
EMPLOYEES' PENSION SCHEME, 1995

9TH VALUATION REPORT

AS ON 31ST MARCH 2006

**P.A.BALASUBRAMANIAN,
ACTUARY.**

P.A.BALASUBRAMANIAN

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To

Employees' Provident Fund Organisation
(Ministry of Labour, Govt. of India)
Bavishya Nidhi Bhawan
14, Bhikaji Cama Place
New Delhi 110066

Dear Sirs

As required in your communication ref. No. Actuarial/ 18(1) / 2005 / 25605 dated 20th February,2008 I have completed the 9th Valuation of Employees' Pension Scheme, 1995 as on 31 st March, 2006.I have pleasure to submit the Valuation Report

I wish to acknowledge with thanks cooperation extended to me by all concerned Officers and Staff in providing required data and information for the valuation exercise..

Thanking you

Yours faithfully



P.A.Balasubramanian

Date: May 5, 2009

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EMPLOYEES' PENSION SCHEME, 1995

REPORT OF ACTUARIAL VALUATION
AS ON 31ST MARCH, 2006

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**Report of Actuarial Valuation as on 31 March 2006 of
EMPLOYEE PENSIONS SCHEME, 1995**

1. Introduction

I have been requested by EPF Organization vide communication no. Actuarial/18(1)2005/25605 dated 20th February 2008 to carry out valuation of EPS 95 as on 31 March 2005, 2006 and 2007 and submit the report.

The purpose of valuation is to value the assets and liabilities of EPS '95, review the rate of contribution and quantum of pension and other benefits and to determine the surplus/deficit of the EPS fund and in case of surplus recommend the rate of discretionary additions to the basic pension payable for the valuation period.

The valuation is being made pursuant to section 32 of EPS '95 Scheme.

Current valuation is made as on 31 March 2006. Previous annual valuation was made as on 31 March 2004 by Mr.M.G. Diwan (Actuary).

2. Executive Summary of 9th Valuation Report As On 31st March, 2006

I have completed the valuation of assets and liabilities of EPS '95 as on 31st March, 2006 for which data of members and pensioners were made available.

2.1. Members and Pensioners

Of the 3,23,88,660 members of the Scheme as on 31st March, '06 individual member data was provided for 1,57,61,071 members. Out of this data, only data in respect of 13,37,398 members were found consistent and useable for valuation calculations. Efforts to supplement more data complete in all respects were not successful.

As for Pensioners, data in respect of 8,83,401 (out of actual number 13,56,216) and 5,44,292 beneficiary pensioners (out of actual number 9,68,775) were provided to determine all Pensioners' liability.

With the limitation in data availability (very severe in respect of current members) as mentioned above, valuation of liability of the Pension Scheme had to be projected to arrive at an estimate based on actual valuation using available data and assumptions on demographic and economic factors considered reasonable and appropriate to the Scheme. Owing to data constraint there is an element of uncertainty as to the value of total liability of the Scheme and the resultant financial position of EPS'95 Fund.

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2.2. Receipts and Payments and assets of the Scheme

During the inter-valuation period, for the two Financial Years 2004-'05 and 2005-'06 contribution income was Rs. 6512 Cr and Rs. 6885 Cr and investment income was Rs. 4860 Cr and Rs. 5634 Cr with total benefit outgo being Rs.2627 Cr and Rs. 2981 Cr respectively. As a result the Fund increased to Rs.63806 Cr and Rs.73236 Cr as on 31st March, 2005 & 2006 respectively.

The assets of the Schemas as on 31st March,2006 (Rs 75205 Cr) comprise Deposit in Public Account Rs. 29107 Cr, investments in securities Rs. 44114 Cr and cash etc. Rs.75 Cr. The return on the assets was 8.36% and 8.44% during 2004-'05 and 2005-'06 respectively The investments in Securities to a greater extent (80 %) have outstanding term to redemption / maturity of less than 10yrs with weighted average term of 7.4yrs. This is too short compared to average duration of emerging liabilities which is quite long. There is mismatch of duration of assets and liabilities exposing the Fund to mismatch risk and uncertainty of the rate of return .A review of investment management is recommended to streamline the same with clear objective to manage efficiently and effectively so as to optimize the returns having regard to asset liability matching requirement and also taking into consideration investment guidelines under National Pension Scheme regulated by PFRDA.

Consistent with the valuation of liability , assets were valued at Book Value

2.3. Valuation Basis

Assumptions have been made as judged reasonable and appropriate, having regard to the nature and term of the liabilities and assets and expected trend over the future of the elements forming the valuation basis.

Main assumptions:

Interest Rate: 8% for pre retirement period and 7% for post vesting period.

Salary increase: 6% p.a. during the period of service.

Withdrawals: Smoothed rates based on general industry experience.

