

## Executive Summary

This report considers the expected growth in expenditure by the Metropolitan Police in pensions for uniformed employees who are members of the Police Pension Scheme. Past recruitment ‘bulges’ are expected to be translated into a rise in pension expenditure as these employees reach retirement in greater numbers.

### The Financial Dynamics of More Retirements

When an officer retires, pension expenditure is affected in three ways:

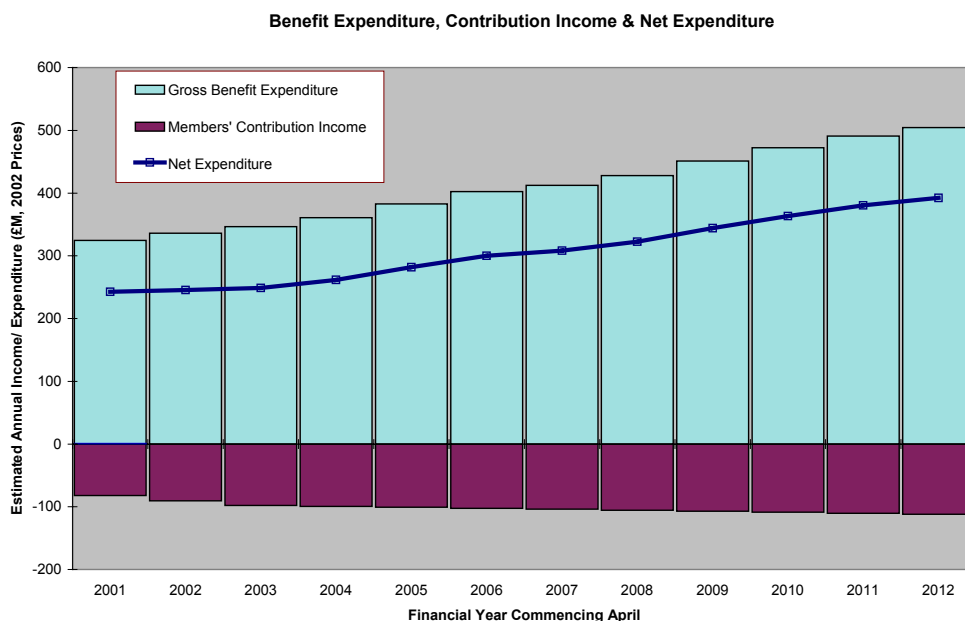
1. **Ongoing Pension** - the officer’s pension comes into payment, it will increase each April in line with the rise in RPI (given the early age at which pensions commence and increasing longevity, a pension might typically be expected to be in payment for 30 to 35 years, often longer than a police officer’s career);
2. **One-Off Lump Sum** - normally the officer opts for a reduced ongoing pension and a lump sum payment, which in most cases is the maximum of around 1½ years’ salary, giving an immediate one-off jump in expenditure; and
3. **Loss of Officers’ Contributions** - the officer’s pension contributions (11% of payroll) cease (as these are used to offset pension expenditure, there is a ‘double whammy’ effect when many officers retire at the same time).

### Projected Income & Expenditure

This report illustrates the expected pattern of future net pensions expenditure (benefit payments less contributions) over the next 10 years.

Underlying net pension outgo in 2001/02 was around £18m higher than in 2000/01, a rise of around 8% in one year, around 6% more than price inflation.

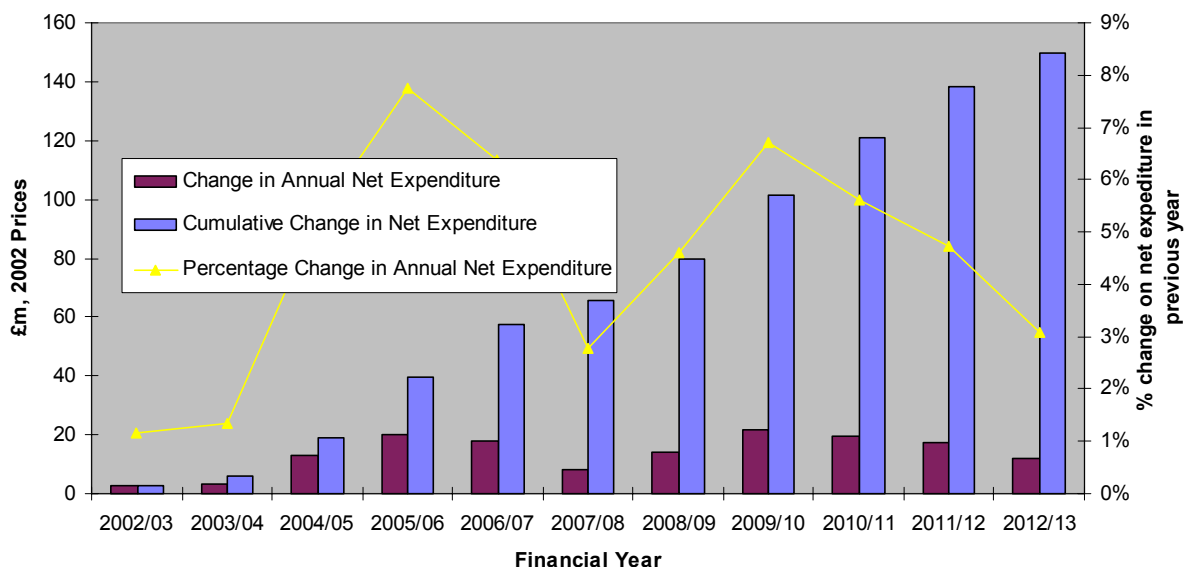
The chart below plots the expected rise in net expenditure (ahead of price increases) on our central projection assumptions, from the *actual* figures for 2001/02.



