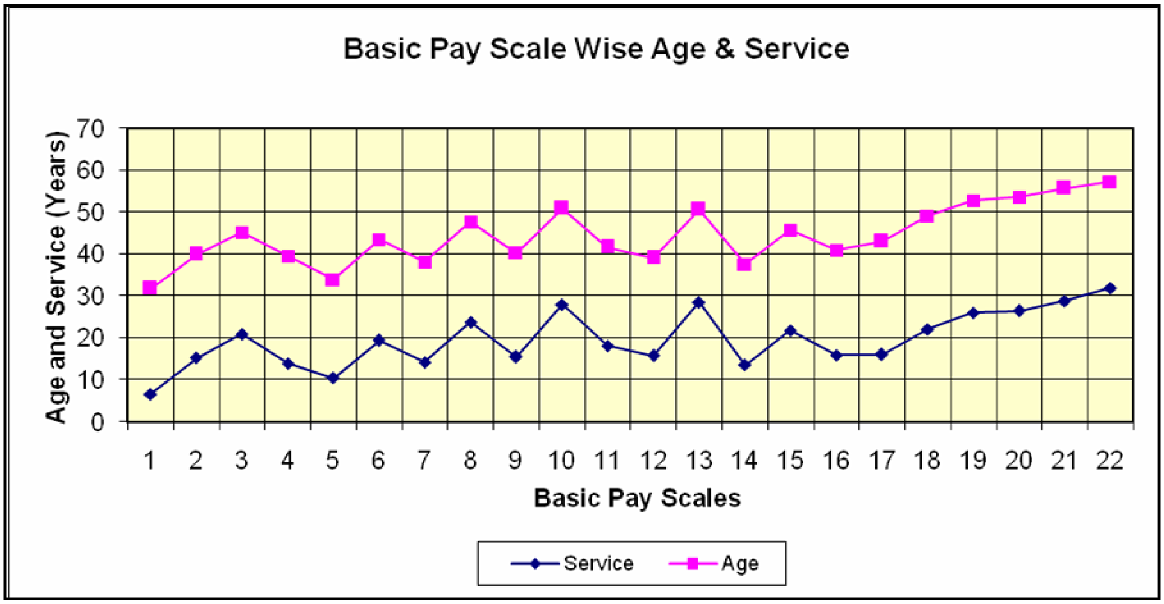
	2010	2009
Average Age	37.5	38.3
Average Past Service	14.0	14.0
Average Pensionable Salary	7,479	8,065

As can be seen, there is a drop in the average age and average pensionable salary. This is only possible if the sample includes a fair representation of contract employees (who expected to have lower average age and average pensionable salary as compared to remaining group of active employees).

The following graph summarizes the distribution of average pensionable pay as per the basic pay scale:

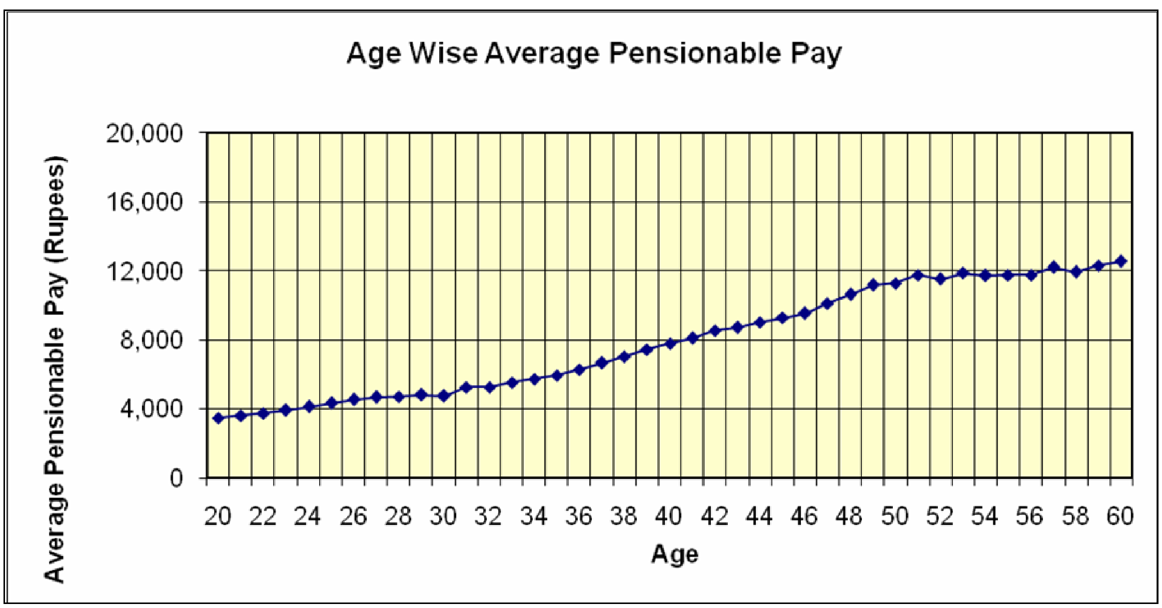


Basic pay scale wise average age and average past service are provided in graphs below:



The basic pay scale wise average age and past service does not show any unusual trends.

Age wise average basic pay is provided in the graph below:



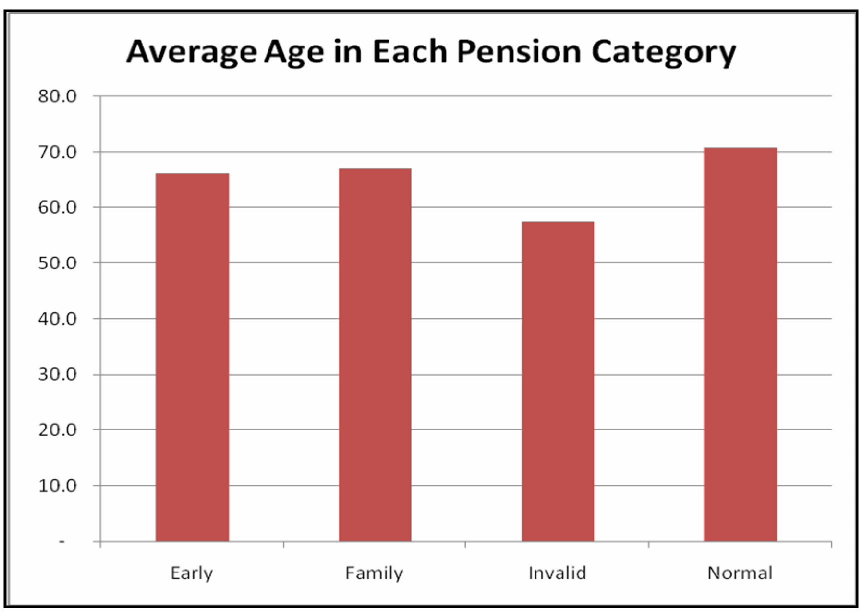
The average salary increases with the age of the employee which is a very much expected pattern.

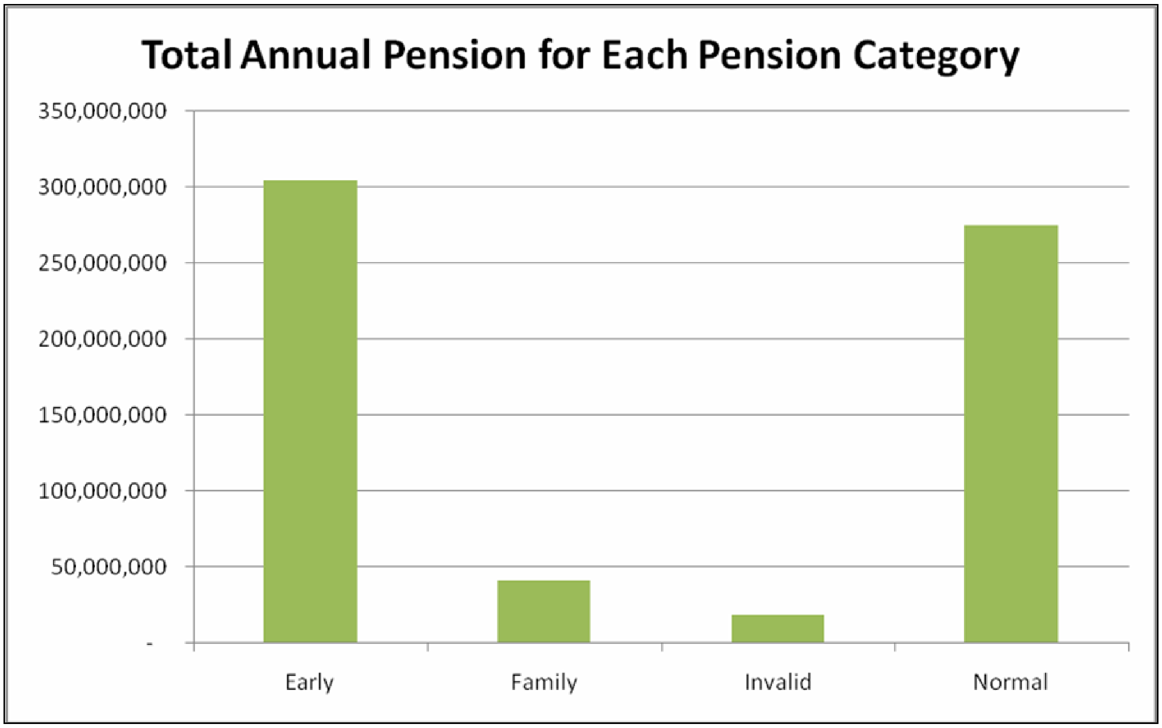
Detailed tables and figures related to these graphs regarding data of active employees is provided in Appendix I.

Pensioners Data

Age wise details for each category (normal, early, invalid and family) of retirees are provided in the Appendix IV. The following tables and graphs shows the summary of the data of Pensioners after removal of anomalies used for the valuation:

Pension Category	Average Age	Total Gross Annual Pension (Rs.)
Normal	70.8	275,064,465
Early	66.2	304,310,123
Invalid	57.5	17,788,990
Family	70.8	41,045,405
Total		**638,204,984**





Analysis of data shows that the distribution of family pensioners has the longest tail because of two main reasons. One, that family begins to receive pension after the employee has received pension for several years. Secondly, because most of the workforce of Punjab Government comprises of males and family pensioners are mostly females and females have a longer life expectancy than males.

Invalid pensioners become eligible for invalid pension during service; their distribution is concentrated more at lower ages in comparison to other categories and has relatively shorter tail because of having low life expectancy.

1.3 Valuation & Cash-flow Projection Assumptions

Actuarial Assumptions are an enterprise's best estimates of the variables that will determine the cost of providing post-employment benefits. Actuarial Assumptions generally comprise of financial assumptions and demographic assumptions.

Financial assumptions about future economic variables have an effect on the real value of money. The key components, for an actuarial valuation conducted to determine the financial implication to fund a Pension scheme, are:

- Net Rate of Return on the Fund
- Expected Increase in Eligible Salary
- Expected Increase in Pension
- Expenses of Management of Pension Scheme/Fund

Demographic assumptions about future characteristics of current and former employees (and their dependants) those are eligible for benefits were used. The key components of these demographic assumptions are:

- Mortality assumptions
- Employee turnover, disability and early retirement assumptions

For the purposes of the actuarial valuation of Punjab Government pension Scheme, the following assumptions have been used:

i. Net Rate of Return on the Pension Fund

The assets of a Pension Fund are invested in secure instruments to ensure future benefit payments when they fall due. The instruments, available for the investment of employee benefit funds as at the valuation date, were generally yielding 11% – 13% per annum.

Taking into account the volatility of economic environment prevailing as at June 30, 2010, it had been assumed that the average long term net rate of return on the Fund (inclusive of both the invested and the un-invested portions) will be 12% per annum (compounded).

ii. Expected Increase in Eligible (Pensionable) Salary

An estimate of future salary increases takes account of inflation, seniority, promotion and other relevant factors, such as supply and demand in the employment market. It had been assumed that salaries would increase at 11% per annum in future.

The net rate of return on the Fund and the rate of increase in the Eligible Salary are usually inter-related since during periods of inflation, both tend to rise in conformity with each other. From an actuarial costing point of view, it is the difference between these two rates that matters, and not their individual values in isolation.

Thus a difference of 1% between the long-term rate of return on the proposed Fund assets (i.e. 12%) and the long-term rate of increase in Eligible Salary (i.e. 11%) had been considered appropriate. Such an assumption is within the internationally and locally recognised norms.

iii. Pension Indexation

The indexation of pension has been assumed at the rate of 8% per annum. This was based upon past history of average indexation provided by the government from time to time and a certain percentage (generally varies from 70% to 100% of CPI) of long term future expected inflation.

iv. Rate of Inflation

Future long-term Rate of Inflation has been assumed at 10% per annum as at the valuation date. This results in long-term real return of 2% and real salary increase of 1%.

We would like to emphasize that the assumptions about inflation rate and real return reflect long-term expectation as per generally accepted actuarial standards and should not be used directly in setting investment policy objectives.

v. Expenses of Management

It had been assumed that the expenses for management of Pension Scheme would be borne by Punjab Pension Fund, and the net rate of return of 12% is assumed after taking into account these expenses.

vi. Expected Mortality Experience

It had been assumed that the mortality of the employees in active service and pensioners will be according to LIC 96-98a Mortality Table.

vii. Expected rates of Withdrawal/Ill-health/Retirement

The Employee Turnover, Disability and Early Retirement Rates are based on the experience of public-sector employee benefit schemes in Pakistan. (as given in Appendix V of the Report). These rates were used in the valuation conducted in year 2009.

The current valuation has been conducted on two early retirement assumptions, normal and NIL. For the case of NIL Early Retirement, the Employee Turnover and Disability Rates have not been changed. The rationale behind using NIL assumption is that the current recessionary environment and high inflation (which is generally expected to continue in foreseeable future) has significantly reduced the number of Early Retirements.

However, if the economic conditions return to normalcy at some time in future, the early retirements may pick up again. Therefore, two set of results have been provided for the valuation of accrued liability, based on NIL early retirement rates and normal early retirement rates.

Cash flow projections assume NIL early retirements.

viii. Nature of Group

Cash-flow projections have been conducted based upon an open group.

Total population of active employees has been assumed to increase by 1% every year. This assumption is based on the factor that the human resource requirements of Punjab Government would remain the same. Consequently the employee strength of the Government would remain in the existing range or increase at a nominal rate in future.

New entrants are assumed to enter the workforce uniformly every year, at ages 21 to 30.

Total number of new entrants are determined using the following formula:
"1%(Total population of active employees at the beginning of the year) + (total number of decrements)"*

ix. Benefit Structure

Government of Punjab has announced the following benefit changes w.e.f. 01.07.2010:

i. Increase in the rate of Family Pension from 50% to 75% of gross and net pension.
ii. Increase in minimum pension from Rs.2,000 per month to Rs.3,000 per month. Minimum family pension has been increased from Rs.1,000 per month to Rs.2,250.

These benefit changes were announced through annual budget for 2010-11 during June 2010 but effective from 01.07.2010. Therefore it was considered appropriate to reflect the liability based upon the revised benefit. As such, it has been assumed that the changes made in the 2010 budget will be effective from 30.06.2010.

It has been assumed that the current benefit structure will not change for the period for which the cash-flow projections have been made.

Over all, there has been no change in the assumptions for 2010 valuation, as compared to 2009.

1.4 Actuarial Valuation Method

The basic purpose of an Actuarial Valuation is to project the likely level of the emerging liabilities under a Pension Scheme and to recommend a plan for contributions that will enable the Pension Fund to accumulate sufficient assets for meeting these liabilities. The solvency level of a Pension Fund is generally monitored on a regular basis, particularly if the economic parameters controlling the financial health of the Fund change over time.

The liabilities of a Pension Scheme are long term, consequently the funds required to meet these liabilities can be accumulated over a longer period. In assessing the adequacy of the contribution rate, it is necessary to make projections to determine the levels of the liabilities and the accumulating assets.

To assess the expected liabilities of the Pension Scheme of Punjab Government, the Projected Unit Credit Method has been used.

Projected Unit Credit Method

The Projected Unit Credit (PUC) method is considered as an appropriate actuarial technique to determine the post-employment benefits (such as pension schemes) for large (open) groups in which employees exist and enter on regular basis. PUC is a mandated actuarial technique under International Public Sector Accounting Standard 25 (IPSAS 25). This method determines the liabilities by projecting service/salaries of the employees and then discounting the relevant costs as at the valuation date. Past service cost is calculated by associating the portion of total liability attributable to the service rendered on a pro-rata basis. The regular annual cost (called normal cost) is the liability attributable to one year determined on similar lines.

In a Pension Fund, the required contribution by the employer is dependent upon the age and service profile of the employees. As the time of ultimate benefit payoff comes closer, these factors increase in proportion to each other.

The funding of a Pension Scheme is divided into Past Service Cost and Future Service Cost. The Past Service Cost can be met either by making one lump sum payment to the Scheme or by amortising them over a certain specified period (a fixed number of years or the future working lifetime of the employees). The Future Service Cost is met by way of contributions, as a percentage of pay, to the Scheme. For new employees becoming members of the Scheme, there is no Past Service Cost, and contribution rate is specified such that it is adequate to finance the future benefits payable to such employees.

1.5 Methodology Used for Data Preparation

This section explains the methodology used to prepare the data for calculation of the total accrued pension liability and cash flow projections.

For active employees, at every integer age from 20 to 59 (inclusive) total annual salary and average past service were required for the total population.

For pensioners, at every age, total annual pension amounts for each category were required.

The data provided was a sample of the total population of active employees and pensioners. To estimate the total cash flows and accrued liability of the Pension Fund, this data was mapped on to the total population using the following assumptions and methodology:

Active Employees

Total number of sanctioned posts in the Punjab province as provided by the Government of Punjab stands at 1,091,292 as at 30.06.2010. However, the exact number of employees actually hired was not available with the Govt. of Punjab. For this purpose, the number of actual employees were estimated from a similar piece of information provided to us for the earlier exercise conducted in 2003 (see attached Appendix II). The ratio of actual employees to sanctioned posts in 2003 was around 0.86:1 (including contract employees) and the same ratio was applied on the current sanctioned posts to estimate the actual number of employees as in 2010. This estimate came out to be 938,511.

During the year 2009-10, all of the contract employees numbering approximately 125,000 were regularized. Thus contrary to earlier valuations, no further reduction was applied to account for the contract employees (who are not eligible for pension benefits). As given earlier in the Report, data for Lahore District Active Employees as provided by AG Office is assumed to contain a proportionate number of contract employees regularized and is assumed to be a true representative of the population.

Thus, the estimate of 938,511 active employees, with their total annual salary of Rs. 84,299,906,692 was used for the purpose of this Report.

Age-wise distribution of the sample was calculated and assuming that the sample is a true representative of the total population, the same distribution was applied to the above estimate of active population to attain the total number of employees at each age.

Similar exercise was repeated to estimate the past service and average annual salary at each age.