Mortality Rates: Pre retirement : LIC assured lives Mortality Table (94-96)
Post vesting: LIC annuitants Mortality Table (96-98)

2.4. Valuation Results

Total value of liability in respect of current Members and Pensioners and Beneficiary Pensioners net of value of future contributions of current Members as per valuation projection is Rs.95895 cr. As on 31 st March,2006. The Scheme

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Fund as on that date is 73236 cr. resulting in deficit of Rs.22659cr compared to the deficit of Rs.22021 cr. as at 31st March 2004. The current deficit is the net effect of several factors mainly:

- i) Increase in membership from 28090458 to 32388660 and of pensioners from 1750353 to 2324991. (Increase in Liability)
- ii) The continuing effect of raised pensionable salary limit from Rs.5000/- to Rs.6500/- made effective for all members without infusion of additional funds to meet the higher liabilities.
- iii) Removal of options to receive return of capital, increase of the reduction factor on early retirement pension, reduction in factors applicable to benefits to family pension scheme members and benefit payable on exit from employment prospectively from specified dates in financial year 2008-09 (Reduced Liability for current members)
- iv) Inadequacy of contribution rate owing to changed economic scenario and membership behaviour especially related to exit from the scheme. (resulting in funding deficit)
- v) Constraints on data availability.(Increased uncertainty as to the value of the liability projected for the actual number of members and pensioners).

Measures for corrective action are suggested in the following para.

2.5. Recommendations:

- (a) The existing contribution rate of 9.49% of pensionable salary (8.33% by Employer and 1.16% by the Government) will need to be raised to 11.75%
- (b) Consider raising the superannuation age to 60 years from 58 years. However the effect on the Liability will depend on how the change will be structured, having regard to the expectation of members.
- (c) Streamline investment management with clear objective to optimize returns having regard to assets-liability matching requirements and risk-reward consideration
- (d) Suitable mechanism to be put in place for effective control on contributions receivable and benefit outgo especially pensions.
- (e) Large Scale improvements MUST be made as regards data maintenance and availability for periodical valuation. It is essential to make available data for 100% membership and pensioners and required individual member / pensioner data in respect of all entrants/ exits each year. To achieve this objective immediate steps are required to set up Statistical Section at the Head Quarters and the Regional Offices of EPFO adequately manned with suitable skill set, supported by IT infrastructure, with responsibility to capture all required information correctly for every member and pensioner and update information periodically to serve the

- purpose of administration and valuation
- (f) Any review of the Scheme (including measures (a) and (b) above) should be based on appropriate actuarial assessment with complete and consistent data made available for the purpose.. .

3. Statement of Benefits Valued (Sections' reference is to EPS '95 Scheme)

Superannuation pension (section 12 & 13)
Early retirement pension (section 12)
Disability pension (section 15)
Death Benefit (spouse's pension and children's pension/ Pension to nominees or parents) (section 16)
Withdrawal benefit (deferred pension/return of contributions) (section 12 & 14)
Current Pension (to member pensioners and beneficiary pensioners)

Details of various benefits applicable on the happening of certain contingencies are covered in sections (12) to (16) of the Scheme.

4. Membership

- 4.1. As per information available from EPFO, the number of members covered under the scheme as on 31 March 2004 was 28,090,458.
- 4.2. During the financial year 2004-05 and 2005-06 there has been addition of new members joining the scheme and reduction in members due to exit by way of death in service, superannuation, early retirement, withdrawals and there was net increase of 4,298,202 members resulting in total members increasing to 3,23,88,660 as on 31st March 2006 as per details below.

4.3. Current Members

Table 1

Mode of Exit/Entry	FY 2004 – 05	FY 2005 – 06
Death in service	43633	41172
Superannuation	68321	125902
Retirement	289600	172156
Disablement retirement	213	879
Withdrawals (with deferred pension) and Withdrawals (with return of contribution)	1819431	1302835
Total Exits	2221198	1642944
Total Membership net of exits	25869260	29506105
New members during the financial year	5279789	2882555

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No of members as on 31 st March	3,11,49,049	3,23,88,660
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4.4. Current Member Pensioners and Beneficiary Pensioners

On 31.03.04 there were 17,50,353 pensioners of different categories receiving pensions. The number of pensioners has increased to 23,24,991 as on 31.03.2006 as per details below.

Table 2

Category	As at 31.03.04	Additions 2004-06	Exits 2004-06	As at 31.03.06
Member Pensioners	962999	434951	41734	1356216
Widow(er) pensioners	431642	93217	12031	512828
Children Pensioners	348450	135562	38865	445147
Orphan Pensioners	7262	4792	1254	10800
Nominated/Current Pensioners	-	-	-	-
Total	1750353	668522	93884	2324991

5. Receipts and Payments

5.1. Receipts and payments in respect of EPS '95 Fund for the two financial years 2004-05 and 2005-06 are given in table 3 below.

Table 3

Amounts in Rs Crore

Receipt	FY 04-05	FY 05-06	Payment	FY 04-05	FY 05-06
1. Opening Balance	55098.61	63805.70	Withdrawal/ Retirement Benefit	909.10	1024.19
2. (a) Contributions - Employers	5911.85	6135.45	Life Assurance benefit	0.02	0.36
2. (b) Contributions - Government	57.09	0.00	Pension	1717.93	1955.95
2. (c) Arrears by Government	542.91	750.00	Total benefit outgo	2627.05	2980.50
Total contributions (2a + 2b + 2c)	6511.85	6885.45	Expenses	55.07	87.32
3. Interest on investments	4860.11	5634.21	Accrued Interest	86.52	86.00
4. Other receipts - contribution account	103.95	64.60	Other Payments	0.20	0.55

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			Closing Balance	63805.70	73235.58
Total*	66574.52	76389.95	Total	66574.52	76389.95

(Source: as per audited accounts)

* subject to rounding off error

5.2. Statement of Assets

Table 4

Particulars	As on 31.03.05 (amount in Rs. Crs)	As on 31.03.06 (amount in Rs. Crs)
Deposits in Public Account	25989.93	29016.63
Central/State Government securities/PSU Bond & PSB FD	37528.39	44113.69
Cash/Remittance in transit	231.11	74.62
Total	63749.43	73204.94

(Source: as per audited accounts)

5.3. Inter-valuation period

During this inter-valuation period 01.04.04 to 31.03.06, 74078 new establishments were added to the EPFO resulting in additional membership to the Scheme of 81, 62,344 persons.