# The Metropolitan Police Authority

The chart below shows the projected change in net expenditure over the period to 2012/13. In current prices, net expenditure is expected to grow by around £150m by 2012/13 compared to 2001/02. The average annual rate of growth in net expenditure is estimated at an average of 4.5% p.a. in excess of RPI over the period until 2012/13.

**Change in Net expenditure from 2001/02**



The big increase in Annual Net Expenditure projected in 2005/6 and 2009/10 is primarily attributable to our modelling of a proportion of officers recruited in 1976 and 1980 attaining 30 years' service and being assumed to retire.

Long-term budgeting should anticipate a continued high level of growth in net pension expenditure. From year to year, it may also be appropriate to hold reserves for short-term fluctuations in actual expenditure.

## Scenario Testing

We have also considered the effect of variations in experience from our central assumptions. We have investigated the sensitivity of net expenditure to changes in the level of future price inflation, salary inflation, incapacity retirements, increased recruitment and all officers retiring immediately and taking their lump sums after 30 years' service. The results are shown in Section 5.

We should be delighted to answer any questions

**W Douglas B Anderson**  
Fellow of the Institute of Actuaries  
23 May 2003

**Kenneth J Ettles**  
Fellow of the Faculty of Actuaries

Appendix 2 - Detailed Results in Cash Terms

| Financial Year   | Actual  | Estimated Cash Flows in Cash Terms (£m) |         |         |         |         |         |         |         |         |         |         | Since   |
|--|---------|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|  | 2001/02 | 2002/03                                 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2001/02 |
| <b>Central Projection (2.5% inflation, 4% earnings growth, 2001/02 ill health retirements, strength of 30,000 by 2004)</b> |         |   |         |         |         |         |         |         |         |         |         |         |         |
| (a) Cash Commutation Expenditure   | 52.2    | 54.9                                    | 57.6    | 62.9    | 74.7    | 82.5    | 79.4    | 82.7    | 93.7    | 100.3   | 103.6   | 100.5   | 6.1%    |
| (b) Ongoing Pension Expenditure  | 272.3   | 285.1                                   | 302.1   | 321.1   | 342.6   | 367.1   | 392.8   | 419.7   | 449.3   | 482.0   | 517.0   | 553.1   | 6.7%    |
| (c) Total Benefit Expenditure [(a)+(b)]  | 324.5   | 340.1                                   | 359.6   | 384.0   | 417.3   | 449.6   | 472.1   | 502.5   | 543.0   | 582.4   | 620.7   | 653.5   | 6.6%    |
| (d) Contribution Income  | (81.9)  | (91.6)                                  | (101.5) | (105.6) | (109.9) | (114.4) | (119.0) | (123.8) | (128.8) | (134.0) | (139.4) | (145.0) | 5.3%    |
| (e) Net Expenditure [(c)+(d)]  | 242.6   | 248.5                                   | 258.1   | 278.3   | 307.4   | 335.2   | 353.2   | 378.7   | 414.2   | 448.4   | 481.3   | 508.5   | 7.0%    |
| Change in Annual Net Expenditure (e)   |         | 5.9                                     | 9.6     | 20.2    | 29.1    | 27.8    | 18.0    | 25.5    | 35.5    | 34.2    | 32.9    | 27.3    |         |