Pensioners

To estimate the pension liability and cash flow projections, the total annual pension payout by age for each category was required. The pension amounts given in sample data were those as calculated at the time of retirement of the pensioner or the death of the employee, rather than the current pension payments (as per the indexation increases announced by GoPb from time to time). An indexation table was used to calculate factors to determine the pension amount being received by the pensioner as at 30.06.10. The table was developed using the information from previous indexations announced by GoPb and is provided in Appendix III of the Report.

After conversion of the pension amounts, the total pension payout for the sample came out to be Rs.697,757,280. Given earlier in the report, total pension payout in the year 2009-10 was provided as Rs.18.726 billion. This increase announced for 2010-11 is 20% for pensioners retiring before 01.12.2001 and 15% retiring thereafter. The effective increase amounted to approximately 18%. This Report, while determining the liability of pensioners, assumes that the above indexation announced w.e.f. 01.07.2010 will be effective from 30.06.2010.

The ratio of the total pension payout in 2009-10 and the total of the sample data were then calculated. This ratio was then multiplied with the total pension calculated for each age after indexation to calculate the total pension payout for each age.

We have an adequate comfort level on the data provided for active employees and pensioners for the purpose of calculation GoPb Pension Scheme liabilities, due to the following reasons:

1. **The data sets used for the valuation are of reasonable size and significantly larger than that used in the 2009 valuation. This should reduce the bias in the data.**
2. **The distributions of the data for active employees and pensioners are consistent with the general expectations and with the distributions of the data used in 2009 valuation.**
3. **An aggregate base has been used to estimate the liability of both active employees and pensioners (such as total number of active employees and aggregate pension payout in 2009-10). The samples were used only to estimate the age-wise distribution of active employees and pensioners.**

1.6 Valuation Results

Results – Assuming NIL Early Retirements

The valuation results of Government of Punjab Pension Scheme as at 30.06.2010, based on the **NIL** early retirement assumption and other assumptions as stated earlier, and comparison with 30.06.2009 is as follows:

	Valuation Result (30.06.2010) (Rs. billion)	**Valuation Result (30.06.2009)** (Rs. billion)
Accrued Liability on account of : a) Active Employees b) Pensioners	 401.9 285.8	 391.7 206.0
Total Liability	**687.7**	**597.6**
Required Contribution Rate, as %age of Eligible Salaries, to fund ***Future Accrual*** of Benefits	23.5%	24.4%

The results reflect that the past service accrued Pension liability of in-service active employees is **Rs.401.9 billion** and the present value of future Pension payments to existing Pensioners works out to **Rs.285.8 billion** as at 30.06.2010. The total accrued liability of Government of Punjab Pension Fund is **Rs.687.7 billion** as at June 30th 2010. The liability for active employees has increased relatively less due to a low 1.6% salary increase, while the pension liability has shown a much heavier increase due to an approximate indexation of 18%.

The rate of contribution required to fund only the future accrual of Pension benefits of active employees is **23.5%** of Pensionable Salary. This means that the expected Pension liability in the next year would increase with interest on the existing accrued liability of **Rs.687.7 billion** and an amount equal to **23.5%** of annual Pensionable Salary.

Contribution rate required to fund future accrual of benefit under NIL early retirement has dropped from 24.4% in 2009 to 23.5% in 2010. This drop was expected given the fact that approximately 125,000 contract employees were regularized during 2009-10 resulting in lowering of average age of the group.

Sensitivity Analysis

The extent of variation in valuation results have been analysed by changing economic assumptions as follows:

- Sensitivity I – increasing and decreasing the rate of growth in pensionable pay assumption from 11% to 12% and 10% per annum
- Sensitivity II - increasing and decreasing the interest rate assumption from 12% to 13% and 11% per annum

The results tabulated as follows:

<u>Sensitivity I</u>

	Valuation Result as at 30.06.2010 Rs. billion		
	Base	Base + 1%	Base - 1%
Rate of Increase in Pay	11%	12%	10%
Rate of Return	12%	12%	12%
Accrued Liability on account of : a) Active Employees b) Pensioners	 401.9 285.8	 442.1 285.8	 366.9 285.8
Total Liability	**687.7**	**727.9**	**652.7**
Percentage Increase/(Decrease) in Liability from Base	n/a	5.8%	(5.1%)

The above results show that the Pension liability of Punjab Government employees and pensioners varies within the range of -6% to 6% by changing the rate of salary increase assumption by 1% (one percentage point).

<u>Sensitivity II</u>

	Valuation Result as at 30.06.2010 Rs. billion		
	Base	Base + 1%	Base - 1%
Rate of Increase in Pay	11%	11%	11%
Rate of Return	12%	13%	11%
Accrued Liability on account of : a) Active Employees b) Pensioners	 401.9 285.8	 364.5 270.1	 445.8 303.4
Total Liability	**687.7**	**634.6**	**749.2**
Percentage Increase/(Decrease) in Liability from Base	n/a	(7.8%)	8.9%

The above results show that the Pension liability of Punjab Government employees and pensioners varies within the range of -8% to 9% by changing the rate of return assumption by 1% (one percentage point).

Results – Assuming Early Retirements based on Historical Pattern:

The valuation results as at 30.06.2010, in case early retirement assumption is made as per historical pattern, and comparison with 30.06.2009 is as follows:

	Valuation Result (30.06.2010) (Rs. billion)	**Valuation Result (30.06.2009)** (Rs. billion)
Accrued Liability on account of : a) Active Employees b) Pensioners	 432.3 285.8	 430.3 206.0
Total Liability	**718.1**	**636.3**
Required Contribution Rate, as %age of Eligible Salaries, to fund Future Accrual of Benefits	25.8%	27.10%

The above results reveal that early retirements have significant impact on the accrued Pension liability of the in-service active employees. The accrued liability of active employees as at 30.06.2010, based on early retirement rates, increases by 7.6% (from Rs.401.9 billion to Rs.432.3 billion). The rate required to fund only the future accrual of Pension benefits increases from 23.5% to 25.8% of Pensionable Salary reflecting an increase of 9.8%.

The above results show that the accrued and future Pension liability of active employees of Punjab Government is significantly sensitive to early retirement pattern of the employees. The reason is that employee can retire after completing 25 years of service and entitled an unreduced Pension payable immediately and can commute up to a maximum of 35% of his/her Pension at a significantly higher commutation rate as compared to normal retirement factor. Thus, it would be advisable to monitor the pattern of early retirements in future and modify the valuation results accordingly (if required).

Contribution rates under historic early retirement assumption have dropped from 27.1% in 2009 to 25.8% in 2010. This drop was expected given the fact that approximately 125,000 contract employees were regularized during 2009-10, resulting in lowering of average age of the group.

1.7 Sources of Gains/Losses During the Year

The Pension liability as at 30.06.2010 is in excess of the expected amount of liability for 2009-10, based on our valuation as of 30.06.2009. This expected liability for 2009-10 would be Rs.669.7 billion, calculated as follows:

1. Liability as at 30.06.2009	Rs.597.6 billion
2. Interest Cost	Rs.71.7 billion
3. Liability associated with service rendered during 2009-10	Rs.25.0 billion
4. Payments during 2009-10	Rs.24.6 billion
5. Estimated Liability for 2009-10 (1. + 2. + 3. – 4.)	**Rs.669.7 billion**

The liability calculated as at 30.06.2010 (i.e. Rs.687.7 billion) is in excess of Rs.18 billion from the estimated liability as above. The major sources of gains/losses during 2009-10 are as follows:

1. The Average Salary increase during the year was 1.6% against the assumption of 11% during 2009-10. This lower than assumed salary increase has generated gain during the year.
2. The new entrants during the year have a nominal amount of going-concern liability of as at 30.06.2010.
3. The Government has announced some benefit enhancements with effect from 01.07.2010. The actuarial valuation assumes that these benefit changes are

effective as at the valuation date of 30.06.2010. This has generated past service cost as at 30.06.2010.

4. The Government has announced Pension increases at the rate of 20% for those who have retired before 01.12.2001 and 15% for those who have retired on or after 01.12.2001. The average Pension increase assumption for 2009-10 was 8%. This excess Pension increase has generated loss during the year and consequently has increased the Pension liability as at 30.06.2010.

A break-up of the amounts of gains/losses from the above sources is tabulated below:

(Rs. Billions)

Active Employees				
Sources	**Past Service Cost**		**Actuarial (Gain)/Loss**	**Total Increase / (Decrease) in Liability**
	Vested	Non-vested		
Salary Increase			(35.5)	(35.5)
New Entrants			2.8	2.8
Benefit Changes	8.9	5.9		14.8
Total (Active Employees)	8.9	5.9	(32.7)	(17.9)
Pensioners				
Sources	**Past Service Cost**		**Actuarial (Gain)/Loss**	**Total Increase / (Decrease) in Liability**
	Vested	Non-vested		
Indexation			22.8	22.8
Benefit Changes	14.9			14.9
Total (Pensioners)	14.9		22.8	37.7
Grand Total (Active and Pensioners)				**19.8**

The net additional liability from above gains and losses is Rs.19.8 billion is in excess of expectation of Rs.18 billion by Rs.1.8 billion. This excess gain has been caused by some other sources such as change in distribution etc. during the year.

1.8 Cash Flow Projections

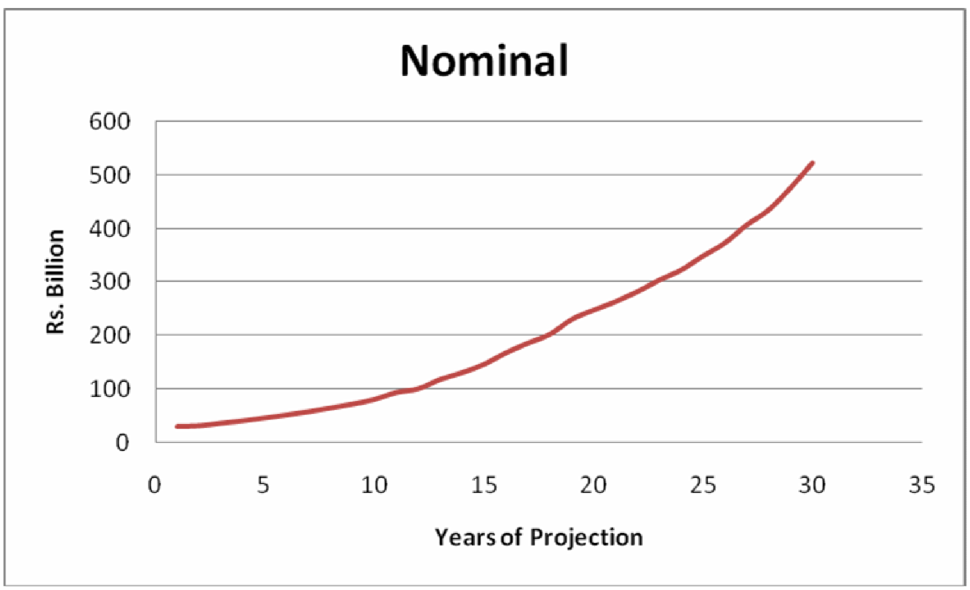
The expected pension payments split by regular pension and commutation over the next 30 years under Punjab Government Pension Scheme have been estimated on a combined basis for both active employees in conjunction with existing pensioners.

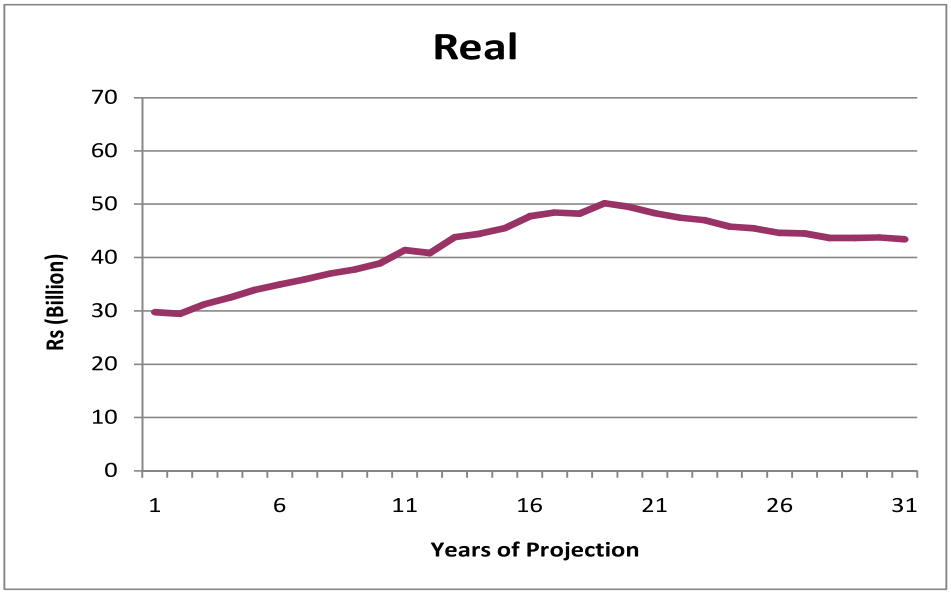
The following table shows the cash-flow projections on a real and nominal basis assuming NIL early retirements:

			Total Expense			
			on Nominal Basis		on Real Basis	
Year	**Expected Pension**	**Expected Commutation**	**Expense**	**Y to Y % Increase**	**Expense**	**Y to Y % Increase**
2010 - 11	23.7	6.0	29.7	21%	29.7	21%
2011 - 12	26.0	5.3	31.3	5%	29.5	-1%
2012 - 13	29.1	6.9	36.0	15%	31.2	6%
2013 - 14	32.4	8.2	40.6	13%	32.5	4%
2014 - 15	36.3	9.7	46.0	13%	33.9	4%
2015 - 16	40.5	11.0	51.5	12%	34.9	3%
2016 - 17	45.2	12.4	57.6	12%	35.9	3%
2017 - 18	50.5	14.0	64.5	12%	36.9	3%
2018 - 19	56.2	15.5	71.7	11%	37.8	2%
2019 - 20	62.8	17.7	80.5	12%	38.9	3%
2020 - 21	70.9	22.6	93.5	16%	41.4	6%
2021 - 22	78.5	22.0	100.5	7%	40.8	-1%
2022 - 23	88.9	29.1	118.0	17%	43.8	7%
2023 - 24	99.4	31.2	130.6	11%	44.4	1%
2024 - 25	111.3	34.9	146.2	12%	45.5	2%
2025 - 26	125.5	42.3	167.8	15%	47.7	5%
2026 - 27	140.4	45.5	185.9	11%	48.4	1%
2027 - 28	155.9	46.4	202.3	9%	48.3	0%
2028 - 29	174.8	55.5	230.3	14%	50.2	4%
2029 - 30	193.2	54.6	247.8	8%	49.5	-1%
2030 - 31	211.7	51.9	263.6	6%	48.3	-2%

Year	Expected Pension	Expected Commutation	Expense	Y to Y % Increase	Expense	Y to Y % Increase
2031 - 32	231.4	50.8	282.2	7%	47.5	-2%
2032 - 33	252.4	51.8	304.2	8%	47.0	-1%
2033 - 34	273.6	49.3	322.9	6%	45.8	-2%
2034 - 35	297.0	52.3	349.3	8%	45.4	-1%
2035 - 36	321.2	52.5	373.7	7%	44.6	-2%
2036 - 37	348.4	59.0	407.4	9%	44.5	0%
2037 - 38	376.0	59.7	435.7	7%	43.7	-2%
2038 - 39	407.7	69.3	477.0	9%	43.7	0%
2039 - 40	442.8	80.9	523.7	11%	43.8	0%

The expected nominal pension cash flows increase by around 12% over the next 20 years.





It can be seen that there are no visible jumps in the total expected cash-flows in any year (under both nominal and real bases) and the amounts have a relatively smooth progression over time. For 2011-2012, the unusual increase of 21% is based upon the heavy pension indexation announced with effect from 01.07.2010.

The commutation payments over the next 30 years do have sudden changes on nominal basis. Commutation payments are one time expense and this pattern in percentage increases is mostly due to the distribution of the active employees determined from the given data (resulting in varying patterns of retirements in different years).

It needs to be noted that while there is significant increase in pension outgoes over the years on nominal basis, the increase on real basis is much slower, with pension amount increasing by around 4% per annum for the next 18 years and remaining virtually static thereafter.

It should also be noted that while there is no noticeable change in trends of cash flows as compared to 2009 projections, the absolute amount of regular pension outgo expected for

2010-11 has increased substantially due to the heavy indexation provided to pensioners with effect from July 01, 2010.

1.9 Medical Allowance

Govt. has introduced an additional Medical Allowance, as % of monthly pension, for pensioners with effect from July 1, 2010. The Medical Allowance will be provided as follows:

- Additional 25% of Pension as Medical Allowance for Pensioner who retire in BPS 1-15
- Additional 20% of Pension as Medical Allowance for Pensioner who retire in BPS 16+

This benefit is, however, in lieu of the reimbursement of medicine cost to the pensioners. As such, the additional Medical Allowance has not been considered as part of the Pension Scheme benefits. Therefore, the liability arriving from the introduction of Medical Allowance has not been taken into account while calculating the Pension Benefits liabilities provided in the previous section.

However, for the sake of illustration, we have calculated the past service liability and the rate, as % of Pensionable pay, required to fund future accrual of Medical Allowance benefits as at 30.06.2010. This is given as below:

	Valuation Result	
	Without Early Retirement Assumption (Rs. billion)	**Early Retirement Assumption** (Rs. billion)
Accrued Liability on account of : a) Active Employees b) Pensioners	 94.4 67.2	 101.5 67.2
Total Liability as at 30.06.2010	**161.6**	**168.7**
Rate, as %age of Pensionable Salaries, associated with Future Accrual of Benefits	5.5%	6.1%

The results in the above table mean that expected Medical Allowance Liability as at 30.06.2011 is approximately equal to the "Total Liability as at 30.06.2010" increased with 12% interest PLUS annual Pensionable Salary during the Year multiplied by the rate prescribed above (as % of Pensionable Salary).

1.10 Comments

The past service pension liability of active employees, accrued liability of pensioners as at 30.06.2010 and future required contribution rate are in the expected range on account of the following factors:

1. Rate of average increase in Pensionable Pay was 1.6% during 2009-10. **This low salary increase compared to the assumption of 11% has resulted in a GAIN reduced the pension liability of active employees by approximately Rs.35 billion.**

2. **The average rate of increase in Pensions is 18% against the assumption of 8%. The LOSS in accrued liability in pensioners' liability due to this source in Rs.23 billion approximately.**
3. The Pension benefits are revised with effect from July 1, 2010 but this Report assumes the effective date as 30.06.2010. The increase in Pension liability as at 30.06.2010 is Rs.30 billion approximately.
4. Approximately 125,000 contract employees were regularized during the year with date of regularization as appointment date and revised salaries (reasonably less than what they were drawing as contract employees) as per intimated by AG Office personnel. **This young group of employees low pensionable salary has been the main source of decrease in future required contribution rate**.