The annual contribution (including Govt contribution) has increased from 5492.55cr (2003-'04) to Rs 6885.45 crs arising from net addition to membership (from entry of members from new establishments as well as addition of new members in existing covered establishments) and salary increases.

There has been no change in rates of contribution to EPF '95 during the inter-valuation period. Employer contribution continued to be made at 8.33% of pensionable salary and government contribution at 1.16% of pensionable salary (The valuing actuary as a result of valuation as on 31.03.04 recommended employer contribution to be raised to 10.33%).

During the inter-valuation period 2004-06 total income by way of contribution was Rs 13397 Cr, investment income Rs 10494 Cr and benefit outgo Rs 5608 Cr. The Fund has increased from Rs.55099 Cr (31 March, '04) to Rs 73236 Cr as on 31 March 2006.

6. Data for Valuation

6.1. Current Members

6.1.1. Data compiled from 107 offices of EPFO covering 15761071 members and from 83 offices covering withdrawals with payment of cash benefit

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(cumulative for all years up to date) of 43,50,290 members, as on 31.03.06 were submitted for processing.

6.1.2. On checking the data for completeness of all information required for calculation of the liability for pension, death benefit, and withdrawal payment to current members, only 1280233 individual data records of members were found complete and useful for making valuation of liability. High volume of data did not contain basic information like date of birth, date of joining FPS/EPS, pensionable salary etc. After discussion and guidance provided in this regard to make available as much possible complete data, supplementary data covering 57165 members could only be added. I was given to understand that there was no scope for completing the blank fields in the rest of the (incomplete) data provided, though essential.

6.1.3. I have been asked to complete the valuation exercise with the data constraint explained above.

6.1.4. As against 323.89 lakhs active members of EPS '95 as on 31.03.06 useable data for valuation (13.37 lakhs) is 4.1% Representativeness of data processed for valuation is unknown and in projecting the liability for the actual number of members based on this small volume of data results in greater uncertainty of the actual liability. In making the projection there is implicit assumption that the member profile especially as to actual distribution by age, service and pensionable salary and by gender and marital status of members is no different from what the valuation data file represents.

6.2. Current Pensioners

6.2.1. Member pensioners' data found complete for valuation covers 883401 pensioners compared to actual pensioners 13,56,216 (65% of actual numbers). Beneficiary pensioners' data found complete for valuation covers 544292 pensioners as against actual number 9,68,775 (56% of actual numbers).

6.2.2. Based on data valued, liability for actual number of current member pensioners and beneficiary pensioners has been projected. In the process, there is implicit assumption that distribution by age, gender, amount of pension and pension option exercised of the data set represents the characteristics of the class of actual pensioner group. These results in some extent of uncertainty in value of actual liability though the probability of large deviation is much lower as compared to liability determined in respect of current members.

6.3. Exit Members

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6.3.1. In terms of the EPS '95 in respect of members who withdraw from the scheme on resignation with scheme certificate or eligibility for deferred pension, liability for deferred pension needs to be determined for those surviving as on each valuation data. The actual number of such members is not available. Members for which data are made available are considered and deferred pension liability is calculated and included in the liability for withdrawals benefit.

6.4. I have relied completely on EPFO as to correctness of the data provided and applied valuation checks to remove inconsistent data. Based on the processing of validated data the following average parameters emerge:

- Average age of Members: 36.38yrs
- Average past service in EPS'95: 5.78yrs
- Average pensionable salary (p.m): Rs 2789

In the absence of information on the above for the total membership, consistency of valuation data set could not be checked, though found consistent with similar parameters arising in the last valuation.

7. Experience Analysis

7.1. A valuing actuary is required to analyze the actual experience as regards the demographic and economic factors forming the basis for determining the liability since the last valuation, so as to take note of any significant changes and accordingly consider changes in any of the factors to be made for current valuation of liabilities.

The factors are:

7.2. Demographic factors:

- 1. Mortality rate of current members
- 2. Mortality rate of current pensioners
- 3. early retirement rate (including disablement)
- 4. superannuation rate
- 5. other exits (withdrawals)

7.3. Economic factors:

- 1. Rate of interest
- 2. Rate of salary increase including inflation

7.4. No data has been made available with required information (as not maintained) to enable analysis of experience related to demographic factors and salary increases, to be carried out.

8. Valuation Basis

8.1. Demographic Factors

Considering the size of membership of the scheme and pensioners and beneficiaries maintenance of required data (complete and accurate) on continuing scale would have facilitated experience analysis being made for the scheme relating to mortality rate, withdrawal rate, early retirement rate, disablement rate and mortality rate of member pensioners and beneficiary pensioners and thus serve as a basis for assumptions on these factors for the future. There is no mechanism in EPFO to ensure such data maintenance and there is a lack of information to base assumptions on the scheme experience. I have considered the profile of membership of the scheme which has a mix of industries - small, medium and large establishments, unskilled, semi-skilled and skilled workers, and administrative employees spread over the country, and aggregate exit information as provided by the office. I have also considered published table especially of mortality of assured life, annuitants of LIC and industry experience of withdrawals and early retirements. Having regard to the above considerations I have used my best judgment to arrive at the assumptions as under:

8.1.1. Mortality rate of current members:

Latest available published table of assured lives is LIC 94-96. More than 10 years has elapsed since then and the overall trend in mortality is improvement in survival rates (reducing death rates). However having regard to class of lives covered in the scheme (mentioned above) I consider it is appropriate to use LIC 94-96 mortality table (annexure 1) without adjustment (effectively considering higher mortality rates compared to latest trends).