| Cumulative Change in Net Expenditure (e)   |         | 5.9                                     | 15.5    | 35.7    | 64.8    | 92.6    | 110.6   | 136.1   | 171.6   | 205.8   | 238.7   | 265.9   |         |
| Year on Year Change in (e)   |         | 2.4%                                    | 3.9%    | 7.8%    | 10.4%   | 9.0%    | 5.4%    | 7.2%    | 9.4%    | 8.3%    | 7.3%    | 5.7%    |         |
| <b>Variations from Central Projection</b>  |         |   |         |         |         |         |         |         |         |         |         |         |         |
| <b>1. Effect of Price Inflation</b>  |         |   |         |         |         |         |         |         |         |         |         |         |         |
| <b>(i) Lower Assumption 1.5% inflation, 3% earnings growth</b>   |         |   |         |         |         |         |         |         |         |         |         |         |         |
| (a) Cash Commutation Expenditure   | 52.2    | 54.7                                    | 55.3    | 59.8    | 70.5    | 77.2    | 73.5    | 77.6    | 86.9    | 92.0    | 93.0    | 89.3    | 5.0%    |
| (b) Ongoing Pension Expenditure  | 272.3   | 286.6                                   | 302.7   | 318.6   | 336.8   | 357.4   | 378.4   | 398.6   | 422.7   | 449.2   | 478.1   | 506.2   | 5.8%    |
| (c) Total Benefit Expenditure [(a)+(b)]  | 324.5   | 341.3                                   | 358.0   | 378.5   | 407.3   | 434.5   | 451.9   | 476.2   | 509.6   | 541.2   | 571.1   | 595.5   | 5.7%    |
| (d) Contribution Income  | (81.9)  | (91.1)                                  | (100.1) | (103.1) | (106.3) | (109.5) | (112.8) | (116.2) | (119.8) | (123.4) | (127.2) | (131.0) | 4.4%    |
| (e) Net Expenditure [(c)+(d)]  | 242.6   | 250.2                                   | 257.9   | 275.3   | 301.1   | 325.0   | 339.1   | 359.9   | 389.8   | 417.8   | 444.0   | 464.5   | 6.1%    |
| Difference from Central Projection   |         | 1.7                                     | (0.2)   | (3.0)   | (6.3)   | (10.2)  | (14.1)  | (18.7)  | (24.4)  | (30.6)  | (37.3)  | (44.0)  |         |
| <b>(iii) Higher Assumption 3.5% inflation, 5% earnings growth</b>  |         |   |         |         |         |         |         |         |         |         |         |         |         |
| (a) Cash Commutation Expenditure   | 52.2    | 55.2                                    | 57.2    | 63.1    | 75.8    | 84.6    | 82.1    | 88.4    | 100.9   | 109.0   | 112.5   | 110.2   | 7.0%    |
| (b) Ongoing Pension Expenditure  | 272.3   | 283.6                                   | 304.1   | 326.4   | 351.6   | 380.4   | 410.9   | 441.5   | 477.3   | 517.2   | 561.4   | 606.3   | 7.5%    |
| (c) Total Benefit Expenditure [(a)+(b)]  | 324.5   | 338.8                                   | 361.3   | 389.5   | 427.4   | 464.9   | 493.0   | 529.9   | 578.2   | 626.2   | 673.9   | 716.5   | 7.5%    |
| (d) Contribution Income  | (81.9)  | (92.0)                                  | (103.0) | (108.2) | (113.7) | (119.4) | (125.4) | (131.7) | (138.4) | (145.3) | (152.6) | (160.3) | 6.3%    |
| (e) Net Expenditure [(c)+(d)]  | 242.6   | 246.8                                   | 258.3   | 281.3   | 313.8   | 345.5   | 367.6   | 398.2   | 439.8   | 480.8   | 521.2   | 556.2   | 7.8%    |
| Difference from Central Projection   |         | (1.7)                                   | 0.2     | 2.9     | 6.4     | 10.3    | 14.5    | 19.5    | 25.6    | 32.5    | 40.0    | 47.6    |         |