CHAPTER 2
Government of Punjab General Provident Fund Scheme

2.1 Introduction

General Provident (GP) Fund Scheme of Punjab Government is a defined contribution scheme in which employees are the sole contributors to their account balances according to the prescribed subscription rate which are based on pay scales of the employees. GoPb deducts these contributions from salaries and utilizes the amounts in meeting its expenditures. GoPb maintains a book entry for contribution by employees which is credited with an interest rate announced by the Government on an annual basis. The account balances are paid to employees at the time of cessation of their service. The Government does not provide a benefit as such to the employees and the money paid to the employees at the end of service is merely the payment of loan or debt based on the announced interest rates for various years. However, employees are entitled to withdraw loans / advances from their GP fund balances, prescribed by relevant rules.

This chapter gives details on the accrued liability of Government of Punjab General Provident Fund Scheme and the related expected future cash-outflows. Details of the sources of data, data analysis and suggestive measures to remove anomalies are also part of this chapter.

2.2 Data

2.2.1 Data Sources

Data / information for estimating the accrued GP Fund liability and future cash outflows was provided by the Accountant General (AG) Office. The following are the details of the data / information obtained:

Grade-wise Subscription Rates and Year-wise Interest Rates:

The information pertaining to grade-wise rate of subscription of GP Fund and year-wise rate of interests for the period from 1953 to 2010 was provided by the Accountant General (AG) Office. This information is summarised in the following tables:

Rates of subscription towards General Provident Fund effective from 1st September, 2008 vide circular letter no. Fdsr.1-2-1/95 dated 23-08-2008

Scale	Minimum	Maximum	Mean	Rate of monthly Subscription (Amount in Rs.)	Remarks	
B-1	2970	5670	4320	130	Minimum rates of subscription (on mean) will be as under:-	
B-2	3035	6035	4535	230		
B-3	3140	6740	4940	250	BPS	Subscription
B-4	3240	7440	5340	270	B-1	3.00%
B-5	3340	8140	5740	290	B-2-11	5%
B-6	3430	8680	6055	305	BS-12-22	8%
B-7	3530	9230	6380	320		
B-8	3665	9965	6815	340		
B-9	3820	10720	7270	365		
B-10	3955	11755	7855	395		
B-11	4115	12365	8240	415		
B-12	4355	13655	9005	720		
B-13	4645	14845	9745	780		
B-14	4920	16320	10620	850		
B-15	5220	17820	11520	925		
B-16	6060	20160	13110	1050		
B-17	9850	24650	17250	1380		
B-18	12910	31510	22210	1780		
B-19	19680	39080	29380	2350		
B-20	23345	44485	33915	2715		
B-21	25880	49680	37780	3025		
B-22	27680	55470	41575	3330		

Year-wise Interest Rates announced by the Government on GP Fund Balances

Year	Interest Rate %	Bonus %	Year	Interest Rate %	Bonus %
1953-1954	4.00	Nil	1981-1982	13.00	Nil
1954-1955	4.00	Nil	1982-1983	13.20	Nil
1955-1956	4.00	Nil	1983-1984	14.00	Nil
1956-1957	4.00	Nil	1984-1985	14.60	Nil
1957-1958	4.00	Nil	1985-1986	14.72	Nil
1958-1959	4.00	Nil	1986-1987	14.66	30
1959-1960	4.00	Nil	1987-1988	14.00	30
1960-1961	4.00	Nil	1988-1989	14.84	30
1961-1962	4.00	Nil	1989-1990	15.93	30
1962-1963	4.00	Nil	1990-1991	15.93	30
1963-1964	4.00	Nil	1991-1992	15.93	30
1964-1965	5.00	Nil	1992-1993	15.93	30
1965-1966	5.25	Nil	1993-1994	15.54	30
1966-1967	6.00	Nil	1994-1995	15.44	30
1967-1968	6.00	Nil	1995-1996	15.49	30
1968-1969	6.25	Nil	1996-1997	16.76	30
1969-1970	6.25	Nil	1997-1998	17.51	30
1970-1971	6.25	Nil	1998-1999	17.53	30
1971-1972	6.50	Nil	1999-2000	16.11	30
1972-1973	7.25	Nil	2000-2001	15.00	Nil
1973-1974	8.25	Nil	2001-2002	15.00	Nil
1974-1975	10.25	Nil	2002-2003	14.50	Nil
1975-1976	10.50	Nil	2003-2004	13.50	Nil
1976-1977	10.75	Nil	2004-2005	12.00	Nil
1977-1978	11.75	Nil	2005-2006	10.50	Nil
1978-1979	12.00	Nil	2006-2007	11.00	Nil
1979-1980	12.50	Nil	2007-2008	12.50	Nil
1980-1981	13.00	Nil	2008-2009	15.00	Nil
			2009-2010	14.00	Nil

AG office provided "Balances" and "Advances" of GP Fund of the employees of the following districts (separately for Provincial and District Government employees):

a. Lahore,
b. Bahawalpur,
c. Dera Ghazi Khan,
d. Faisalabad,
e. Gujranwala,
f. Multan,
g. Rawalpindi, and
h. Sargodha

A total of **390,826** data entries of the above 8 districts were provided from SAP/R3. Information received for each district is as follows:

District	Number of Records
Lahore	125,212
Bahawalpur	27,225
Dera Ghazi Khan	26,462
Faisalabad	60,358
Gujranwala	32,619
Multan	41,967
Rawalpindi	41,550
Sargodha	35,433
Total:	**390,826**

The data included the following fields:

- Personal #
- BPS
- Opening GPF balance

- Annual Subscription
- Adjustment in Advances
- Advances
- Advances Recovered
- Permanent Advances
- Closing GPF balances

However, there was no information of date of birth, date of appointment and Salary etc.

2.2.2 Data Analysis

The data received was analysed to check for any anomalies. Details of analysis and anomalies found are as follows:

Lahore District:

Information of **292** employees was discarded from GP Fund Balance records because of the following reasons:

Discarded due to	Number of Records
Duplicate Records	52
No name and Nil Balance	1
Negative or Extra Large Balance	239
Total:	**292**

The remaining **124,920** records from this data were available to estimate the GPF Liability. However, there was no information related to date of birth, date of appointment and salary in the above information.

Average Net GP Fund balance worked out to be **Rs. 85,639.**

Other Districts

Total records provided in this data were **265,614**. The anomalous records of **28,008** were discarded due to the following reasons:

Anomaly	Number of Records
Duplicate Records	11,541
Closing and or Opening Balance Less than Zero	1,828
All Balances Equal to Zero	12,301
Closing Balance greater than (For BPS>=16: 800,000 and for BPS<16: 500,000)	2,338
Total Discarded	**28,008**

The remaining records were **237,606**.

It was **not considered prudent** to use the provided information for “other than Lahore Districts” because the district wise average balances were significantly lower as compared to those provided for Lahore district earlier (**Rs. 85,639**) and were much lower than the expected range of Rs.75,000 –Rs.85,000. **It appeared that the accumulated GPF balances were not updated from the date of start of employment.**
Summary of the analysis is as follows:

District	Average GP Fund Balances
Bahawalpur	59,434
Dera Ghazi Khan	38,111
Faisalabad	59,692
Gujranwala	71,792
Multan	31,507
Rawalpindi	35,074
Sargodha	66,252

Thus, we conducted our GPF study to determine the underlying liability of the Government of Punjab and cash-flow projections on the Lahore district information as was done in 2009 valuation.

It should be noted that the data used for the current valuation is significantly larger than that used in the 2009 valuation.

2.3 Valuation Methodology & Assumptions

Methodology used for Data Preparation

The Net GPF Liability was estimated using the same methodology as used in 2009. For the purpose of estimating liability, the ratio of Net GPF Balance to Basic Salary of each employee was required. Since the information for Basic Salary was not available in the GPF data, the following methodology was adopted to prepare the data.

The Net GPF Balance information for Lahore District was matched with the **96,068** records of active employees (obtained for pension liability calculations). **14,472** records in the active employee data did not match with the GPF records and were therefore discarded. Thus, the remaining **81,596** records were available to calculate Net GPF Balance to Basic Salary ratio.

The liability was estimated using the following assumptions:

- the average pay for each past service band in the sample of **81,596** will remain the same for the total population of active employees **938,511**.
- the population will have the same percentage of loans from their GP Fund Balance as that of the sample.

The Net GP Fund balances for each past service band of **81,596** employees was enhanced to estimate the total liability of active employees population.

Since the 2 primary factors impacting the GP Fund Balance are the Basic Salary and Past Service, service-wise distribution of **81,596** employees with respect to their Basic Pay and total GPF Balance was prepared. The ratio of total Net GPF Balance and total Basic Salary was then determined for each service band of the distribution.

Sample Data Distribution							
Years of Service	**Number of Employees**	**Total Basic Salary**	**GPF/Basic Salary Ratio**	**Years of Service**	**Number of Employees**	**Total Basic Salary**	**GPF/Basic Salary Ratio**
> 0 & <= 1	336	1,525,211	0.76	> 23 & <= 24	2,736	28,649,895	14.36
> 1 & <= 2	1,594	6,949,517	1.23	> 24 & <= 25	1,445	17,687,119	14.51
> 2 & <= 3	4,312	18,042,939	1.92	> 25 & <= 26	1,573	18,622,443	14.36
> 3 & <= 4	6,638	31,241,715	3.28	> 26 & <= 27	1,196	15,086,864	13.86
> 4 & <= 5	4,051	17,488,556	3.38	> 27 & <= 28	945	12,163,683	14.50
> 5 & <= 6	3,315	15,117,418	4.08	> 28 & <= 29	870	10,820,810	15.22
> 6 & <= 7	3,388	18,194,111	8.38	> 29 & <= 30	849	11,303,811	16.25
> 7 & <= 8	14,409	116,649,489	18.35	> 30 & <= 31	612	8,235,611	14.98
> 8 & <= 9	894	4,973,480	5.78	> 31 & <= 32	522	7,859,282	18.06
> 9 & <= 10	1,449	7,894,745	7.15	> 32 & <= 33	365	5,918,855	18.32
> 10 & <= 11	656	5,018,324	7.86	> 33 & <= 34	565	9,226,433	18.01
> 11 & <= 12	2,087	13,047,684	8.31	> 34 & <= 35	509	8,072,465	20.44
> 12 & <= 13	1,851	13,182,257	10.09	> 35 & <= 36	325	5,055,495	18.19
> 13 & <= 14	1,801	14,411,592	10.03	> 36 & <= 37	264	4,214,762	19.09
> 14 & <= 15	2,226	18,491,270	9.64	> 37 & <= 38	128	2,206,648	23.26
> 15 & <= 16	1,524	11,645,074	11.29	> 38 & <= 39	80	1,310,340	23.71
> 16 & <= 17	3,611	26,400,382	10.79	> 39 & <= 40	39	561,855	16.63
> 17 & <= 18	2,640	20,400,790	10.57	> 40 & <= 41	21	285,525	22.57
> 18 & <= 19	480	5,275,587	11.11	> 41 & <= 42	18	294,070	27.94
> 19 & <= 20	4,219	35,674,030	12.37	> 42 & <= 43	5	87,400	18.34
> 20 & <= 21	2,958	27,451,928	11.41	> 43 & <= 44	-	-	0.00
> 21 & <= 22	1,575	17,753,794	12.48	> 44 & <= 45	-	-	0.00
> 22 & <= 23	2,515	30,717,590	13.87	**TOTAL:**	**81,596**	**645,210,849**	

Future Interest Rate on GP Fund Balances

For determining the future cash-flow projections related to GP Fund of Punjab Government employees, it has been assumed that average interest rate credited by the Government to GP Fund balances would be 12% per annum.

Growth Rate of Monthly GP Fund Subscription

Rate of Increase in Monthly GP Fund Subscription, for future cash-flow projections, has been assumed at the rate of 8% per annum.

Other Economic and Demographic Assumptions

For GP Fund cash-flow projections, all other economic and demographic assumptions such as rate of increase of future salaries, mortality and withdrawals rates etc. are same as used for Pension liability valuation and described in the previous Chapter.

2.4 Valuation Results

The following table shows the resulting Net GP Fund liability as at 30.06.2010 after applying the methodology explained earlier and the assumptions used:

Sample Data Distribution				Total Population	
Years of Service	**Number of Employees**	**Total Basic Salary**	**GPF/Basic Salary Ratio**	**Total Basic Pay**	**Total Net GPF Liability**
> 0 & <= 1	336	1,525,211	0.76	15,978,624	12,105,661
> 1 & <= 2	1,594	6,949,517	1.23	72,805,480	89,871,582
> 2 & <= 3	4,312	18,042,939	1.92	189,023,905	362,907,385
> 3 & <= 4	6,638	31,241,715	3.28	327,298,727	1,072,180,621
> 4 & <= 5	4,051	17,488,556	3.38	183,216,002	619,125,683
> 5 & <= 6	3,315	15,117,418	4.08	158,375,162	646,466,879
> 6 & <= 7	3,388	18,194,111	8.38	190,607,634	1,596,548,374
> 7 & <= 8	14,409	116,649,489	18.35	1,222,059,330	22,422,078,615
> 8 & <= 9	894	4,973,480	5.78	52,103,851	301,304,262
> 9 & <= 10	1,449	7,894,745	7.15	82,708,007	591,062,546
> 10 & <= 11	656	5,018,324	7.86	52,573,652	413,278,927
> 11 & <= 12	2,087	13,047,684	8.31	136,691,932	1,136,239,270
> 12 & <= 13	1,851	13,182,257	10.09	138,101,764	1,393,175,208
> 13 & <= 14	1,801	14,411,592	10.03	150,980,691	1,513,724,116
> 14 & <= 15	2,226	18,491,270	9.64	193,720,772	1,866,680,753
> 15 & <= 16	1,524	11,645,074	11.29	121,997,717	1,377,575,925
> 16 & <= 17	3,611	26,400,382	10.79	276,579,292	2,984,344,071
> 17 & <= 18	2,640	20,400,790	10.57	213,725,546	2,259,769,957
> 18 & <= 19	480	5,275,587	11.11	55,268,826	614,294,603
> 19 & <= 20	4,219	35,674,030	12.37	373,733,152	4,622,660,734
> 20 & <= 21	2,958	27,451,928	11.41	287,595,643	3,281,177,033
> 21 & <= 22	1,575	17,753,794	12.48	185,994,725	2,320,300,451
> 22 & <= 23	2,515	30,717,590	13.87	321,807,817	4,463,563,534
> 23 & <= 24	2,736	28,649,895	14.36	300,145,948	4,311,558,457
> 24 & <= 25	1,445	17,687,119	14.51	185,296,215	2,687,804,643
> 25 & <= 26	1,573	18,622,443	14.36	195,094,984	2,801,325,235
> 26 & <= 27	1,196	15,086,864	13.86	158,055,068	2,190,823,938
> 27 & <= 28	945	12,163,683	14.50	127,430,839	1,848,142,374
> 28 & <= 29	870	10,820,810	15.22	113,362,450	1,725,578,282
> 29 & <= 30	849	11,303,811	16.25	118,422,531	1,924,056,529
> 30 & <= 31	612	8,235,611	14.98	86,279,034	1,292,300,549
> 31 & <= 32	522	7,859,282	18.06	82,336,485	1,487,112,152
> 32 & <= 33	365	5,918,855	18.32	62,007,918	1,135,821,917
> 33 & <= 34	565	9,226,433	18.01	96,659,219	1,740,475,596

Sample Data Distribution				Total Population	
Years of Service	**Number of Employees**	**Total Basic Salary**	**GPF/Basic Salary Ratio**	**Total Basic Pay**	**Total Net GPF Liability**
> 34 & <= 35	509	8,072,465	20.44	84,569,862	1,728,648,029
> 35 & <= 36	325	5,055,495	18.19	52,963,068	963,520,563
> 36 & <= 37	264	4,214,762	19.09	44,155,266	843,043,465
> 37 & <= 38	128	2,206,648	23.26	23,117,588	537,795,561
> 38 & <= 39	80	1,310,340	23.71	13,727,563	325,451,352
> 39 & <= 40	39	561,855	16.63	5,886,182	97,893,536
> 40 & <= 41	21	285,525	22.57	2,991,256	67,525,200
> 41 & <= 42	18	294,070	27.94	3,080,776	86,062,324
> 42 & <= 43	5	87,400	18.34	915,632	16,792,002
> 43 & <= 44	-	-	0.00	-	-
> 44 & <= 45	-	-	0.00	-	-
TOTAL:	**81,596**	**645,210,849**		**6,759,446,135**	**83,772,167,894**

The estimate of total Net GP Fund Liability as at June 30, 2010 is Rs.83.772 billion compared to Rs. 79.185 billion as at June 30, 2009**.** However, there are outstanding GP Fund payments to employees leaving service during 2009-10. As per AG Punjab, these GPF payments were not made due to non availability of cash. The estimated amount of these outstanding payments is Rs.3.109 billion, thus making the total GPF liability **Rs. 86.881 billion.**

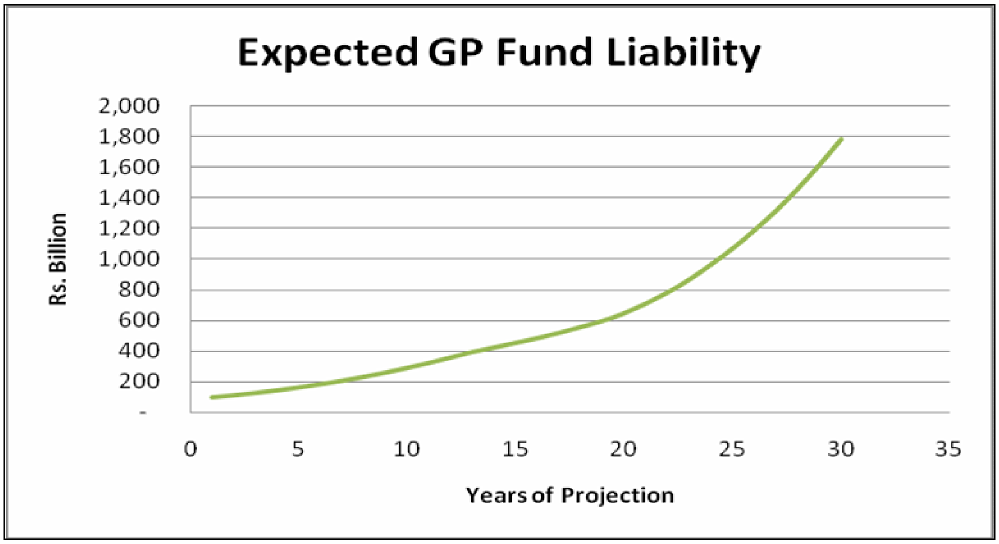
The growth in GP Fund balances (i.e. liability), assuming future interest credited is 12% per annum, for the next 30 years at 5 year intervals on nominal and real basis (assuming 2009-10 as the base year) is given the following table:

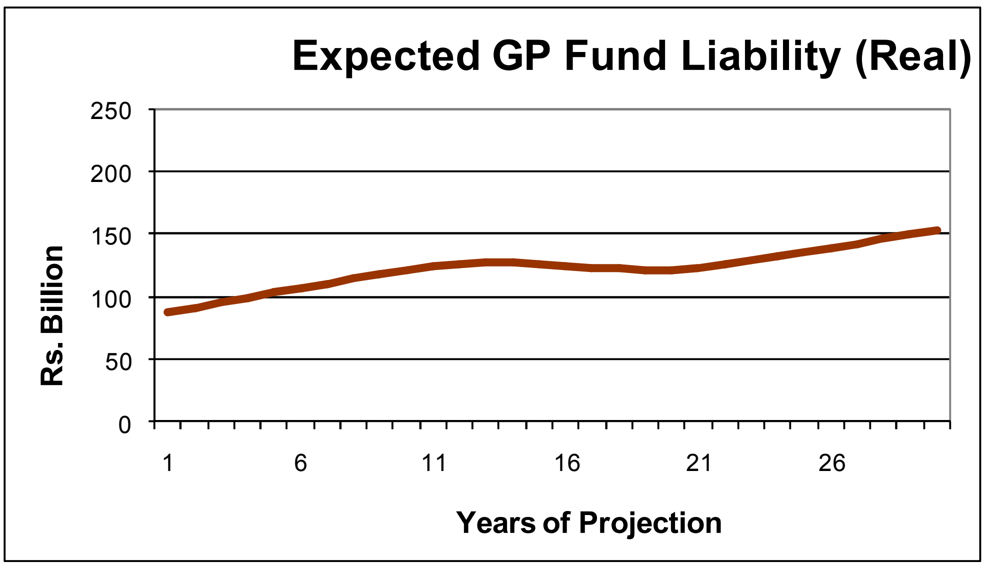
Year	Estimated GPF Liability at fiscal year End (Nominal Basis)	Estimated GPF Liability at fiscal year End (Real Basis)
2010 – 11	95.4	87.1
2013 – 14	141.5	99.0
2018 – 19	257.7	117.3
2023 – 24	421.8	126.8
2028 – 29	595.6	120.7
2033 – 34	964.9	132.0
2038 – 39	1617.7	149.6
2039 – 40	1,784.9	152.8

The above table shows that the amount of GP Fund liability on nominal basis would increase from Rs. **95.4 billion** in 2010-11 to Rs. **1,784.9 billion** in 2039-40. The liability is estimated to increase to Rs.152.8 billion in real terms in 2039-40.