8.1.2. Mortality rate of pensioners and beneficiary pensioners:

In the absence of information on the scheme experience, I have used LIC annuitants table LIC (96-98) (annexure 2) being a standard published mortality table and more reliable at ages above 60 yrs.

8.1.3. Retirement Rates

Having regard to the nature of establishments where the members are employed and limited information on age wise retirements indicative of trend and overall industry experience I have provided for distribution of retirements at 40% at age 51 and 40% at age 58 and the rest uniformly spread between age 52 to 57.

8.1.4. Withdrawal Rates

In the absence of experience data from the Scheme, based on overall industry experience and the nature of establishments where members are employed I have used withdrawal rates as in annexure 3.

8.2. Economic Assumptions

8.2.1. Interest Rate

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- 8.2.1.1. The assets of the pension scheme as on 31.03.06 comprise of deposit in public account (29.62%) on which the government credit interest at a fixed rate of 8% pa and investment in securities in central government, state government and PSUs of short, medium and long term and fixed deposits of short/medium term (60.24%) carrying coupon/interest rate respectively at different rates. Cash and remittance in transit accounts for the balance of assets i.e. 0.14%
- 8.2.1.2. The return on the assets (calculated using total earnings on the assets and using average assets during the accounting year) was 8.36% and 8.44% during 2004-05 and 2005-06 respectively.
- 8.2.1.3. In determining the rate of interest for valuation of liabilities, while return on existing assets is kept in view, the return expected on reinvestment of maturing securities in the future needs to be taken into account. Besides return expected on the investment of the excess receipts over payments of the pension scheme in the future is an important factor. The interest on deposits in public account currently stands at 8% pa. While in the immediate future it may be assumed to continue at this rate, the likelihood of a review in future aligned to government's fiscal policy leading to lower rate of interest on such deposits in public account needs to be kept in view.
- 8.2.1.4. The return on investments in government securities and PSU securities and fixed deposits of PSU banks are subject to fluctuations in future because of influence of market forces. The trend as Indian economic factors indicate is lower rate of interest over the long term in the future. There is one Fund for the EPS'95 the assets of which cover the prospective pension liability of current members as well as pension outgo for current pensioners. While liability duration for current members is quite long, for current pensioners' liability duration is short as there is immediate cash outgo year to year implicitly involving disinvestment of assets supporting this liability. Even in the existing context of all assets being in a single Fund it would entail investments in shorter term securities to the extent required to meet the asset matching requirement for Pensioners' liability. As a continuing scheme using current income flow to meet the current pension outgo implies inter generation transfer of assets covering liability of the current members to current Pensioner group with consequent opportunity cost devolving on current members (reflecting in lower returns on the invested assets of this group)
- 8.2.1.5. Further in respect of current members pension vests on superannuation/ early retirement which is at a more distant future. Determination of post vesting Pension liability involves using an interest rate to discount the vested pension for lifetime to the valuation

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date. Being a long distant future, uncertainty increases as to the rate of return to be expected and this risk should be appropriately reflected in deciding rate of interest to discount post vesting liability of current members.

8.2.1.6. For the above reason as a matter of prudence it is required to use a lower discount rate for valuing liability of current pensioners and post vesting pension cost of current members.

8.2.1.7. Going by the current pattern of investments of pension scheme (all of fixed interest types), having regard to the above considerations I consider valuation rate of interest of 8% during contributory service of members and 7% during post vesting (pension payment) period would not be unreasonable. This rate may need to be reviewed in the future valuation depending on the investment scenario as it emerges having regard to asset-liability matching requirement of the Scheme.

8.2.2. Salary Increases

No data with required information is available to study the trend of increase in pensionable salary of members. As mentioned in earlier sections of this report, I considered the type of establishments covered, the profile of employees and skills sets, the movement in average pensionable salary on aggregate basis and a sample study of age and salary distribution over recent two year period as per the data provided and relevant general experience as regards salary increases. Having regard to the above factors and based on my discussion with EPFO, a view was expressed that salary increase at 6% pa over the future would not be inappropriate. Accordingly I have assumed salary increase at 6% pa over the future.

8.3. Other Assumption

There are elements which include proportion married, age difference of member and spouse, number of children and their ages, remarriage rates which need consideration in the valuation liabilities. There is no data relating to the scheme to give indication of the experience on the above elements. I have considered the assumption made in the previous valuation and related information from general population and allowed for this broadly. These assumptions have a minor effect only on the valuation of liabilities.

8.4. Valuation of Assets

8.4.1. Assets include Deposits in Public Account Rs. 29016.63 cr (which is credited with fixed rate of interest decided by the Central Government) and investments in Securities Rs. 44113.60 cr which portfolio is managed by SBI (Fund Manager). Investments comprise Central government securities (9.36%) State Govt. Securities (3.27%), State Govt. Development loans guaranteed by State Govt. (5.87%) and Bonds and Fixed Deposits in Public

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Financial Institutions (81.50%). These investments carry different coupon rates/ interest rates and varying terms short/ medium/ long.

8.4.2. Of the invested Securities (Rs. 44113.60 cr) 40% mature within 5 years, 40% between 6 to 10 years, 9% between 11 to 15 years and the rest beyond 15 years, the last maturity year being 2036.

8.4.3. Weighted Average Duration of these Securities (face value wise) is 7.4 years. This average duration is too short compared to the average duration of emerging pension liabilities of current members which is quite long taking into account the future service period and lifetime thereafter. This indicates duration mismatch of assets to liabilities which exposes the Fund to the interest rate risk and mismatch risk.

8.4.4. Assets of the Fund are taken on book value basis for the valuation purposes consistent with valuation of liabilities.

8.5. Extent of changes made to assumptions since previous valuation

Table 5

Elements	Basis		Remarks
	3 rd Valuation	Current	
Mortality rates - members	LIC 94-96	LIC 94-96	Nil
Mortality rate - pensioners	LIC 94-96	LIC 96-98	Lower mortality rate (increase in pensioners' liability)
Interest rate	8.5%	8% preretirement period and 7% post retirement period	Reduced rate (liability increases)
Salary Increase	7.5%	6%	Reduced rate (liability decreases)
Withdrawal rates	Industry experience - small establishments (fluctuating rates)	General Industry experience (smoothed rates)	Lower liability

9. Amendments to EPS '95

9.1. Govt of India had issued the following amendments effective from date of publication:

- 1) Gazette Notification No. G.S.R 431(E) dated 15th June, 2007

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The eligible service for superannuation / early retirement pension has been changed to minimum 10 yrs (as against 20 yrs) subject to retirement at the age provided in the Scheme.

2) Gazette Notification No .G.S.R 438(E) dated 9th June, 2008.

Table B giving factors for computation of past service benefit under the ceased Family Pension Scheme for existing members on exit from employment and Table D giving factors for return of contribution on exit from employment have been revised downwards.

3) Gazette Notification No.G.S.R 688(E) dated 26th September, 2008.

Para 12 A and 13 of EPS,'95 have been deleted in effect benefit of commutation and Return of Capital are totally removed for all pensions where commencement of pension is on or after 26th September,2008 and reduction factor for early retirement pension has been increased from 3% to 4% with effect from 26th September,2008.

9.2. Though the valuation exercise is carried out as on 31st March, 2006 the above amendments will have impact on value of retirement and other benefits payable on and from the effective date to current members including Family Pension part applicable to those current members who were covered by FPS, 1971. I have, therefore, for ease of calculation, allowed for the revised scheme provisions as applicable from 1st April of the year following the specified effective date and existing scheme provisions till then in determining future service liability of current members as on valuation date.

10. Valuation results & Observations

10.1. Based on the assumptions mentioned in the earlier paragraphs, the valuation results are given in the table below.

Table 6

	Assets (amount in Rs. Crs)		Liabilities (amount in Rs. Crs)
Scheme assets	73236	Current members:	
Value of future contributions	89737	(a) Pension benefits	122810
		(b) Death benefit	14624
		(c) Withdrawal benefit (including members left with scheme certificate)	28482
		Current Pensioners and beneficiaries	18077
		Expense of administration	809
Deficit	22659	Reserves for inaccuracy in data	830
Total	185632	Total	185632

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10.2. Total value of liability in respect of current Members and Pensioners and Beneficiary Pensioners net of value of future contributions of current Members as per valuation projection is Rs.95895 cr. as on 31 st March,2006. The Scheme Fund as on that date is 73236 cr. resulting in deficit of Rs.22659cr compared to the deficit of Rs.22021 cr. as at 31st March 2004.

10.3. The current deficit is the net effect of several factors, mainly:

- i) Increase in membership from 2,80,90,458 to 3,23,88,660 and of pensioners from 17,50,353 to 23,24,991. (Increase in Liability)
- ii) The continuing effect of raised pensionable salary limit from Rs.5000/- to Rs.6500/- made effective for all members with out infusion of additional funds to meet the higher liabilities.
- iii) Removal of options to receive return of capital, increase of the reduction factor on early retirement pension, reduction in factors applicable to benefits to family pension scheme members and benefit payable on exit from employment prospectively from specified dates in financial year 2008-09 (Reduced Liability for current members)
- iv) Inadequacy of contribution rate owing to changed economic scenario and membership behaviour especially related to exit from the scheme. (resulting in funding deficit)
- v) Constraints on data availability. (Increased uncertainty as to the value of the liability projected for the actual number of members and pensioners).

10.4. Given the quality and low proportion of valid data made available for valuation the above results are indicative of financial position of EPS '95 as obtaining on the date of valuation. The possibility of firmer conclusion on the extent of deficit in the Fund will be enhanced if complete and accurate data of all members and Pensioners and beneficiaries covered by the Scheme are provided to carry out valuation of liability as also the required individual data to make experience analysis.

10.5 Sensitivity of Valuation results

Valuation results are particularly sensitive to assumptions on interest rates, salary increase rate and withdrawal rates as illustrated below.

Total value of liability (current members, member pensioners and beneficiary pensioners)
Rs. 94256 Cr (A)

Amounts in Rs Crs.