An important fact to note is that the government is expected to consume approximately Rs. 5.4 billion of employees' money in 2010-11, which is projected to escalate over time.

The growth in GPF balances on nominal and real bases can be gauged from the following graphs:





Although, GP Fund liability tends to increase constantly on a nominal basis, but on a real basis it tends to stabilize and then slightly decline during the years 2023-24 to 2029-30.

Keeping in view the estimated GP Fund liability on the Punjab Government and its rapid growth in future (liability of **Rs. 1,784.9 billion** in 2039-40), it is strongly recommended that the Government should follow the adopted funding strategy to fund this debt. This methodology is to contribute all future subscriptions regularly to the recently set up GP Fund and amortize past service GP Fund liability.

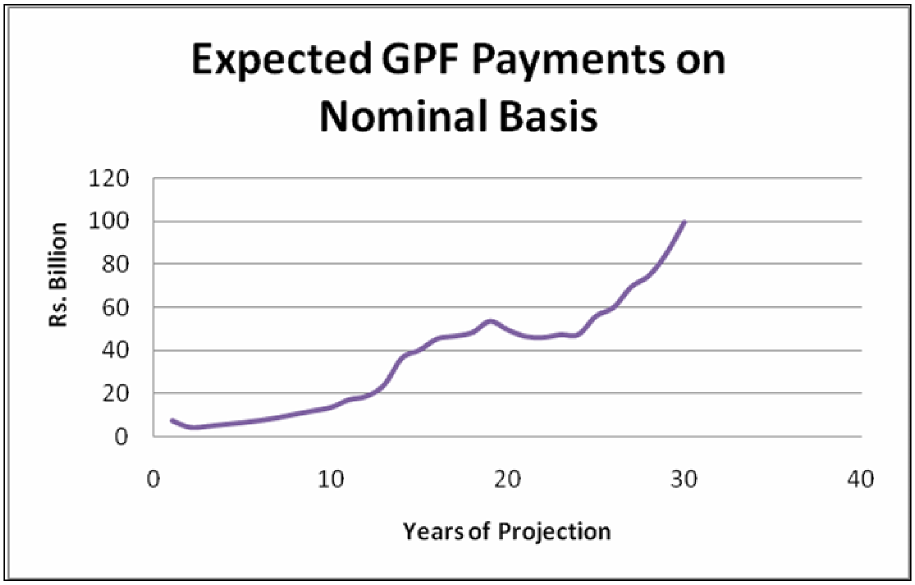
2.5 Cash Flow Projections

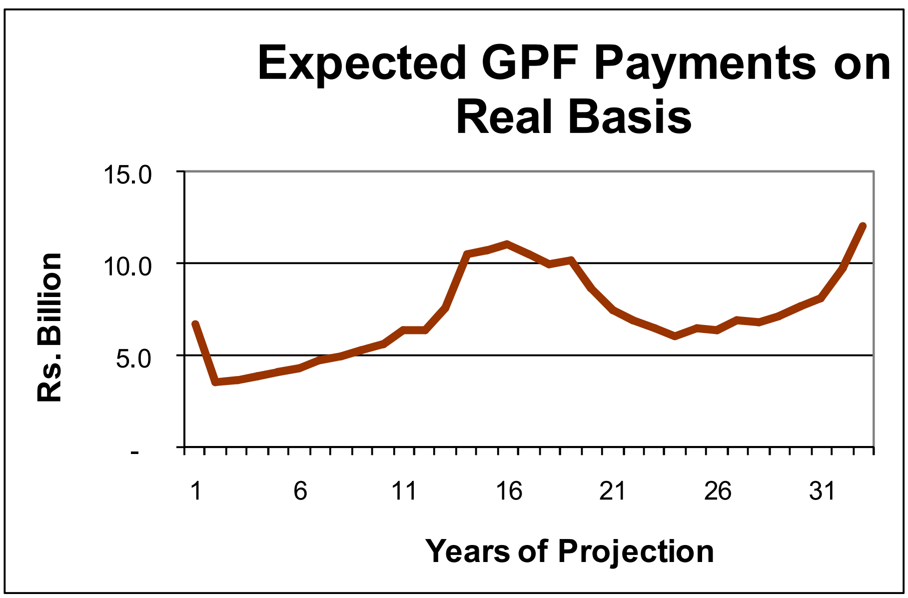
The following table shows the cash flow projections of the GP Fund over the next 30 years on a nominal and real basis:

	Total Expense			
	on Nominal Basis		on Real Basis	
Year	Expense	Y to Y % Increase	Expense	Y to Y % Increase
2010 - 11	7.3		6.7	
2011 - 12	4.2	-42%*	3.5	-48%*
2012 - 13	4.7	12%	3.6	3%
2013 - 14	5.6	19%	3.9	8%
2014 - 15	6.4	14%	4.1	5%
2015 - 16	7.4	16%	4.3	5%
2016 - 17	8.7	18%	4.7	9%
2017 - 18	10.4	20%	5.0	6%
2018 - 19	11.9	14%	5.3	6%
2019 - 20	13.5	13%	5.6	6%
2020 - 21	17.0	26%	6.4	14%
2021 - 22	18.6	9%	6.4	0%
2022 - 23	23.9	28%	7.6	19%
2023 - 24	36.3	52%	10.5	38%
2024 - 25	40.0	10%	10.7	2%
2025 - 26	45.3	13%	11.1	4%
2026 - 27	46.5	3%	10.5	-5%
2027 - 28	48.2	4%	10.0	-5%
2028 - 29	53.4	11%	10.2	2%
2029 - 30	49.4	-7%	8.7	-15%
2030 - 31	46.4	-6%	7.5	-14%
2031 - 32	45.9	-1%	6.9	-8%
2032 - 33	47.2	3%	6.5	-6%
2033 - 34	47.3	0%	6.0	-8%
2034 - 35	55.8	18%	6.5	8%
2035 - 36	59.9	7%	6.4	-2%
2036 - 37	69.4	16%	6.9	8%
2037 - 38	74.6	7%	6.8	-1%
2038 - 39	85.0	14%	7.1	4%
2039 - 40	99.3	17%	7.7	8%

* the drop is due to a one off Rs.3.1 billion outstanding payment expected in 2010-11

The following gives a graphical representation of cash flow projections over the next 30 years.





The above graphs show increase in GP Fund payments over the presented period of 30 years. There is a visibly rapid increase in GP Fund payments on nominal basis after which the payments have sudden dip in years 2029-30. Overall, even on real basis, the increase in GP Fund cash outflows is more significant than the increase in pension outgoes.

2.6 Comments

The GP Fund liability of Rs. 83.8 billion as at 30.06.2010 is less than the projected liability of Rs.89.8 billion estimated in the previous valuation as at 30.06.2009. The main reasons for this reduction are as follows:

1. Average GPF balance of Rs.85,639 in current valuation as compared to the expectation of Rs.97,850 as per the previous valuation.

2. Possible change in distribution of permanent employees from 2009 to 2010.

It is important to look more deeply into the records of other employees on sample basis and test the accuracy of record fed on SAP/R3. If found sufficiently credible, the liability should be appropriately updated in future valuations.

CHAPTER 3
Funding Strategy

3.1 General

On March 7, 2007, Government of Punjab setup a Pension Fund under the Punjab Pension Fund Act, 2007 (after approval from the Provincial Legislature). Funding of the Pension Fund is to be made through budgetary allocations. As at 30.06.09, the assets of the Pension Fund amount to **Rs. 3.5 billion**. The contributions amounting to **Rs.9.0 billion** were made during 2009-10. A payment of **Rs.1.8 billion** was made to the Pension Reserve Fund during 2009-10. The Government approved the legislation to set up a General Provident (GP) Fund during 2009-10.

The report on Actuarial Assessment of Pension and General Provident Fund as at 30.06.2009 provided various funding options for the Govt. of Punjab Pension Fund and General Provident (GP) Fund. The Punjab Pension Fund intimated (via email on February 9, 2010) that the Finance Department (FD) approved the Optimal Funding Strategy for Pension and General Provident Fund liabilities.

3.2 Objectives of Adopting Funding Strategy

The Government has adopted the funding strategy that was recommended as the Optimal Funding Strategy in the previous valuation report.

The funding strategy was adopted in view of:

- the expected cash-flow projections and associated cash requirements,
- relatively low share of future public resources committed to pension expenditure, i.e. the Implicit Pension Debt (IPD), and relatively lower growth on real basis,

- the estimated (as of 30.06.2009) GP Fund liability of **Rs.89.8 billion** as at 30th June 2010, all of which constitutes of contributions fully made by employees and interest thereon, and
- current revenue constraints of the Government and high priorities for other areas such development projects, law and order etc.

The objectives of the funding strategy are:

- to start funding of both employee benefit schemes at the same time with higher priority attached to GP Fund (all of which pertains to contributions fully made by employees and interest thereon),
- to build-up reasonable Pension Fund assets during next 5-10 years so that it can graduate pension benefit payments from the fiscal budget by smoothing its percentage portion of revenue by paying any expected and unexpected jumps in pension payouts through the Pension Fund earnings, and/or creating fiscal space to meet partial pension outgo, if needed, and
- to build-up GP Fund assets for future benefit accrual and funding past liability.

In this chapter, we are giving the updated amount of contributions required in Pension and GP Fund over the next 30 years (as per the liability estimates based on the latest data) in accordance with the funding strategy already approved by the Government of Punjab.

<u>GP Fund</u>

- Annual GP Fund contributions deducted from the salaries of the employees would be contributed to the GP Fund; and
- Expected past service GP Fund liability of **Rs.89.8 million** as at 30.06.2010 (based upon the estimate as at 30.06.2009) would be amortized over 30 years with increasing instalments.

The GP Fund contributions, estimated as at 30.06.2009, for next 30 years is as follows:

Rs. Billion

Year	Past Liability Amortization Instalment	Annual Regular Contribution deducted from Salaries	Total Amount of Contribution to GP Fund
2010 - 11	2.0	5.6	7.6
2011 - 12	2.0	6.2	8.2
2012 - 13	3.0	6.8	9.8
2013 - 14	3.0	7.5	10.5
2014 - 15	4.0	8.3	12.3
2015 - 16	5.1	9.2	14.3
2020 - 21	11.6	14.8	26.4
2025 - 26	20.7	22.8	43.5
2030 - 31	33.3	33.6	66.9
2035 - 36	50.8	51.5	102.0
2039 - 40	69.6	74.6	144.0

The revised projections for GP Fund contributions for next 30 years, based on the information acquired as of 30.06.2010, would be as follows:

Rs. Billion

Year	Past Liability Amortization Instalment	Annual Regular Contribution deducted from Salaries	Total Amount of Contribution to GP Fund
2010 - 11	2.0	5.4	7.4
2011 - 12	2.0	6.0	8.0
2012 - 13	3.0	6.7	9.7
2013 - 14	3.0	7.4	10.4
2014 - 15	4.0	8.1	12.1
2015 - 16	5.1	8.9	14.0
2020 - 21	11.6	14.4	26.0
2025 - 26	20.7	21.8	42.5
2030 - 31	33.3	32.1	65.4
2035 - 36	50.8	51.6	102.4
2039 - 40	69.6	74.8	144.4

There are relatively nominal differences in the contributions calculated in 2009 and the updated estimates in 2010.

The detailed GP Fund Projections are presented in Appendix VIII of the Report.

Pension Fund

- Annual contribution of Rs.2 billion each during 2010-11 & 2011-12, Rs.3 billion each during 2012-13 & 2013-14, Rs.4 billion during 2014-15 would be made to the Pension Fund (i.e. the next 5 years);
- No payments would be made from the Fund during the accumulation period;
- After accumulation period, 5% of Basic Salaries will be contributed annually to the Fund; and
- The Fund will begin to meet pension payments from the total investment income earned on the accumulated capital and annual contributions from year 2015-16;

The table below summarizes the amount available (estimated as at 30.06.2009) in each of the next 10 years through investment income on Pension Fund investments, assuming Pension Fund assets of **Rs.12.0 billion** as at 30.06.2010:

Year	Pension Expense	Contribution to the Fund	Return on Pension Fund OR Fiscal Space generated
2010 - 11	23.4	2.0	1.4
2011 - 12	26.6	2.0	1.9
2012 - 13	30.0	3.0	2.3
2013 - 14	35.3	3.0	3.0
2014 - 15	38.5	4.0	3.7
2015 - 16	46.6	6.9	4.6
2016 - 17	50.8	7.5	6.0
2017 - 18	59.4	8.2	7.6
2018 - 19	67.2	8.9	9.5
2019 - 20	77.5	9.7	11.7

The Punjab Pension Fund (PPF) made a payment of **Rs.1.8 billion** to Reserve Pension Fund during 2009-10.

The following table presents the revised figures of the Pension Expense and buffer amount available in each of the next 10 years through investment income on Pension Fund investments based upon:

- o assumption that future payments from the PPF would be as per the strategy adopted

- based on Pension Fund assets of **Rs.12.1 billion** as at 30.06.2010
- cash-flow projections incorporating the latest (revised) Pension benefits and data acquired as of 30.06.2010

Year	Pension Expense	Contribution to the Fund	Return on Pension Fund OR Fiscal Space generated
2010 – 11	29.7	2.0	1.4
2011 – 12	31.3	2.0	1.9
2012 - 13	36.0	3.0	2.3
2013 - 14	40.6	3.0	3.0
2014 - 15	46.0	4.0	3.7
2015 - 16	51.5	6.0	4.6
2016 - 17	57.6	6.6	3.8
2017 - 18	64.5	7.2	4.6
2018 - 19	71.8	7.9	5.5
2019 - 20	80.5	8.6	6.4

The detailed projections under the adopted funding strategy for Pension liabilities are provided in Appendix IX of the Report.

3.3 Assumptions

Over all, there has been no change in the assumptions for 2010 valuation, as compared to 2009. The assumptions used are provided in Appendix X of the Report.

3.4 Updated Contributions for the Adopted Funding Strategy

The following table illustrates the total contributions in each GP and Pension Fund for the next 30 years based on the adopted funding strategy and revised information received as at 30.06.2010:

Year	Annual Regular Contribution deducted from Salaries	Past GP Fund Liability Amortization Instalment	Total Amount of Pension Fund Contribution	Total Contribution
2010 - 11	5.4	2.0	2.0	9.4
2011 - 12	6.0	2.0	2.0	10.0
2012 - 13	6.7	3.0	3.0	12.7
2013 - 14	7.4	3.0	3.0	13.4
2014 - 15	8.1	4.0	4.0	16.1
2015 - 16	8.9	5.1	6.0	20.0
2016 - 17	9.8	6.2	6.6	22.6
2017 - 18	10.9	7.4	7.2	25.5
2018 - 19	11.9	8.7	7.9	28.5
2023 - 24	18.8	14.9	12.0	45.7
2028 - 29	27.2	27.7	18.2	73.1

CHAPTER 4
International Public Sector Accounting Standard 25 for Punjab Government Pension & General Provident Fund Schemes

4.1 Objective

The International Public Sector Accounting Standard 25 (IPSAS 25) prescribes the accounting and disclosures by public sector entities for employee benefits.

The Standard requires an entity to recognize:

- a liability, when an employee has provided service in exchange for employee benefits to be paid in the future; and
- an expense, when the entity consumes the economic benefits or service potential arising from service provided by an employee in exchange for employee benefits.

This chapter presents accounting and disclosures for Punjab Government Pension and General Provident Fund Schemes required as per the Standard for the year 2009-10 (on similar lines as 2008-09). It has been assumed that the Standard was initially applied in the year 2008-09.

4.2 Scope

International Public Sector Accounting Standards are applicable on all entities preparing and presenting financial statements under the **accrual basis** of accounting. These entities are therefore necessarily required to comply with IPSAS 25 for all employee benefits (both short term and long term), except share based transactions.

Punjab Government Pension Scheme

The Punjab Government Pension Scheme is a defined benefit scheme since the pension benefits are formula based. The final pension benefit is calculated on the last drawn salary and service rendered by the employee. The benefit under this scheme thus falls under the "post-employment benefits – defined benefit plans" definition/provision given in the Standard.

The reporting and disclosures of the scheme have been prepared as per the relevant paragraphs and provisions of IPSAS 25.

General Provident Fund (GPF) Scheme

The Punjab Government Provident Fund (GPF) Scheme is a contributory scheme where the employees are the sole contributors towards their GPF notional accounts. The contributions are deducted by the Government from employees' salaries, using subscription rates which are dependant on the pay scales of employees. The GPF notional accounts thus created are credited with interest income based on interest rates announced by the Government on an annual basis. The account balances are paid to employees at the time of cessation of their service. The monies collected through employee contributions are utilized to meet other provincial expenditures rather than being added to a separate Fund.

For the GPF Scheme, the Punjab Government does not provide a benefit to the employees either by contributing towards the notional accounts or at the time of final settlement of benefit. As such, the money paid to the employees at the end of service is merely the payment of loan or debt based on the announced interest rates for various years.

As per the:

- definitions given in **paragraph 10** of the Standard, Employee Benefits are all forms of consideration given by an entity in exchange for service rendered by employees;
- introduction note **IN1** of the Standard, benefits that are not consideration in exchange for service rendered by employees or past employees of reporting entities are not within the scope of this Standard; and

- **paragraph 28** of the Standard, for a post retirement benefit plan to be classified as a defined contribution plan, the entity must pay fixed contributions into a **separate entity**.

Keeping in view the above paragraphs of IPSAS-25 and the nature of the Punjab Government General Provident Fund Scheme explained above, it is interpreted that reporting of this scheme does not fall under this Standard.

Moreover, for a defined contribution plan, employer contribution is considered as expense for the period (paragraph 57. of the Standard). In case of GPF, there is no expense of Government of Punjab and consequently, there will be no liability as per the Standard.

In view of the above restrictions given in the Standard, this chapter provides the best possible disclosures for the year 2009-10 (on similar lines as 2008-09) that can be reflected by Government of Punjab in respect of GPF Scheme, if it is considered as a defined benefit plan (i.e. not a defined contribution plan).

4.3 Definitions, Assumptions & Methodology

Based on the provisions of IPSAS 25, definitions of various terms used in this chapter, assumptions derived and valuation methodology adopted are as follows:

4.3.1 Definitions

Present Value of Defined Benefit Obligation

The present value of a defined benefit obligation is the present value, without deducting any plan assets, of expected future payments required to settle the obligation resulting from employee service in the current and prior periods.

Current Service Cost

Current service cost is the increase in present value of defined benefit obligation resulting from employee service in the current period.

Defined Benefit Plans

Defined benefit plans are post-employment benefit plans other than defined contribution plans.

Defined Contribution Plans

Defined contribution plans are post-employment benefit plans under which an entity pays fixed contributions into a separate entity (a fund) and will have no legal or constructive obligation to pay further contributions if the fund does not hold sufficient assets to pay all employee benefits relating to employee service in the current and prior periods.

Employee Benefits

Employee benefits are all forms of consideration given by an entity in exchange for service rendered by employees.

Interest Cost

Interest cost is the increase during a period in the present value of a defined benefit obligation which arises because the benefits are one period closer to settlement.

Plan Assets

Plan assets comprise of:

- Assets held by a long-term employee benefit fund; and
- Qualifying insurance policies.

Return on Plan Assets

The return on plan assets is interest, dividends and other revenue derived from the plan assets, together with realized and unrealized gains or losses on the plan assets, less any costs of administering the plan and less any tax payable by the plan itself.

Post-employment Benefits

Post-employment benefits are employee benefits (other than termination benefits) which are payable after the completion of employment.

Post-employment Benefit Plan

Post-employment benefit plans are formal or informal arrangements under which an entity provides post-employment benefits for one or more employees.

<u>Vested/Non-Vested Past Service Cost</u>

Past service cost is the increase in the present value of defined benefit obligation for employee service in prior periods, resulting in the current period from the introduction of, or changes to, post-employment benefits or other long-term employee benefits. Past service cost may be either positive or negative.

Vested employee benefits are employee benefits that are not conditional on future employment.

Paragraph 113 states that

"Past service cost arises when an entity introduces a defined benefit plan or changes the benefits payable under an existing defined benefit plan. Such changes are in return for employee service over the period until the benefits concerned are vested. Therefore, past service cost is recognized over that period, regardless of the fact that the cost refers to employee service in previous periods."

Paragraph 112 states that

"In measuring its defined benefit liability, an entity shall recognize past service cost as an expense on a straight-line basis over the average period until the benefits become vested. To the extent that the benefits are already vested immediately following the introduction of, or changes to, a defined benefit plan, an entity shall recognize past service cost immediately."

Under the Punjab Government Pension Scheme, benefits become vested after completing 25 years of service. The liability of pensioners is a vested liability.

However, the employees are not required to render more service at any point of time to become entitled to GPF benefit. Therefore, there is no service requirement for vesting of GPF benefit and consequently all GPF liability is vested.

The IPSAS 25 disclosures were first prepared for the year 2008-09. Therefore, Non-vested Past Service Cost (paragraphs 112-117) as at the date of first time of adoption has been determined assuming that the pension benefit has been introduced as at 01.07.2008 with full past service credit and the accrued liability due to past service has been amortized over the remaining period to vesting calculated as at 01.07.2008.

*The average remaining years to vesting of employees with less than 25 years of service works out to **16 years** for the Government of Punjab. Thus, the non-vested benefit obligation calculated as at adoption of IPSAS-25 (i.e. 01.07.2008) is spread equally over a period of 16 years.*

The Government has made some changes in the Pension benefits with effect from July 1, 2010 through the annual budget for 2010-11 announced during June, 2010. The changes in the benefits are as follows:

- **Increase in minimum monthly pension from Rs.2,000 to Rs.3,000 for surviving pensioners and from Rs.1,000 to Rs.2,250 for family pensioners**
- **Increase in Family Pension from 50% to 75%**

As explained later in Section 4.3.2 of the Report, it has been considered prudent to recognise the increase in benefit obligations as at 30.06.2010 due to the above benefit changes during 2009-10. Therefore, vested/non-vested past service costs were calculated as at 30.06.2010 and recognized during 2009-10 according to the provisions of IPSAS 25.

*The average remaining years to vesting of employees with less than 25 years of service works out to **16 years** as at 30.06.2010 for the Government of Punjab. Thus, the non-*

vested benefit obligation calculated as at 30.06.2010 is amortized equally over a period of 16 years.

4.3.2 Assumptions

Assumptions used for Punjab Government Pension Scheme

- Discount Rate

  According to paragraph 91 of the Standard, discount rate shall reflect the time value of money. The currency and term of the financial instrument selected to reflect the time value of money shall be consistent with the currency and estimated term of the post-employment benefit obligations.

  The discount rate is determined by reference to market yields (at the balance sheet date) on long-term government bonds. The term of the assumed yield of such bonds is approximately consistent with the estimated term of the post-employment benefit obligations. The rate on 20-years PIB's have been taken as benchmark and consequently the discount rate assumption is **12%**.

- Rate of Increase in Pensionable Salary

  According to paragraphs 96-97, an estimate of future salary increases should take account of inflation, seniority, promotion and other relevant factors, such as supply and demand in the employment market. It has been assumed that pensionable salaries would increase at **11%** per annum in future.

  It may be stated that the assumption regarding the discount rate and the rate of increase in pensionable pay are intimately connected. During periods of inflation, both tend to rise in conformity with each other. From an actuarial costing point of view, it is the difference between these two rates (i.e. discount rate and pensionable pay increase) that matters, and not their individual values in isolation. Thus a difference of 1% between the discount rate (i.e. 12%) and the rate of increase in Pensionable Salary (i.e. 11%) has been considered appropriate. This 1% difference is within the locally and internationally recognised norms.

- Pension Indexation

  The indexation of pension has been assumed as the rate of **8%** per annum. The government has been giving indexation to pensioners at a significant higher than the assumed rate during the last couple of years to offset high inflation. However, this assumption of 8% is based upon past history of indexation provided by the government from time to time and a certain percentage of future expected inflation.

- Expected Mortality Experience

  It had been assumed that the mortality of active employees and pensioners will be according to LIC 96-98a Mortality Table. (Mortality Table is given in Appendix-V of the Report).

- Expected rates of Withdrawal/Ill-health/Retirement

  The Employee Turnover, Disability rates used in the valuation were based on the experience of public-sector employee benefit schemes in Pakistan in conjunction with the pensioners' information provided (The table showing these rates is given in Appendix-V of the Report).

  It has been assumed that there will be no early retirements. This assumption has been based upon the recent experience of Punjab Government employees with regards to early retirements. Reasons have been explained in detail in the earlier section of the report under "Assumptions" section of "Pension Scheme" chapter.

- Fair Value of Plan Assets

Fair Value of Plan Assets has been determined according to paragraphs 118-120 of the Standard.

Paragraph 118 states:

"The fair value of any plan assets is deducted in determining the amount recognized in the statement of financial position under paragraph 65. When no market price is available, the fair value of plan assets is estimated; for example, by discounting expected future cash flows using a discount rate that reflects both the risk associated with the plan assets and the maturity or expected disposal date of those assets (or, if they have no maturity, the expected period until the settlement of the related obligation)."

Paragraph 119 states:

"Plan assets exclude unpaid contributions due from the reporting entity to the fund, as well as any non-transferable financial instruments issued by the entity and held by the fund. Plan assets are reduced by any liabilities of the fund that do not relate to employee benefits, for example, trade and other payables and liabilities resulting from derivative financial instruments."

The fair value of Plan Assets has been taken same as provided by the Punjab Pension Fund as at the beginning and end of the year.

- Expected Return on Plan Assets

Paragraph 126 states that:

"The expected return on plan assets is based on market expectations, at the beginning of the period, for returns over the entire life of the related obligation. The expected return on plan assets reflects changes in the fair value of plan assets held during the period as a result of actual contributions paid into the fund and actual benefits paid out of the fund."

Keeping in view the market expectations of the existing and available instruments for investment of Punjab Government Pension Fund assets as at the beginning of the reporting period (i.e. July 1st 2009), it has been assumed that the expected return on plan assets would be 12% per annum (which is same as discount rate).

- First Time Adoption of the Standard

  It has been assumed that the year of first time adoption of this Standard would be 2008-09. Therefore, the date of first time adoption has been considered as 01.07.2008 (i.e. beginning of the previous fiscal year). The accounting and disclosures for the year 2009-10 have been prepared as per the requirements/provisions of the Standard.

- Actuarial Gains and Losses

  Actuarial gains & losses can occur on account of:

  - Actual experience being different than assumed; and/or
  - Effects of changes in actuarial assumptions.

  The standard prescribes a minimum basis to recognize a portion of this gain or loss into the annual cost. The minimum amount is determined by calculating the greater of 10% of present value of defined benefit obligation OR 10% of fair value of plan assets & dividing it by future working lifetime of employees.

However, an entity can opt for a faster recognition if it so desires. In this case, the recognition policy has to be applied consistently from period to period.

For Punjab Government Pension Scheme, the minimum recognition approach (as specified by the Standard) has been adopted.

- Average Remaining Working Lifetime of Active Employees

  The average remaining working lifetime of all employees (i.e. vested & non-vested) is determined as follows:

  - The expected remaining lifetime of each employee (in the sample) is determined after taking into account his/her possibility of leaving service due to retirement, death or invalid retirement.
  - The average of remaining working lifetime of all employees is then determined to calculate the average remaining working lifetime of the group of employees.

  The average remaining working lifetime of employees of Government of Punjab works out to 19 years as at 30.06.2010.

- Effective Date of Changes in Benefits and Pension Indexation

  The "Present Value of Defined Benefit Obligation" provides the present value of benefits payable in future based on services rendered up to the date of valuation and projected future salary. It has been considered appropriate to assume the valuation date (i.e. June 30, 2010) as the effective date of changes in Pension benefits and Pension increases announced by the Government during 2009-10 but applicable from 01.07.2010. Consequently, the vested/non-vested past service costs have been calculated as at 30.06.2010 and recognized in the "Statement of Financial Performance" according to the provisions of the Standard.

Assumptions used for Punjab Government General Provident Fund Scheme

- Interest Cost

  Interest cost on the accumulated GPF account balances as at July 1st 2009 for the year 2009-10 has been assumed at the rate of **12%**.

- First Time Adoption of the Standard

  It has been assumed that the year of first time adoption of this Standard would be 2008-09. Therefore, the date of first time adoption has been considered as 01.07.2008 (i.e. beginning of the previous fiscal year). The accounting and disclosures for the year 2009-10 have been prepared assuming the Standard was first adopted in the previous year.

- Actuarial Gains and Losses

  Owing to the nature of the GPF Scheme, no actuarial gains and losses arise for this employee benefit scheme.

4.3.3 Methodology

Actuarial Valuation Method used for Pension Scheme

Projected Unit Credit (PUC) Actuarial Cost Method was used for calculating the Present Value of Defined Benefit Obligation and Current Service Cost for the Pension Scheme. This method is mandated under IPSAS-25 under paragraph 77 of the Standard which states:

"An entity shall use the Projected Unit Credit Method to determine the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost."

4.4 Reporting of Punjab Government Pension Scheme as per IPSAS 25

4.4.1 Statement of Financial Position for Punjab Government Pension Scheme under Paragraph 65. of IPSAS 25

Statement of Financial Position as at 30th June 2010

	Rupees in '000
Present Value of Defined Benefit Obligation	687,725,241
Plus Actuarial Gains/**Less** Actuarial Losses not yet recognised	(2,336,136)
Minus Past Service Cost not yet recognised	(137,230,205)
Minus Past Service Cost not yet recognised on account of benefit changes as at 30.06.2010	(5,570,800)
Minus unrecognised Transitional Liability to be recognised in later periods	Nil
Minus fair value of Plan Assets	(12,050,495)
Statement of Financial Position as at 30th June 2010	**530,537,605**

4.4.2 Statement of Financial Position for Punjab Government Pension Scheme under Paragraph 65. of IPSAS 25

Statement of Financial Position as at 30th June 2009

	Rupees in '000
Present Value of Defined Benefit Obligation	597,622,375
Plus Actuarial Gains/**Less** Actuarial Losses not yet recognised	(14,208,481)
Minus Past Service Cost not yet recognised	(147,032,363)
Minus unrecognised Transitional Liability to be recognised in later periods	Nil
Minus Fair value of Plan Assets	(3,486,611)
Statement of Financial Position as at 30th June 2009	**432,894,920**

4.4.3 Statement of Financial Performance for Punjab Government Pension Scheme under Paragraph 74 of IPSAS 25

Expense Recognized in the Statement of Financial Performance for 2009-10

	Rupees in '000
Current Service Cost	25,040,019
Interest Cost	71,714,685
Expected Return on Plan Assets	(1,228,393)
Actuarial Gains and Losses	Nil
Non-Vested Past Service Cost that arose during 2008-09*	9,802,158
Non-Vested Past Service Cost that arose during 2009-10**	371,387
Vested Past Service Cost that arose during 2009-10***	23,768,749
Total Expense Recognized in the Statement of Financial Performance	**129,468,605**

* The past service cost recognized as expense is calculated as per paragraph 112. of the Standard which mandates to recognize (non-vested) past service cost as an expense on a straight-line basis over the average period until the benefits become vested. The average remaining years to vesting worked out as at July 1st 2008 is 16 years. Thus the amount of past service cost recognized as expense during 2008-09 is calculated by dividing the non-vested past service cost of Rs.156.834 billion by the average years to vesting of 16 years.

** The non-vested past service cost of Rs.5.942 billion that arose during 2009-10 due to changes in Pension benefits and is amortized, as per paragraph 112 of the Accounting Standard, over average remaining years to vesting of 16 years worked out as at July 1st 2010.

*** The vested past service cost of Rs.23.769 billion that arose during 2009-10 due to changes in Pension benefits and is recognized immediately during 2009-10 as per paragraph 112 of the Accounting Standard.

4.4.4 Disclosures for Punjab Government Pension Scheme under Paragraph 141. of IPSAS 25

Various disclosures required under paragraph 141. of the Standard, apart from Statement of Financial Position & Statement of Financial Performance, are presented as follows:

Accounting Policy for Recognizing Actuarial Gains & Losses [141.(a)]

As stated earlier, we have assumed that Government of Punjab will adopt the minimum 10% corridor approach for the recognition of actuarial gains and losses in respect of its Pension Scheme. Since the accumulated actuarial gains and losses at the end of previous financial year (i.e. uptil 30.06.2009), were not in excess of 10% corridor limit, therefore, no portion of actuarial gains losses has been recognized during 2009-10.

General Description of the Type of the Plan [141.(b)]

Punjab Government Pension Scheme is a defined benefit scheme based on pension calculation formula comprising of pension accrual rate related to service rendered and last drawn pensionable salary. The benefit structure of the Scheme is described in Appendix VI of the Report.

Reconciliation of Present Value of Defined Benefit Obligation [141.(c)]

	Rupees in '000
Present Value of Defined Benefit Obligation as at 1st July 2009	597,622,375
Current Service Cost	25,040,019
Interest Cost*	71,714,685
Non-vested Past Service Cost due to benefit changes as at 30.06.2010**	5,942,187
Vested Past Service Cost due to benefit changes as at 30.06.2010**	23,768,749
Benefits paid	(24,625,920)
Actuarial gains and losses	(11,736,854)
Present Value of Defined Benefit Obligation as at 30th June 2010	**687,725,241**

* According to paragraph 95. of the Standard, interest cost is computed by multiplying the discount rate as determined at the start of the period (which is 12%) with the present value of the defined benefit obligation throughout that period, taking account of any material changes in the obligation. {0.12 x Rs.597,622,375}

** Government has made changes in the Pension benefits through budget for 2010-11 announced in June 2010. The changes will be effective from July 1, 2010. It is considered prudent to account for increase in resulting liabilities as at 30.06.2010, during 2009-10 because of the intimation of these changes during 2009-10. According to paragraph 113. of the Standard, Past Service Cost arises when an entity introduces a defined benefit plan or changes the benefits payable under an existing defined benefit plan.