Change in valuation basis	Value of liability	Increase/decrease over (A)	Percentage increase
1. Interest rate falls 1%: Contributory service: 8% to 7%	126974	32718	35%

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Post vesting: 7% to 6%			
2. Salary rate rises 10% (from 6% to 6.6%)	96147	1891	2%
3. Withdrawal rates rise 10%	98594	4338	4.6%

11. Recommendations

1. The current contribution rate of 9.49% of pensionable salary (Employers' 8.33% & Govt 1.16%) is inadequate and will require revision upwards to 11.75% so that the deficit is met by higher future contribution.
2. Consider raising the superannuation age to 60 years from 58 years. However the effect on the Liability will depend on how the change will be structured, having regard to the expectation of members.

3. Investment Management

Investment of funds needs to be streamlined with clear objectives to manage efficiently and effectively having regard to Asset-Liability matching requirements and optimizing returns on investment to meet the expectation of Scheme members.

The Fund assets are wholly invested in fixed interest instruments. The pension benefits of the Scheme being in real terms (related to salary) though mitigated to some extent by pensionable salary cap of Rs.6500 p.m. it makes sense to invest in real assets like Equities (with prudent investment policy approved by Trustees) as these assets over a long term provide higher returns through dividend income and capital appreciation over fixed interest securities and match the real time cost of Defined Benefit liability and could also give rise to surplus in the fund which may be utilized to meet the expectation of pension increases. It may be worth reviewing the investment strategy for the Pension Fund in light of investment regulations/ guidelines proposed for NPS by PFRDA.

Even within the portfolio of fixed interest securities inclusion of investment in Rated Corporate Bonds/ Debentures and limited trading in Govt. securities will help improve the returns as borne out by the experience of LIC in its management of insurance funds.

4. Control on Fund inflows and outflows

It is not known what process is in place to exercise control on the contribution receivable towards the Pension Scheme from employers in respect of every employee enrolled into the Scheme and if there are gaps in contribution(which need to be treated as provided in the Rules of the Scheme) as this is relevant for allowing past service credit. A comprehensive and properly designed electronic data File relating to every member, Pensioner and beneficiaries capturing basic information (including contribution) required for administration of the Scheme and periodical actuarial valuation, needs to be created and maintained.

There is a need to review the procedure to ensure timely reporting and recording of death of pensioners and beneficiaries as the related control statistics indicate otherwise (which could distort experience analysis).

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5 One time exercise needs to be undertaken with simultaneous setting up of Statistical Section at HQ and all Regional Offices to complete data entry of all physical forms of existing members received at point of entry into the Scheme, initiate validation process to capture missing data. (A separate Note on the set up and functions of Statistical Section is appended as annexure 4). This needs to be time bound so that future valuation may be carried out with complete, accurate and consistent data of all covered by the scheme the results of which would enable drawing firm conclusions on the financial position of the Pension Scheme emerging based on which appropriate review of contribution and benefits could be made.

6. Any improvement to the provisions of the Scheme like increasing the pensionable salary cap (from the existing limit of Rs. 6500) should be considered only after investigation of the financial position of the scheme and evaluation through actuarial valuation.

12. Reliance and limitations

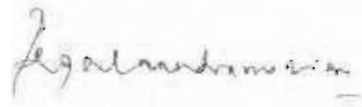
12.1. In producing this report I have relied upon data in CDs and information, both written and verbal, supplied by the officials of EPFO HQ. I relied upon the general completeness and accuracy of this information without independent verification. The accuracy of the results presented in this report is dependent on the accuracy of data and information.

12.2. I have reviewed the data for valuation provided for overall reasonableness and consistency with my knowledge of the EPS'95 and I have not carried out independent checks of the data supplied to me. The conclusions set out in this report are dependent on the accuracy and completeness of the information provided to me and constrained by the limitation of data provided. This report and the opinions and conclusions are for the internal use of EPFO only.

12.3. This report has been prepared on the basis as set out in the report and its annexures. Judgements as to the information contained in the report should be made only after studying the report in its entirety as it may be inappropriate to draw conclusions by review of a section or sections on isolated basis.

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12.4. Actual future results will vary from this report as the results of the valuation have been based on limited data made available and certain assumptions and parameters. Supply of higher volume of complete accurate and consistent data as also deviations from these assumptions and parameters could alter the results significantly. These assumptions and parameters include those which may be influenced by the decisions of the Trustees of EPS'95 Fund (like change of rules of the Scheme) and external factors such as inflation rates, investment yields and general economic environment. The assumptions and parameters and valuation of the Scheme are made on 'continuing scheme' basis.



Dated 2nd May, 2006

P. A. BALASUBRAMANIAN

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ASSURED LIVES
MORTALITY
LIC 94-96

Annexure-1

Age	Death per million	Age	Death per million	Age	Death per million
20	999	51	5819	81	114992
21	1033	52	6443	82	126553
22	1063	53	7116	83	139067
23	1090	54	7839	84	151077
24	1113	55	8611	85	162298
25	1132	56	9433	86	174149
26	1147	57	10294	87	186638
27	1159	58	11025	88	199775
28	1166	59	11951	89	213560
29	1170	60	13073	90	227995
30	1170	61	14391	91	243072
31	1171	62	15904	92	258782
32	1201	63	17612	93	275109
33	1246	64	19516	94	292031
34	1308	65	21615	95	309522
35	1387	66	22724	96	327549
36	1482	67	25617	97	346073
37	1593	68	28823	98	365052
38	1721	69	32372	99	384436
39	1865	70	36294		
40	2053	71	40623		
41	2247	72	45392		
42	2418	73	50639		
43	2602	74	56404		
44	2832	75	62728		
45	3110	76	69655		
46	3438	77	77231		
47	3816	78	85502		
48	4243	79	94519		
49	4719	80	104331		
50	5244				

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ANNUITANTS' MORTALITY LIC 96-98 EXPERIENCE				Annexure-2	
AGE	Deaths per million	AGE	Deaths per million	AGE	Deaths per million
20	919	51	4719	81	77335
21	961	52	5386	82	84210
22	999	53	6058	83	91428
23	1033	54	6730	84	98988
24	1063	55	7401	85	106891
25	1090	56	8069	86	115136
26	1113	57	8710	87	123723
27	1132	58	9397	88	132652
28	1147	59	10130	89	141924
29	1159	60	10907	90	151539
30	1166	61	11721	91	161495
31	1170	62	11750	92	171794
32	1170	63	12120	93	182436
33	1171	64	12833	94	193419
34	1201	65	13889	95	204746
35	1246	66	15286	96	216414
36	1308	67	17026	97	228425
37	1387	68	19109	98	240778
38	1482	69	21534	99	253473
39	1593	70	24301	100	266511
40	1721	71	27410	101	279892
41	1865	72	30862	102	293614
42	2053	73	34656	103	307679
43	2247	74	38793	104	322087
44	2418	75	43272	105	336836
45	2602	76	48093	106	351928
46	2832	77	53257	107	367363
47	3110	78	58763	108	383139
48	3438	79	64611	109	399258
49	3816	80	70802	110	415720
50	4243				

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Annexure - 3					
EPS - '95 Valuation - 31.3.2006					
Assumptions of Rates of withdrawals (including scheme certific					
Age-group	18-26	26-30	31-35	36-40	40-58
Rates (%)	3	4	3	2	0.1

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Annexure-4

Functions of Statistical Section

Regional Offices

1. Collection of data covering required information for administration and actuarial valuation (as per format advised) in respect of every member entered / entering EPS'95 from all the offices under the jurisdiction of each RO of the EPFO.
2. Validation of data and ensuring completeness of information by interaction with the offices concerned.
3. Updation of information in respect of all members and pensioners including beneficiary pensioners) with regard to dynamic information such as change in marital status, salary changes, children status.
4. Updation of member status on continuing basis like death, withdrawal, retirement, disability and status with regard to exit of pensioners.
5. Compiling valid data for actuarial valuation annually and submit to controlling office (Statistical Section).
6. Preparing MIS Statements as per requirement for consolidation and review at controlling office.

Controlling Office (EPFO HQ)

1. Monitor the work of Statistical Section at R.Os and provide direction and guidance.
2. Consolidate MIS Statements of R.Os for review (this will include information on EPS'95 contribution from employers as also outgo for various benefits –pension as well as lump sum)
3. Consolidate valuation data from R.Os, carry out validation checks for consistency accuracy and completeness of data and obtain wherever required, revalidated data from R.Os. Take overall responsibility for submission of all required data for actuarial valuation.
4. Carry out statistical analysis annually related to the following:
 - Distribution of Members by age group \ Pensionable salary\ past pensionable service preferably broad industry group wise.
 - Experience as to death, withdrawal, and retirement of Members according to age at exit and deriving decrement rates at each age (and also duration for withdrawal) with guidance of an Actuary.
 - Analysis of salary increase separately for different employee categories \ industry groups.

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Resources for effective functioning of Statistical Section

Statistical Section at R.Os and controlling office must be provided with required resources like computers and operators to capture and maintain data in electronic form and covered by network to enable effective functioning.

The staff selected for the section should be capable of utilizing computer applications data processing and programming.

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EPS - Valuation -
31.3.2006

Appendix - A

Age-wise distribution of Number, Salary and Salary weighted by
Service

Data available for valuation (Sample Data)

Age	Number	Salary	Service x Salary
18	240	331,629	347,717
19	2,885	3,649,766	4,885,510
20	9,318	11,693,909	19,481,099
21	13,812	19,133,171	37,012,879
22	17,588	27,394,686	59,144,935
23	20,134	35,078,809	82,401,253
24	23,131	43,876,631	116,049,882
25	24,205	48,969,909	141,687,301
26	32,041	59,914,865	195,890,983
27	43,499	60,462,719	220,331,031
28	70,077	144,673,607	261,095,219
29	87,725	169,218,835	286,859,318
30	99,678	268,143,460	739,972,731
31	64,511	194,854,146	742,397,587
32	57,008	166,473,129	781,658,159
33	50,091	154,175,898	832,945,764
34	53,642	154,618,177	941,831,625
35	51,139	142,725,428	955,648,342
36	52,058	152,783,868	1,112,499,506
37	47,463	153,164,839	1,217,834,254
38	44,869	127,521,699	1,056,382,729
39	39,656	112,797,074	939,711,700
40	38,736	113,746,553	963,698,524
41	37,726	111,584,058	943,244,511
42	32,929	104,676,305	899,365,134
43	32,671	103,278,236	904,465,553
44	28,973	97,011,717	855,789,852
45	26,883	88,496,494	783,306,428
46	29,649	94,598,917	839,515,265
47	24,250	83,164,666	746,576,694
48	23,877	80,470,531	729,357,373
49	21,796	76,101,700	694,951,947
50	21,054	75,564,301	694,872,084
51	19,867	73,150,349	671,630,186
52	17,854	69,234,700	643,152,999
53	15,477	59,990,250	558,278,253
54	14,862	59,579,487	557,872,641
55	12,221	49,546,758	461,888,217
56	11,987	46,290,561	434,234,211
57	9,924	42,062,801	397,112,392
58	11,892	49,170,642	467,755,352
TOTAL	1,337,398	3,729,375,280	23,993,137,140

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EPS - Valuation - 31.3.2006.