Reconciliation of Fair Value of Plan Assets [141.(e)]

	Rupees in '000
Fair Value of Plan Assets as at 1st July 2009	3,486,611
Contributions by the employer	9,000,000
Expected return on plan assets*	1,228,393
Profit transferred to Reserve Pension Fund	(1,800,000)
Benefits paid	Nil
Actuarial gains and losses	135,491
Fair value of plan assets as at 30th June 2010	**12,050,495****

* Expected return on plan assets is obtained by multiplying expected return on plan assets (which is 12% for 2009-10) with the fair value of plan assets as at the beginning of the reporting period for 12 months and with contribution during the year for 9 months. The profit was transferred to Reserve Pension Fund as at 30.06.2010, therefore it has not been taken into account for calculating expected return on plan assets. {0.12 x Rs.3,486,611 + 0.09 x Rs.9,000,000}

** Fair value of Plan Assets is obtained from un-audited Account of Punjab Pension Fund as at 30.06.2010.

<u>Reconciliation of Actuarial Gains and Losses</u>

	Rupees in '000
Unrecognised Actuarial Gains/(Losses) as at 1st July 2009	(14,208,481)
Actuarial Gains/(Losses) arising during the year	11,872,345
Actuarial (Gains)/Losses recognized in the Statement of Financial Performance during the year	Nil
Unrecognised Actuarial Gains/(Losses) as at 30th June 2010	**(2,336,136)**

Category of Plan Assets [141.(j)]

	Rupees in '000
Pakistan Investment Bonds with accrued interest (debt instruments)	5,696,774
Treasury Bills (debt instruments)	3,144,671
Term Finance Certificates with accrued interest (equity instruments)	172,931
Cash or Cash Equivalent	3,036,197
Prepayments	4
Brokerage Payable	(82)
Fair value of plan assets as at 30th June 2010	**12,050,495**

<u>Actual Return on Plan Assets [141.(m)]</u>

	Rupees in '000
Expected Return on Plan Assets for the year	1,228,393
Actuarial gain/ (loss) on assets in the year	135,491
Actual Return on Plan Assets	**1,363,884**

Principal Actuarial Assumptions used as at 30th June 2010 [141.(n)]

Discount rate	12% per annum
Basis on which discount rate has been determined	Explained above under Section 4.3
Expected rates of salary increase	11% per annum
Expected rates of return on plan assets	12% per annum
Average remaining years to vesting	16 years
Average remaining working lifetime	19 years
Rate of Increase in Pension amounts (Indexation rate)	8% per annum

Surplus (Deficit) in the Plan [141.(p)(i)]

	Rupees in '000	Rupees in '000
	2010	**2009**
Present Value of Defined Benefit Obligation as at June 30th of the year	687,725,241	597,622,375
Fair Value of Plan Assets at year end	12,050,495	3,486,611
Surplus/ (Deficit) in the Plan	**(675,674,746)**	**(594,135,764)**

Experience Adjustments [141.(p)(ii)]

	Rupees in '000
Experience adjustment arising on plan liabilities (gains)/losses*	(11,736,854)
Experience adjustment arising on plan assets (gain)/losses	(135,491)
Total Experience adjustment i.e. total actuarial gain	**(11,872,345)**

*The major source of gain during the year was that the average salary increased at the rate of 1.6% against the assumption of 11.0%. The major source of loss during the year was excess increase in pensions (at an average rate of approximately 18% against the assumption of 8%). However, the gain was reasonably in excess of the loss and the net result was a gain of Rs.11.737 billion during the year.

Estimated Contribution to be paid to the Plan during 2010-11 [141.(q)]

	Rupees in '000
Estimated Contribution to be paid by the Government of Punjab to its Pension Fund	2,000,000

Corroboration of Results

	Rupees in '000
Statement of Financial Position as at 30th June 2009	432,894,920
Total Expense Recognized in the Statement of Financial Performance	129,468,605
Benefit Payments made during the Year	(24,625,920)
Payment to Reserve Pension Fund	1,800,000
Contribution made during the Year	(9,000,000)
Statement of Financial Position as at 30th June 2010	**530,537,605**

4.5 Reporting of Punjab Government General Provident Scheme as per IPSAS 25

4.5.1 Statement of Financial Position for Punjab Government General Provident Fund Scheme under Paragraph 65. of IPSAS 25

Statement of Financial Position as at 30th June 2009

	Rupees in '000
Present Value of Defined Benefit Obligation (GP Fund Loan Balance on GOPB as at 30.06.2009)	79,185,192
Plus Actuarial Gains/**Less** Actuarial Losses not yet recognised	Nil
Minus Past Service Cost not yet recognised	Nil
Minus unrecognised Transitional Liability to be recognised in later periods	Nil
Minus fair value of Plan Assets	Nil
Statement of Financial Position as at 30th June 2009	**79,185,192**

4.5.2 Statement of Financial Position for Punjab Government General Provident Fund Scheme under Paragraph 65. of IPSAS 25

Statement of Financial Position as at 30th June 2010

	Rupees in '000
Present Value of Defined Benefit Obligation (GP Fund Loan Balance on GOPB as at 30.06.2010)	83,772,168
Plus Estimated outstanding GP Fund payments during 2009-10*	3,109,253
Plus Actuarial Gains/**Less** Actuarial Losses not yet recognised	Nil
Minus Past Service Cost not yet recognised	Nil
Minus unrecognised Transitional Liability to be recognised in later periods	Nil
Minus fair value of Plan Assets	Nil
Statement of Financial Position as at 30th June 2010	**86,881,421**

*AG Punjab intimated that GP Fund payments were withheld during 2009-10 due to shortage of cash. The amount of outstanding GP Fund payments as at 30.06.2010 were estimated by deducting the GP Fund payments made during the year from the projected GP Fund payments for 2009-10 presented in the actuarial valuation report as at 30.06.2009.

4.5.3 Statement of Financial Performance for Punjab Government General Provident Fund Scheme under Paragraph 74. of IPSAS 25

Expense Recognized in the Statement of Financial Performance for 2009-10

	Rupees in '000
Current Service Cost	Nil
Interest Cost*	9,586,223
Miscellaneous Adjustment in Liability **	(6,399,247)
Expected Return on Plan Assets	Nil
Total Expense Recognized in the Statement of Financial Performance	**3,186,976**

*Interest Credited by the Government during the period has been assumed at the rate of 12%.

**Miscellaneous Adjustment in Liability is primarily due to the difference in updated liability as at 30.06.10 versus the expected liability based upon 30.06.2009 estimate.

4.5.4 Disclosures for Punjab Government General Provident Fund Scheme under Paragraph 141. of IPSAS 25

Various disclosures required under paragraph 141. of the Standard, apart from Statement of Financial Position & Statement of Financial Performance, are presented as follows:

Accounting Policy for Recognizing Actuarial Gains & Losses [141.(a)]

No actuarial technique is involved in determining the GPF balances. Interest cost is the estimated amount (assuming 12% interest credited rate and estimated benefit payments and contributions made at the middle of the year) credited by the Government during the period. There is no current service cost because Government does not contribute to the GP Fund. Thus, no actuarial gains and losses arise for the underlying GP Fund Scheme.

General Description of the Type of the Plan [141.(b)]

In GP Fund Scheme, employees are the sole contributors to their account balances according to their subscription rate which are based on pay scales of the employees. The Government deducts their contributions from salaries and utilizes the amounts in meeting its expenditures rather than contributing it to a separate Fund. It maintains a book entry for contribution by employees which is credited with an interest rate announced by the Government on an annual basis. The account balances are paid to employees at the time of cessation of their service.

The vesting period for GPF Scheme is NIL since the employee does not have to render more service for being entitled to the GPF benefit.

Reconciliation of Present Value of Defined Benefit Obligation [141.(c)]

Reconciliation of Defined Benefit Obligation of GP Fund becomes difficult for the year, mainly because of the following:

i. Difference between updated estimate of GP Fund liability as at 30.06.10 based on revised data and expected amount of liability as of similar date based on data as at 30.06.2009.

ii. Non availability of the amount withdrawn during the year by the members as loan.

This differential in liability reconciliation is reflected as "Miscellaneous Adjustment" during the year.

Reconciliation of Present Value of Defined Benefit Obligation [141.(c)]

	Rupees in '000
Present Value of Defined Benefit Obligations as at 1st July 2009 (GP Fund Loan Balance on GOPB as at 01.07.2009)	79,185,192
Interest Cost	9,586,223
Benefits paid	(1,090,747)
Estimated Employees' contribution deducted during the period	5,600,000
Miscellaneous Adjustment during the year	(6,399,247)
Present Value of Defined Benefit Obligation as at 30th June 2010 (GP Fund Loan Balance on GOPB as at 30.06.2010)	**86,881,421**

Reconciliation of Fair Value of Plan Assets [141.(e)]

	Rupees in '000
Fair Value of Plan Assets as at 1st July 2009	Nil
Contributions by the employer	Nil
Expected return on plan assets	Nil
Benefits paid	Nil
Fair value of plan assets as at 30th June 2010	**Nil**

Actual Return on Plan Assets [141.(m)]

	Rupees in '000
Expected Return on Plan Assets for the year	Nil
Actuarial gain/ (loss) on assets in the year	Nil
Actual Return on Plan Assets	**Nil**

Principal Actuarial Assumptions used as at 30th June 2010 [141.(n)]

Discount rate	Nil
Basis on which discount rate has been determined	Nil
Expected rates of salary increase	Nil
Expected rates of return on plan assets	Nil
Average remaining years to vesting	Nil
Average remaining working lifetime	19 years

Surplus (Deficit) in the Plan [141.(p)(i)]

	Rupees in '000	Rupees in '000
	2010	**2009**
Present Value of Defined Benefit Obligation as at June 30th of the year	86,881,421	79,185,192
Fair Value of Plan Assets at year end	Nil	Nil
Surplus/ (Deficit) in the Plan	(86,881,421)	(79,185,192)

Experience Adjustments [141.(p)(ii)]

	Rupees in '000
Experience adjustment arising on plan liabilities (gains)/losses	Nil
Experience adjustment arising on plan assets (gain)/losses	Nil

Estimated Contribution to be paid to the Plan during 2010-11 [141.(q)]

	Rupees in '000
Estimated Contribution to be paid by the Government of Punjab to its GP Fund	Nil

Corroboration of Results

	Rupees in '000
Statement of Financial Position as at 30th June 2009	79,185,192
Total Expense Recognized in the Statement of Financial Performance	3,186,976
Benefit Payments made during the Year	(1,090,747)
Estimated Contributions deducted from employees during the year	5,600,000
Statement of Financial Position as at 30th June 2010	**86,881,421**

4.6 Commentary on IPSAS 25 Application to Government of Punjab Pension and GP Fund Schemes

1. IPSAS 25 is applicable to all public sector employee benefits and is being applied to Punjab Govt. Pension and GP Fund Schemes for the first time in the year 2008-09.
2. Accounting disclosures under IPSAS 25 for Punjab Govt. Pension and GP Fund Schemes have been prepared for 2009-10 assuming that the Accounting Standard was adopted during the previous financial year (2008-09).
3. It is debatable whether IPSAS 25 is applicable to GP Fund Scheme since this does not constitute an employee benefit as defined in the Standard.
4. Considering that this is a new concept for the Government, its usefulness will start to emerge gradually over the future.
5. The reconciliations of various items (such as present value of defined benefit pension obligations, fair value of Plan assets etc.) will emerge as useful tools for the Govt. in understanding the liabilities and assets of the Schemes AND various components of each item.
6. Additionally, the emergence and movement of gains and losses for Pension Scheme will make the Govt. focus on the areas which impact the Scheme's health negatively or positively.
7. In 2009-10, there is a net actuarial gain of Rs.11.737 billion on Defined Benefit Obligation during the year. The major source of gain during the year was that the rate of average salary increase was 1.6% against the assumption of 11.0%. The gain from this source was approximately Rs.35 billion. The pensions were increased by the Govt. at an average rate of 18% with effect from 01.07.2010. This excess than expected (8%) pension increases generated an actuarial loss of approximately Rs.23

billion during the year. However, the gain was reasonably in excess of the loss generated during the year.

8. The Govt. has made various changes in the Pension benefits with effect from 01.07.2010. The decision of these was announced during 2009-10 through annual budget. Therefore, it is felt prudent to recognize the financial impact of these changes in benefits during 2009-10. According to paragraph 113 of IPSAS25, past service cost arises when an entity introduces a defined benefit plan or changes the benefits payable under an existing defined benefit plan. The changes in benefits have generated past service cost of Rs.29.711 billion (split by non-vested past service cost of Rs.5.942 billion and vested past service cost of Rs.23.769 billion). The additional liability resulting from the announced changes is dealt according to the provisions of the Accounting Standard.

9. A breakup of Past Service Cost and Gains/Losses by source is given the following table:

Active Employees				
Sources	**Past Service Cost**		**Actuarial (Gain)/Loss**	**Total Increase / (Decrease) in Liability**
	Vested	Non-vested		
Salary Increase			(35.5)	(35.5)
New Entrants			2.8	2.8
Benefit Changes	8.9	5.9		14.8
Total (Active Employees)	8.9	5.9	(32.7)	(17.9)
Pensioners				
Sources	**Past Service Cost**		**Actuarial (Gain)/Loss**	**Total Increase / (Decrease) in Liability**
	Vested	Non-vested		
Indexation			22.8	22.8
Benefit Changes	14.9			14.9
Total (Pensioners)	14.9		22.8	37.7
Grand Total (Active and Pensioners)				**19.8**

10. It needs to be noted that the amount recognised under "Statement of Financial Performance" for 2009-10 has increased significantly to Rs.129.469 billion as compared to Rs.96.46 billion for 2008-09.

    The primary reason is that the vast bulk of increase in past service liability due to change in benefits is vested (i.e. Rs.23.769 billion out of a total of Rs.29.711 billion).

11. It is also important to differentiate the accrued (or funding) pension liability from IPSAS 25 liability.

    One key difference is that IPSAS 25 spreads non-vested liability over the average period to vesting. Therefore, the non-vested liability due to change in benefit of Rs.5.942 billion is amortized over 16 years (i.e. average remaining years to vesting calculated as at 30.06.2010) while the vested liability of Rs.23.769 billion is recognized immediately during 2009-10.

    Another important difference is accrued pension liability recognizes 100% of actuarial gains and losses whereas the minimum approach under IPSAS 25 recognizes a relatively small portion.

    As such, the accrued (or funding) pension liability of Rs.687.7 billion at 30.06.10 is significantly higher than corresponding IPSAS liability of Rs.530.53 billion.

12. Govt. has introduced an addition Medical Allowance, as % of monthly pension, for pensioners with effect from July 1, 2010. This benefit is, however, in lieu of the reimbursement of medicine cost to the pensioners. As such, the additional Medical Allowance has not been considered as part of the Pension Scheme benefits. Therefore, the liability arises from the introduction of Medical Allowance has not

been accounted for while preparing accounting disclosures of the Pension Scheme under IPSAS 25.

13. The Standard requires calculation of following 2 parameters :

    i. Statement of Financial Position; and
    ii. Statement of Financial Performance.

    These act as useful benchmarks for comparison of assets vs. liabilities AND scheme cost vs. contributions during the accounting period.

14. The Standard requires narrative description of the basis used to determine the overall expected return on assets.

    An expected return on assets of 12% has been assumed. This rate is based on the market expectations at the beginning of the period, for returns over the entire life of related obligations. It also takes into account the changes in the fair value of plan assets held during the period as a result of actual contributions paid into the Fund and actual benefits paid out of the Fund. The period of investment for the contributions (of Rs.9.0 billion) during 2009-10 was approximately 9 months whereas payment to Pension Reserve Fund (of Rs.1.8 billion) was made as at the end of the period.

15. Members of GP Fund Scheme are entitled to withdraw loans from their GP Fund balances for various reasons. Employees of the Government of Punjab make frequent use of this facility. There is no information available on the total amount of loan withdrawn during the year and interest income adjustment on the loan balances. As such, this is a source of discrepancy in estimating GPF balances from 2 different sets of data. Also, error can result in estimation of liabilities from the changes in the distributions of data received at different points of time. This difference in estimation

is “miscellaneous adjustment” arising during the year. Owing to the nature of the GP Fund Scheme where employee is the sole contributor and the Government uses employees’ Fund balance and pays interest on them, any change in liability due to miscellaneous adjustment is recognized in the “Statement of Financial Performance” during the year.

N.A. Cheema

NAUMAN A. CHEEMA
Actuary
Fellow of Society of Actuaries (USA)
Fellow of Pakistan Society of Actuaries

APPENDIX I

Summary of Sample of Active Employees of Government of Punjab
Age-wise Distribution

Age	Total Number	Total Monthly Salary	Avg. Monthly Salary	Avg. PS	Distribution
20	305	1,063,978	3,488	1.1	0.3%
21	775	2,793,144	3,604	1.8	0.8%
22	1,586	5,953,054	3,754	2.2	1.7%
23	2,299	9,018,784	3,923	2.6	2.4%
24	2,992	12,376,123	4,136	3.0	3.1%
25	3,560	15,457,071	4,342	3.2	3.7%
26	4,236	19,217,342	4,537	3.6	4.4%
27	4,563	21,281,604	4,664	3.8	4.7%
28	4,397	20,766,625	4,723	4.2	4.6%
29	3,313	15,896,738	4,798	4.7	3.4%
30	2,735	13,009,616	4,757	5.3	2.8%
31	2,483	13,063,374	5,261	6.1	2.6%
32	2,328	12,236,118	5,256	6.9	2.4%
33	2,071	11,426,781	5,518	7.9	2.2%
34	2,207	12,644,354	5,729	9.1	2.3%
35	2,085	12,388,194	5,942	9.7	2.2%
36	2,202	13,854,258	6,292	11.3	2.3%
37	2,179	14,531,621	6,669	12.2	2.3%
38	2,449	17,222,283	7,032	13.0	2.5%
39	2,521	18,748,064	7,437	15.2	2.6%
40	2,736	21,312,047	7,789	16.3	2.8%
41	3,091	25,069,952	8,111	16.8	3.2%
42	3,312	28,280,331	8,539	17.8	3.4%
43	2,962	25,824,881	8,719	18.3	3.1%
44	3,120	28,140,480	9,019	18.9	3.2%
45	3,107	28,826,491	9,278	19.5	3.2%
46	2,696	25,690,647	9,529	19.9	2.8%
47	2,501	25,311,120	10,120	21.1	2.6%
48	2,449	26,046,388	10,636	21.8	2.5%
49	1,899	21,204,239	11,166	22.7	2.0%
50	2,162	24,391,009	11,282	23.4	2.3%
51	1,756	20,648,715	11,759	24.5	1.8%
52	1,725	19,875,539	11,522	25.9	1.8%
53	1,667	19,800,711	11,878	28.3	1.7%
54	1,639	19,203,944	11,717	29.4	1.7%
55	1,591	18,734,692	11,775	30.3	1.7%
56	1,547	18,200,378	11,765	31.0	1.6%
57	1,366	16,664,030	12,199	32.1	1.4%
58	1,285	15,342,374	11,940	32.7	1.3%
59	1,021	12,555,536	12,297	33.8	1.1%
60	1,150	14,423,036	12,542	34.9	1.2%

Grade-wise Distribution

Grade	Number in Grade	Total Monthly Salary	Avg. Monthly Salary	Avg. AGE	PS	Distribution
1	3,964	12,627,041	3,185	32	7	4.1%
2	11,610	53,264,774	4,588	40	15	12.1%
3	1,756	9,513,329	5,418	45	21	1.8%
4	1,337	6,179,611	4,622	39	14	1.4%
5	31,046	157,545,059	5,075	34	10	32.3%
6	1,448	8,826,013	6,095	44	19	1.5%
7	8,811	53,347,223	6,055	38	14	9.2%
8	590	3,955,892	6,705	48	24	0.6%
9	8,536	59,184,461	6,934	40	16	8.9%
10	757	6,705,359	8,858	51	28	0.8%
11	1,714	12,163,154	7,096	42	18	1.8%
12	1,518	9,463,532	6,234	39	16	1.6%
13	350	2,196,047	6,274	51	29	0.4%
14	8,904	75,646,609	8,496	38	14	9.3%
15	1,068	12,720,267	11,910	46	22	1.1%
16	4,748	53,555,089	11,280	41	16	4.9%
17	4,484	80,224,975	17,891	43	16	4.7%
18	2,153	56,738,842	26,353	49	22	2.2%
19	951	31,619,395	33,249	53	26	1.0%
20	274	10,662,076	38,913	54	26	0.3%
21	44	2,071,361	47,076	56	29	0.0%
22	5	285,554	57,111	57	32	0.0%