Appendix - B

Age-wise distribution of Number, Salary and Salary weighted by
Service

(Projected from Sample data available for actual valuation)

Age	Number	Salary	past service x Salary
18	5,812	5,455,826	5,720,499
19	69,868	60,044,467	80,374,425
20	225,660	192,383,439	320,495,125
21	334,494	314,771,154	608,920,845
22	425,940	450,686,242	973,028,437
23	487,599	577,102,311	1,355,631,930
24	560,179	721,840,504	1,909,205,502
25	586,189	805,633,044	2,330,981,901
26	727,523	985,695,012	3,222,718,852
27	1,029,227	994,708,084	3,624,796,590
28	1,600,231	2,380,111,394	4,295,432,446
29	2,051,842	2,783,919,511	4,719,292,934
30	2,413,969	4,411,387,243	12,173,730,681
31	1,804,483	3,205,661,231	12,213,623,426
32	1,380,601	2,738,748,272	12,859,522,403
33	1,213,087	2,536,439,224	13,703,285,240
34	1,299,084	2,543,715,419	15,494,631,179
35	1,238,467	2,348,060,745	15,721,938,193
36	1,260,723	2,513,538,112	18,302,389,806
37	1,149,443	2,519,805,692	20,035,314,277
38	1,086,623	2,097,935,173	17,379,179,394
39	960,376	1,855,691,626	15,459,755,035
40	938,096	1,871,312,069	15,854,376,516
41	913,636	1,835,735,580	15,517,875,406
42	797,464	1,722,092,034	14,795,989,726
43	791,215	1,699,091,571	14,879,899,746
44	701,659	1,595,997,347	14,079,106,893
45	651,044	1,455,908,359	12,886,639,055
46	718,030	1,556,302,942	13,811,364,001
47	587,278	1,368,191,291	12,282,376,397
48	578,245	1,323,868,477	11,999,091,125
49	527,848	1,251,994,244	11,433,067,037
50	509,879	1,243,153,174	11,431,753,163
51	481,132	1,203,439,817	11,049,386,902
52	432,382	1,139,021,151	10,580,891,793
53	374,817	986,935,216	9,184,566,961
54	359,923	980,177,510	9,177,893,997
55	295,964	815,123,129	7,598,797,257
56	290,297	761,553,499	7,143,844,787
57	240,333	692,000,110	6,533,131,706
58	287,997	808,935,422	7,695,320,978
TOTAL	32,388,660	61,354,166,667	394,725,342,565

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Appendix - C

EPS'95 VALUATION 31st March 2006.

Primary Pensioners: Distribution by age and Pension amount (valued data)

age	Monthly Pension amount							Total
	upto 400	401-500	501-600	601-700	701-800	801-900	901 +	
50	3	670	56	33	17	1056	2151	3986
51	3	1030	71	3791	3822	7045	9583	25345
52	2	1911	304	6559	9807	5667	9993	34243
53	0	2333	499	10545	7465	8351	9133	38326
54	1	2926	3489	10605	10071	9509	8781	45382
55	6	2529	4454	10522	9312	7162	7758	41743
56	6	3355	7281	12747	9855	6297	8664	48205
57	8	3157	7210	10630	8563	4960	8334	42862
58	27	3665	8354	10887	8261	5528	16150	52872
59	56	3991	8699	16513	10382	8723	32559	80923
60	68	3585	8961	16020	14702	5565	26927	75828
61	75	4512	8159	19013	13893	6148	16767	68567
62	677	9670	6050	14571	15056	6669	5048	57741
63	981	11480	5591	19487	11273	709	561	50082
64	115	15911	21566	7853	1046	116	187	46794
65	23	12851	19370	3254	182	88	144	35912
66	52	13286	18590	3859	383	147	182	36499
67	18	10297	11253	6738	305	117	150	28878
68	10	8650	11013	3877	227	90	136	24003
69	9	6507	9451	611	173	63	93	16907
70	0	4957	7276	394	123	46	59	12855
71	5	3651	4852	274	90	40	35	8947
72	3	1747	2298	134	50	26	18	4276
73	0	964	1116	80	19	6	16	2201
74	0	11	10	3	0	0	0	24
	2148	133646	175973	189000	135077	84128	163429	883401

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Appendix- D

EPS-Valuation		31st March 2006						
Distribution of members in salary and service bands							(valued data only)	
(A) EPS Service								
Service	Salary in multiples of Rs.100/-						Total	
	0-10	11-20	21-30	31-40	41-50	51-60		
0 years	0	11265	61096	34	0	0	72395	
1-5	54	76657	510127	1659	8	11	588516	
6-10	30	30719	326972	304261	6878	7627	676487	
TOTAL	84	118641	898195	305954	6886	7638	1337398	

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