Consolidated Data used for Valuation

Age	Total Number	Distribution	Total Monthly Salary	Avg. Monthly Salary	Avg. PS	Final Total Number	Final Total Monthly Salary
20	305	0.3%	1,063,978	3,488	1.1	2,980	10,395,584
21	775	0.8%	2,793,144	3,604	1.8	7,571	27,286,313
22	1,586	1.7%	5,953,054	3,754	2.2	15,494	58,156,759
23	2,299	2.4%	9,018,784	3,923	2.6	22,459	88,104,770
24	2,992	3.1%	12,376,123	4,136	3.0	29,230	120,907,112
25	3,560	3.7%	15,457,071	4,342	3.2	34,778	151,001,689
26	4,236	4.4%	19,217,342	4,537	3.6	41,382	187,736,553
27	4,563	4.7%	21,281,604	4,664	3.8	44,577	207,904,904
28	4,397	4.6%	20,766,625	4,723	4.2	42,955	202,872,498
29	3,313	3.4%	15,896,738	4,798	4.7	32,365	155,296,689
30	2,735	2.8%	13,009,616	4,757	5.3	26,719	127,094,674
31	2,483	2.6%	13,063,374	5,261	6.1	24,257	127,619,117
32	2,328	2.4%	12,236,118	5,256	6.9	22,743	119,538,671
33	2,071	2.2%	11,426,781	5,518	7.9	20,232	111,630,434
34	2,207	2.3%	12,644,354	5,729	9.1	21,561	123,527,371
35	2,085	2.2%	12,388,194	5,942	9.7	20,369	121,024,039
36	2,202	2.3%	13,854,258	6,292	11.3	21,512	135,346,409
37	2,179	2.3%	14,531,621	6,669	12.2	21,287	141,961,733
38	2,449	2.5%	17,222,283	7,032	13.0	23,925	168,249,543
39	2,521	2.6%	18,748,064	7,437	15.2	24,628	183,152,448
40	2,736	2.8%	21,312,047	7,789	16.3	26,729	208,205,297
41	3,091	3.2%	25,069,952	8,111	16.8	30,197	244,916,642
42	3,312	3.4%	28,280,331	8,539	17.8	32,356	276,279,706
43	2,962	3.1%	25,824,881	8,719	18.3	28,936	252,285,196
44	3,120	3.2%	28,140,480	9,019	18.9	30,480	274,910,843
45	3,107	3.2%	28,826,491	9,278	19.5	30,353	281,612,640
46	2,696	2.8%	25,690,647	9,529	19.9	26,338	250,979,328
47	2,501	2.6%	25,311,120	10,120	21.1	24,433	247,271,728
48	2,449	2.5%	26,046,388	10,636	21.8	23,925	254,454,812
49	1,899	2.0%	21,204,239	11,166	22.7	18,552	207,151,681
50	2,162	2.3%	24,391,009	11,282	23.4	21,121	238,280,532
51	1,756	1.8%	20,648,715	11,759	24.5	17,155	201,724,775
52	1,725	1.8%	19,875,539	11,522	25.9	16,852	194,169,615
53	1,667	1.7%	19,800,711	11,878	28.3	16,285	193,434,064
54	1,639	1.7%	19,203,944	11,717	29.4	16,012	187,610,462
55	1,591	1.7%	18,734,692	11,775	30.3	15,543	183,025,340
56	1,547	1.6%	18,200,378	11,765	31.0	15,113	177,803,690
57	1,366	1.4%	16,664,030	12,199	32.1	13,345	162,797,570
58	1,285	1.3%	15,342,374	11,940	32.7	12,553	149,877,677
59	1,021	1.1%	12,555,536	12,297	33.8	9,974	122,653,195
60	1,150	1.2%	14,423,036	12,542	34.9	11,235	140,906,788
Total	**96,068**					**938,511**	**7,019,158,891**

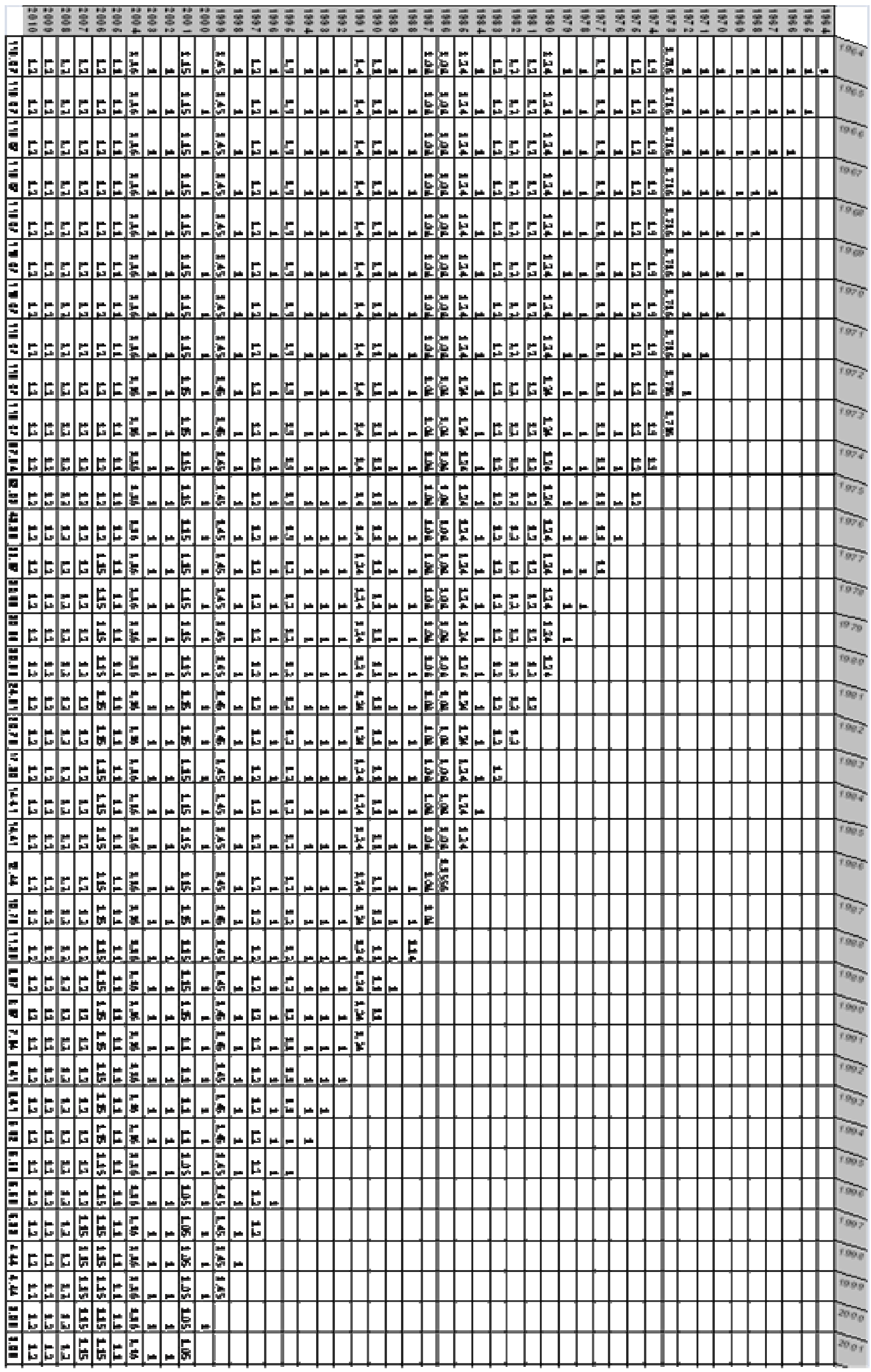
APPENDIX II

SANCTIONED POSTS BREAK-UP FOR 2009-10

BASIC SCALE	PROVINCIAL	DISTRICT	TOTAL
1	54,016	142,150	196,166
2	21,088	7,761	28,849
3	8,027	769	8,796
4	5,613	8,446	14,059
5	147,927	32,926	180,853
6	4,436	19,900	24,336
7	35,328	150,681	186,009
8	459	3,747	4,206
9	20,630	98,824	119,454
10	655	3,911	4,566
11	9,490	11,031	20,521
12	4,625	7,080	11,705
13	530	229	759
14	91,468	24,918	116,386
15	1,266	4,110	5,376
16	11,322	39,657	50,979
17	18,998	22,153	41,151
18	10,571	5,184	15,755
19	2,923	2,202	5,125
20	805	140	945
21	128	-	128
22	5	-	5
Special Grade	1,315	53,848	55,163
Total:	**451,625**	**639,667**	**1,091,292**

APPENDIX III

Indexation



APPENDIX IV

Age wise Distribution of Pensioners

	Number of Pensioners					Number of Pensioners			
Age	Family	Early Retirement	Invalid Retiree	Normal Retirement	Age	Family	Early Retirement	Invalid Retiree	Normal Retirement
30	7	2		-	70	930	10,120	315	4,386
31	11			-	71	1,065	9,852	273	4,889
32	11	2		-	72	975	8,526	268	4,880
33	13	4	2	-	73	1,033	7,418	206	4,142
34	36	7	7	-	74	989	7,213	190	3,625
35	27	9	22	-	75	997	5,363	157	4,281
36	38	9	20	-	76	1,056	4,710	141	4,612
37	60	20	11	-	77	937	3,695	116	4,057
38	123	25	31	-	78	935	3,760	65	3,326
39	127	42	45	-	79	796	3,482	83	2,283
40	163	60	67	-	80	772	3,100	121	2,236
41	248	114	141	-	81	763	2,637	110	2,140
42	347	150	250	-	82	745	2,037	56	2,201
43	324	125	271	-	83	680	1,935	49	2,069
44	385	145	394	-	84	561	1,856	58	1,574
45	517	351	447	-	85	593	1,932	36	1,521
46	539	579	653	-	86	620	1,767	34	1,592
47	620	877	664	-	87	521	1,536	31	1,405
48	680	1,331	743	-	88	512	1,438	27	1,353
49	568	1,525	637	-	89	344	897	7	801
50	700	1,948	756	-	90	369	1,069	18	807
51	624	2,279	830	-	91	297	977	11	1,013
52	655	3,205	908	-	92	248	671	13	309
53	637	4,059	832	-	93	172	425	9	195
54	839	5,609	906	-	94	161	195	4	228
55	839	6,786	870	-	95	134	83		112
56	877	8,255	935	-	96	110	83		103
57	801	8,349	919	-	97	107	56		78
58	877	9,355	944	-	98	94	54		78
59	751	8,324	821	-	99	74	51		11
60	805	9,492	866	4,417	100	67	20		4
61	1,805	9,818	702	9,776	101	34	16		7
62	651	10,628	597	9,018	102	34	11		
63	693	11,189	711	7,389	103	31	9		4
64	642	10,898	519	6,289	104	7	4		2
65	801	11,522	512	5,924	105	20	2	2	2
66	743	11,446	501	4,366	106	9			
67	863	10,590	412	3,737	107	18	2		2
68	888	11,972	403	4,075	108	9	2		
69	930	9,579	286	3,871					

APPENDIX V

Mortality Rates

The following table shows the age-based mortality rates used for the purpose of valuation. The rates are those of the LIC96-98a mortality table (Indian Mortality Table) used for actuarial work in Pakistan.

Age	Mortality Rates		Age	Mortality Rates
20	0.919		53	6.058
21	0.961		54	6.730
22	0.999		55	7.401
23	1.033		56	8.069
24	1.063		57	8.710
25	1.090		58	9.397
26	1.113		59	10.130
27	1.132		60	10.907
28	1.147		61	11.721
29	1.159		62	11.750
30	1.166		63	12.120
31	1.170		64	12.833
32	1.170		65	13.889
33	1.171		66	15.286
34	1.201		67	17.026
35	1.246		68	19.109
36	1.308		69	21.534
37	1.387		70	24.301
38	1.482		71	27.410
39	1.593		72	30.862
40	1.721		73	34.656
41	1.865		74	38.793
42	2.053		75	43.272
43	2.247		76	48.093
44	2.418		77	53.257
45	2.602		78	58.763
46	2.832		79	64.611
47	3.110		80	70.802
48	3.438		81	77.335
49	3.816		82	84.210
50	4.243		83	91.428
51	4.719		84	98.988
52	5.386		85	106.891

Note: All rates are per 1000

Turnover, Disability and Early Retirement Rates

The employee turnover, disability and early retirement rates used in the valuation are shown in the table below. The rates are based on the experience of public-sector employee benefit schemes in Pakistan.

Age	Withdrawal Rates	Disability Rates	Early Retirement Rates
20	125.00	-	-
21	85.70	-	-
22	96.80	-	-
23	65.30	-	-
24	44.00	-	-
25	29.70	-	-
26	47.90	-	-
27	31.10	-	-
28	20.40	-	-
29	13.50	-	-
30	9.00	0.50	-
31	6.00	0.55	-
32	15.00	0.59	-
33	9.40	0.64	-
34	6.00	0.69	-
35	3.90	0.74	-
36	2.60	0.78	-
37	1.70	0.83	-
38	7.30	0.88	-
39	4.50	0.92	-
40	2.80	0.97	-
41	1.80	1.02	-
42	1.20	1.06	-
43	0.80	1.11	-
44	0.50	1.16	-
45	0.40	1.21	10.00
46	0.20	1.25	10.00
47	0.10	1.30	10.00
48	0.10	2.10	10.00
49	0.10	2.10	14.70
50	-	2.20	19.40
51	-	2.20	24.10
52	-	2.30	28.80
53	-	2.30	33.50
54	-	2.40	38.20
55	-	2.40	42.90
56	-	2.50	47.60
57	-	2.50	52.30
58	-	2.60	57.00
59	-	2.60	61.70
60	-	-	-

Note: All rates are per 1000

APPENDIX VI

Summary of the Benefit Structure of Punjab Government Pension Scheme

The Pension Scheme Members of Punjab Government were entitled to the following pension benefits on normal and early retirement, death and disability as at July 1st 2010:

Normal Retirement Pension

The normal retirement age is 60 years.

If service is less than 5 years:

- Nil Benefit

If service is greater than 5 and less than 10 years:

- A lump sum gratuity is payable. The rate of gratuity is calculated as per the following formula:

  Gratuity = Last Drawn Pensionable Salary x Pensionable Service

If service is greater than 10 years:

- The rate of pension at normal retirement age is (7/300) 2.33% of the last drawn pensionable salary for each year of service subject to a maximum service period of 30 years. The maximum pension amount is thus limited to 70% of the last drawn pensionable salary

  The employees can surrender up to a maximum of 35% of the gross pension in lieu of a lumpsum-commuted value. The commuted value at age 60 shall be calculated as per the following formula:

  Commuted Value = 12.37 x amount of pension surrendered x 12

Early Retirement Pension

Early retirement is applicable on the completion of 25 years of continuous service.

- The rate of pension at early retirement age is 2.33% of the last drawn pensionable salary for each year of service subject to a maximum service period of 30 years. The maximum pension amount is thus limited to 70% of the last drawn pensionable salary

  The employees can surrender up to a maximum of 35% of the gross pension in lieu of a lumpsum-commuted value.

Death in Service

If service is less than 5 years:

- Nil

If service is greater than 5 and less than 10 years:

- A lump sum gratuity is payable. The rate of gratuity is calculated as per the following formula:

  Gratuity = 1.5 x Last Drawn Pensionable Salary x Service

If service is greater than 10 years:

- The basic pension shall be 2.33% of the last drawn pensionable salary for each year of service subject to a maximum service period of 30 years

  Widow's Pension = 75% x basic pension

  Widow's pension is paid to eligible children in case of death of the widow. Eligible children are defined as legal male child under the age of 21 years and legal unmarried daughter

  In addition to the above, the widow is entitled to 25% of the commuted value of gross pension. The age based commutation factors are set out in the table (later in the section)

Death after Retirement

In case of death after retirement, the widow is entitled to receive 75% of the pension being received by the retiree.

Widow's pension is paid to eligible children in case of death of the widow. Eligible children are defined as legal male child under the age of 21 years and legal unmarried daughter. In the absence of widow and eligible children, the pension is payable to the dependents (such as parents, widow daughter etc.) for the remaining guaranteed period

Ill-health Pension

If service is less than 5 years:

- Nil

If service is greater than 5 and less than 10 years:

- A lump sum gratuity is payable. The rate of gratuity is calculated as per the following formula:

  Gratuity = 1.5 x Last Drawn Pensionable Salary x Service

If service is greater than 10 years:

- The basic pension is 2.33% of the last drawn pensionable salary for each year of service subject to a maximum service period of 30 years.

  The employees can surrender up to a maximum of 35% of the gross pension in lieu of a lumpsum-commuted value.

Minimum Pension

Minimum pension payable to a retired employee is Rs.3,000/- per month. Minimum pension payable to a Family pensioner is Rs. 2,250/- per month (i.e. 75% of Rs.3,000/-).

Commutation Table

Following is the age – based commutation table showing commutation factors at ages 20 – 60.

Age	Commutation Factors	Age	Commutation Factors	Age	Commutation Factors
20	40.5043	36	28.3362	52	17.0050
21	39.7341	37	27.5908	53	16.3710
22	38.9653	38	26.8482	54	15.7517
23	38.1974	39	26.1009	55	15.1478
24	37.4307	40	25.3728	56	14.5602
25	36.6651	41	24.6406	57	13.9888
26	35.9006	42	23.9126	58	13.4340
27	35.1372	43	23.1840	59	12.8953
28	34.3750	44	22.4713	60	12.3719
29	33.6143	45	21.7592		
30	32.8071	46	21.0538		
31	32.0974	47	20.3555		
32	31.3412	48	19.6653		
33	30.5869	49	18.9841		
34	29.8343	50	18.3129		
35	29.0841	51	17.6526		

APPENDIX VII

PROJECTED PENSION EXPENSE AS PERCENTAGE OF REVENUE

The projected Pension payment expense as % of annual Revenue over the next 30 years if it grows at the rate of 8%, 10% or 12% per annum would be as follows:

Year	Projected Revenue @ 8% growth	Total Pension Expense	Pension Expense as % of Revenue	Projected Revenue @ 10% growth	Total Pension Expense	Pension Expense as % of Revenue	Projected Revenue @ 12% growth	Total Pension Expense	Pension Expense as % of Revenue
2010 - 11	381.2	29.7	8%	381.2	29.7	8%	381.2	29.7	8%
2011 - 12	411.7	31.3	8%	419.32	31.3	7%	426.94	31.3	7%
2012 - 13	444.63	36.0	8%	461.25	36.0	8%	478.18	36.0	8%
2013 - 14	480.2	40.6	8%	507.38	40.6	8%	535.56	40.6	8%
2014 - 15	518.62	46.0	9%	558.11	46.0	8%	599.83	46.0	8%
2015 - 16	560.11	51.5	9%	613.93	51.5	8%	671.8	51.5	8%
2016 - 17	604.92	57.6	10%	675.32	57.6	9%	752.42	57.6	8%
2017 - 18	653.31	64.5	10%	742.85	64.5	9%	842.71	64.5	8%
2018 - 19	705.57	71.8	10%	817.14	71.8	9%	943.84	71.8	8%
2019 - 20	762.02	80.5	11%	898.85	80.5	9%	1,057.10	80.5	8%
2020 - 21	822.98	93.5	11%	988.73	93.5	9%	1,183.95	93.5	8%
2021 - 22	888.82	100.5	11%	1,087.61	100.5	9%	1,326.02	100.5	8%
2022 - 23	959.93	118.0	12%	1,196.37	118.0	10%	1,485.15	118.0	8%
2023 - 24	1,036.72	130.6	13%	1,316.01	130.6	10%	1,663.36	130.6	8%
2024 - 25	1,119.66	146.1	13%	1,447.61	146.1	10%	1,862.97	146.1	8%
2025 - 26	1,209.23	167.8	14%	1,592.37	167.8	11%	2,086.52	167.8	8%
2026 - 27	1,305.97	185.9	14%	1,751.60	185.9	11%	2,336.91	185.9	8%
2027 - 28	1,410.45	202.2	14%	1,926.76	202.2	10%	2,617.33	202.2	8%
2028 - 29	1,523.28	230.3	15%	2,119.44	230.3	11%	2,931.41	230.3	8%
2029 - 30	1,645.15	247.8	15%	2,331.38	247.8	11%	3,283.18	247.8	8%
2030 - 31	1,776.76	263.6	15%	2,564.52	263.6	10%	3,677.17	263.6	7%
2031 - 32	1,918.90	282.2	15%	2,820.98	282.2	10%	4,118.43	282.2	7%
2032 - 33	2,072.41	304.2	15%	3,103.07	304.2	10%	4,612.64	304.2	7%
2033 - 34	2,238.20	322.8	14%	3,413.38	322.8	9%	5,166.15	322.8	6%
2034 - 35	2,417.26	349.3	14%	3,754.72	349.3	9%	5,786.09	349.3	6%
2035 - 36	2,610.64	373.7	14%	4,130.19	373.7	9%	6,480.42	373.7	6%
2036 - 37	2,819.49	407.4	14%	4,543.21	407.4	9%	7,258.08	407.4	6%
2037 - 38	3,045.05	435.7	14%	4,997.53	435.7	9%	8,129.04	435.7	5%
2038 - 39	3,288.65	477.0	15%	5,497.28	477.0	9%	9,104.53	477.0	5%
2039 - 40	3,551.75	523.7	15%	6,047.01	523.7	9%	10,197.07	523.7	5%

APPENDIX VIII

FUNDING OF GP FUND

The amount of General Provident Fund payment of an employee is the accumulated contributions with interest deducted from his/her salaries during the service. There are no GP Fund assets at present and the amount of total accumulated balances works out to **Rs.86.9 billion** as at the end of fiscal year 2009-10.

The growth in GP Fund balances on both nominal and real basis is as follows:

Nominal Basis

Year	Total Annual Contribution	Total Interest Income	Estimated GPF Liability at year End
2009 – 10			86.9
2010 – 11	5.4	10.4	95.4
2011 – 12	6.0	11.8	109.0
2012 – 13	6.7	13.4	124.4
2013 – 14	7.4	15.3	141.5
2014 – 15	8.1	17.3	160.5
2015 – 16	8.9	19.5	181.5
2016 – 17	9.8	22.0	204.6
2017 – 18	10.9	24.8	229.9
2018 – 19	11.9	27.8	257.7
2019 – 20	13.1	31.1	288.4
2020 – 21	14.4	34.7	320.5
2021 – 22	15.8	38.5	356.2
2022 – 23	17.3	42.7	392.3
2023 – 24	18.8	47.0	421.8
2024 – 25	20.2	50.4	452.4
2025 – 26	21.8	54.0	482.9
2026 – 27	23.4	57.5	517.3
2027 – 28	25.2	61.5	555.8
2028 – 29	27.2	66.0	595.6
2029 – 30	29.5	70.7	646.4
2030 – 31	32.1	76.7	708.8
2031 – 32	35.2	84.1	782.2
2032 – 33	38.8	92.8	866.6
2033 – 34	42.7	102.9	964.9
2034 – 35	46.9	114.5	1,070.5
2035 – 36	51.6	127.1	1,189.3
2036 – 37	56.4	141.2	1,317.5
2037 – 38	62.0	156.3	1,461.2
2038 – 39	68.2	173.3	1,617.7
2039 – 40	74.8	191.7	1,784.9

Real Basis (assuming 2009-10 as the base year)

Year	Total Annual Contribution	Total Interest Income	Estimated GPF Liability at year End
2009 - 10			86.9
2010 - 11	5.4	1.7	87.1
2011 - 12	5.6	1.8	91.0
2012 - 13	5.7	1.9	95.0
2013 - 14	5.8	1.9	99.0
2014 - 15	5.9	2.0	102.8
2015 - 16	6.1	2.1	106.7
2016 - 17	6.2	2.2	110.4
2017 - 18	6.3	2.2	113.9
2018 - 19	6.5	2.3	117.3
2019 - 20	6.6	2.3	120.6
2020 - 21	6.7	2.4	123.3
2021 - 22	6.8	2.5	126.1
2022 - 23	6.9	2.5	127.9
2023 - 24	6.9	2.5	126.8
2024 - 25	6.9	2.5	125.5
2025 - 26	6.9	2.5	123.7
2026 - 27	6.8	2.4	122.5
2027 - 28	6.8	2.4	121.7
2028 - 29	6.8	2.4	120.7
2029 - 30	6.8	2.3	121.1
2030 - 31	6.9	2.3	122.8
2031 - 32	7.0	2.4	125.3
2032 - 33	7.1	2.4	128.3
2033 - 34	7.3	2.5	132.0
2034 - 35	7.4	2.5	135.4
2035 - 36	7.5	2.6	139.1
2036 - 37	7.6	2.6	142.4
2037 - 38	7.8	2.7	146.1
2038 - 39	7.9	2.8	149.6
2039 - 40	8.0	2.8	152.8

The Funding approach adopted by the Govt. To fund GP Fund liabilities is that the Govt. would make contributions deducted from the salaries of the employees to the Fund on regular basis and amortize the accrued liability over a period of 30 years.

The GP Fund contributions for next 30 years under the adopted funding strategy would be as follows:

Year	Past Liability Amortization Instalment	Annual Regular Contribution deducted from Salaries	Total Amount of Contribution to GP Fund
2010 - 11	2.0	5.4	7.4
2011 - 12	2.0	6.0	8.0
2012 - 13	3.0	6.7	9.7
2013 - 14	3.0	7.4	10.4
2014 - 15	4.0	8.1	12.1
2015 - 16	5.1	8.9	14.0
2016 - 17	6.2	9.8	16.0
2017 - 18	7.4	10.9	18.3
2018 - 19	8.7	11.9	20.6
2019 - 20	10.1	13.1	23.2
2020 - 21	11.6	14.4	26.0
2021 - 22	13.2	15.8	29.0
2022 - 23	14.9	17.3	32.2
2023 - 24	16.7	18.8	35.5
2024 - 25	18.6	20.2	38.8
2025 - 26	20.7	21.8	42.5
2026 - 27	22.9	23.4	46.3
2027 - 28	25.2	25.2	50.4
2028 - 29	27.7	27.2	54.9
2029 - 30	30.4	29.5	59.9
2030 - 31	33.3	32.1	65.4
2031 - 32	36.3	35.2	71.5
2032 - 33	39.6	38.8	78.4
2033 - 34	43.1	42.7	85.8
2034 - 35	46.8	46.9	93.7
2035 - 36	50.8	51.6	102.4
2036 - 37	55.1	56.4	111.5
2037 - 38	59.6	62.0	121.6
2038 - 39	64.4	68.2	132.6
2039 - 40	69.6	74.8	144.4

APPENDIX IX

FUNDING OF PENSION FUND

In view of the expected increase in annual pension benefit payments, Punjab Government has set up a Pension Fund so that a portion of pension payments can be financed directly from the Fund and the burden on provincial revenue can be reduced.

The Punjab Pension Fund Act, 2007 was officially enacted (after approval from the Provincial Legislature) on March 7, 2007. Funding of the Pension Fund is to be made through budgetary allocations.

According to the funding strategy adopted by Punjab Government, Pension Fund is accumulated at a relatively low rate in first few (say 5) years and then earnings from the Fund will be used to make payments in excess of expectations (if any) to make pension payments a smooth % of the revenue of Government of Punjab. For instance, the pension payments during a fiscal year are approximately 8% of the Revenue. If pension payments during any fiscal year is significantly in excess of 8% of Revenue due to high turnover of the employees, the additional payments may partially or fully funded by the Pension Fund assets.

As per the funding strategy:

- annual contribution of Rs.2 billion each during 2010-11 & 2011-12, Rs.3 billion each during 2012-13 & 2013-14, Rs. 4 billion during 2014-15 will be made to the Pension Fund (i.e. the next 5 years);
- no payments will be made from the Fund during the accumulation period;
- after accumulation period, 5% of Basic Salaries will be contributed annually to the Fund; and
- the Fund will meet pension payments from the total investment income earned on the accumulated capital and annual contributions from year 2015-16;

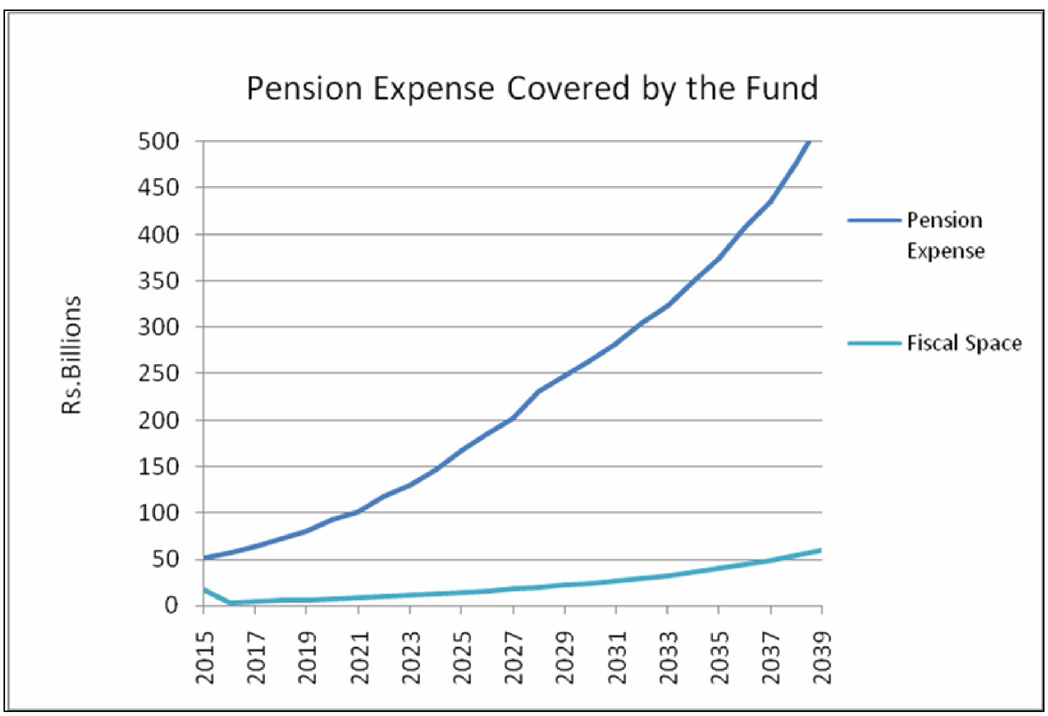
the percentage of pension cash flows met is given in the following table:

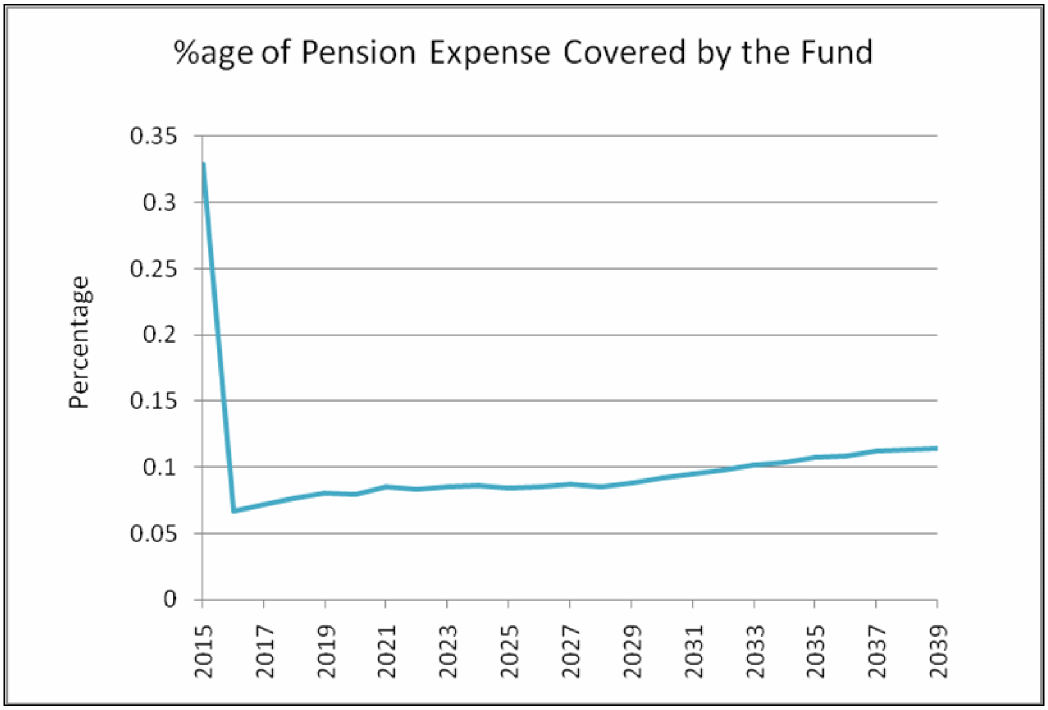
(Rs. Billion)

Year	Pension Expense	Contribution to the Fund	Return on Pension Fund OR Fiscal Space generated	Cumulative Contribution	Payment from the Fund	Payment of Pension Liability met by the Govt.	%age of Pension Liability covered by Fund
2010 – 11	29.7	2.0	1.4	15.5	NIL	29.7	NIL
2011 – 12	31.3	2.0	1.9	19.4	NIL	31.3	NIL
2012 – 13	36.0	3.0	2.3	24.7	NIL	36.0	NIL
2013 – 14	40.6	3.0	3.0	30.6	NIL	40.6	NIL
2014 – 15	46.0	4.0	3.7	38.3	NIL	46.0	NIL
2015 – 16	51.5	6.0	4.6	32.0	16.9	34.6	33%
2016 – 17	57.6	6.6	3.8	38.6	3.8	53.7	7%

2017 – 18	64.5	7.2	4.6	45.8	4.6	59.8	7%
2018 – 19	71.8	7.9	5.5	53.7	5.5	66.3	8%
2019 – 20	80.5	8.6	6.4	62.3	6.4	74.1	8%
2020 – 21	93.5	9.4	7.5	71.7	7.5	86.0	8%
2021 – 22	100.5	10.2	8.6	81.9	8.6	91.9	9%
2022 – 23	118.0	11.1	9.8	92.9	9.8	108.2	8%
2023 – 24	130.6	12.0	11.2	105.0	11.2	119.5	9%
2024 – 25	146.1	13.1	12.6	118.1	12.6	133.5	9%
2025 – 26	167.8	14.2	14.2	132.3	14.2	153.6	8%
2026 – 27	185.9	15.4	15.9	147.7	15.9	170.1	9%
2027 – 28	202.2	16.7	17.7	164.5	17.7	184.5	9%
2028 – 29	230.3	18.2	19.7	182.7	19.7	210.6	9%
2029 – 30	247.8	19.8	21.9	202.5	21.9	225.9	9%
2030 – 31	263.6	21.6	24.3	224.1	24.3	239.3	9%
2031 – 32	282.2	23.7	26.9	247.8	26.9	255.3	10%
2032 – 33	304.2	26.0	29.7	273.8	29.7	274.5	10%
2033 – 34	322.8	28.7	32.9	302.5	32.9	290.0	10%
2034 – 35	349.3	31.7	36.3	334.2	36.3	313.0	10%
2035 – 36	373.7	35.1	40.1	369.3	40.1	333.6	11%
2036 – 37	407.4	39.0	44.3	408.3	44.3	363.1	11%
2037 – 38	435.7	43.3	49.0	451.6	49.0	386.7	11%
2038 – 39	477.0	48.1	54.2	499.7	54.2	422.8	11%
2039 – 40	523.7	53.5	60.0	553.2	60.0	463.7	11%

The fiscal space generated under this case for 2015-16 is Rs.16.9 billion which is 33% of the total Pension expense during the year. The fiscal space generated during the next 25 years ranges from 7% to 12% of the annual Pension expense.




%age of Pension Expense Covered by the Fund
Percentage
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
2015
2017
2019
2021
2023
2025
2027
2029
2031
2033
2035
2037
2039

APPENDIX X

ASSUMPTIONS FOR PROJECTING FUNDING OF PENSION AND GP FUND LIABILITIES (AS USED IN 2009 VALUATION)

The projections for funding the Pension and General Provident Fund liabilities were prepared based on the following assumptions:

i. Punjab Government Revenue:

Punjab Government Revenue for the year 2008-2009, based on the information provided by FD, is assumed to be **Rs.315 billion**.

ii. Growth Rate of Punjab Government Revenue:

Punjab Government Revenue is assumed to grow at 10% per annum. Consequently the Punjab Government Revenue for the year 2009-2010 is assumed to be **Rs.347 billion**.

iii. Revenue Surplus:

The amount of Revenue Surpluses, provided by Finance Department (FD) for the years 2009-10 and 2010-11 is given in the table below:

Year	Revenue Surplus (Rs. billion)
2009-10	154
2010-11	162

iv. Growth Rate of Revenue Surplus:

It has been assumed, as per the input from Finance Department that Revenue Surplus will increase at the rate of 10% per annum from 2011-12 onwards.

v. Growth Rate of Monthly GP Fund Subscription:

Rate of Increase in Monthly GP Fund Subscription of 8% per annum has been assumed.

vi. Return on Investments:

Capital Injections/ contributions in the Fund are assumed to draw a return of 12% per annum.

vii. Comparison of nominal versus real assumptions

Assumption	Nominal	Real (in excess of inflation)
Pension Indexation Rate	8%	-2%
Salary Increase Rate	11%	1%
Growth Rate of Punjab Government Revenue	10%	0%
Growth Rate of Revenue Surplus	10%	0%
Growth Rate of Monthly GP Fund Subscription	8%	-2%
Return on Investments	12%	2%