# The Metropolitan Police Authority

| Financial Year                             | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | 2011/12 | 2012/13 | Average Annual Change Since |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------------------------|
| <b>2. Effect of Earnings Growth</b>        |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| <b>(i) Lower Assumption</b>                |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| <b>2.5% inflation, 3% earnings growth</b>  |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| (a) Cash Commutation Expenditure           | 52.2    | 54.7    | 56.8    | 61.5    | 72.4    | 79.2    | 75.5    | 77.9    | 87.4    | 92.6    | 94.8    | 91.0    | 5.2%                        |
| (b) Ongoing Pension Expenditure            | 272.3   | 285.1   | 301.9   | 320.6   | 341.6   | 365.4   | 390.1   | 415.9   | 443.8   | 474.7   | 507.3   | 540.6   | 6.4%                        |
| (c) Total Benefit Expenditure [(a)+(b)]    | 324.5   | 339.8   | 358.7   | 382.1   | 414.0   | 444.6   | 465.6   | 493.8   | 531.2   | 567.3   | 602.0   | 631.7   | 6.2%                        |
| (d) Contribution Income                    | (81.9)  | (91.1)  | (100.1) | (103.1) | (106.3) | (109.5) | (112.8) | (116.2) | (119.8) | (123.4) | (127.2) | (131.0) | 4.4%                        |
| (e) Net Expenditure [(c)+(d)]              | 242.6   | 248.6   | 258.6   | 279.0   | 307.8   | 335.1   | 352.8   | 377.6   | 411.5   | 443.9   | 474.9   | 500.6   | 6.8%                        |
| Difference from Central Projection         |         | 0.2     | 0.5     | 0.7     | 0.4     | (0.1)   | (0.3)   | (1.1)   | (2.7)   | (4.5)   | (6.4)   | (7.9)   |                             |
| <b>(iii) Higher Assumption</b>             |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| <b>2.5% inflation, 5% earnings growth</b>  |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| (a) Cash Commutation Expenditure           | 52.2    | 55.2    | 58.3    | 64.3    | 77.1    | 85.9    | 83.3    | 87.8    | 100.5   | 108.6   | 113.3   | 110.9   | 7.1%                        |
| (b) Ongoing Pension Expenditure            | 272.3   | 285.2   | 302.2   | 321.6   | 343.6   | 368.9   | 395.5   | 423.7   | 454.9   | 489.8   | 527.3   | 566.3   | 6.9%                        |
| (c) Total Benefit Expenditure [(a)+(b)]    | 324.5   | 340.4   | 360.6   | 385.9   | 420.7   | 454.7   | 478.9   | 511.5   | 555.3   | 598.4   | 640.6   | 677.1   | 6.9%                        |
| (d) Contribution Income                    | (81.9)  | (92.0)  | (103.0) | (108.2) | (113.7) | (119.4) | (125.4) | (131.7) | (138.4) | (145.3) | (152.6) | (160.3) | 6.3%                        |
| (e) Net Expenditure [(c)+(d)]              | 242.6   | 248.3   | 257.6   | 277.7   | 307.0   | 335.3   | 353.5   | 379.8   | 417.0   | 453.1   | 488.0   | 516.8   | 7.1%                        |
| Difference from Central Projection         |         | (0.1)   | (0.5)   | (0.7)   | (0.4)   | 0.1     | 0.3     | 1.1     | 2.8     | 4.7     | 6.7     | 8.2     |                             |
| <b>3. Effect of Incapacity Retirements</b> |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| <b>(i) Lower Assumption</b>                |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| <b>50% of 2001/02 levels</b>               |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| (a) Cash Commutation Expenditure           | 52.2    | 49.0    | 51.9    | 57.5    | 69.9    | 78.2    | 75.1    | 78.9    | 90.9    | 98.2    | 102.4   | 99.8    | 6.1%                        |
| (b) Ongoing Pension Expenditure            | 272.3   | 283.1   | 298.3   | 315.7   | 335.5   | 358.5   | 382.7   | 408.2   | 436.4   | 468.1   | 502.2   | 537.5   | 6.4%                        |
| (c) Total Benefit Expenditure [(a)+(b)]    | 324.5   | 332.1   | 350.2   | 373.1   | 405.4   | 436.7   | 457.8   | 487.1   | 527.3   | 566.3   | 604.6   | 637.3   | 6.3%                        |
| (d) Contribution Income                    | (81.9)  | (91.6)  | (101.5) | (105.6) | (109.9) | (114.4) | (119.0) | (123.8) | (128.8) | (134.0) | (139.4) | (145.0) | 5.3%                        |
| (e) Net Expenditure [(c)+(d)]              | 242.6   | 240.5   | 248.7   | 267.5   | 295.5   | 322.4   | 338.8   | 363.3   | 398.5   | 432.3   | 465.2   | 492.3   | 6.6%                        |
| Difference from Central Projection         |         | (7.9)   | (9.4)   | (10.8)  | (11.9)  | (12.9)  | (14.4)  | (15.4)  | (15.7)  | (16.1)  | (16.0)  | (16.2)  |                             |
| <b>(iii) Higher Assumption</b>             |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| <b>150% of 2001/02 levels</b>              |         |         |         |         |         |         |         |         |         |         |         |         |                             |
| (a) Cash Commutation Expenditure           | 52.2    | 60.9    | 63.1    | 68.0    | 79.3    | 86.4    | 83.2    | 86.1    | 96.1    | 101.9   | 104.3   | 100.7   | 6.2%                        |
| (b) Ongoing Pension Expenditure            | 272.3   | 287.2   | 305.8   | 326.4   | 349.5   | 375.4   | 402.4   | 430.6   | 461.3   | 495.0   | 530.7   | 567.2   | 6.9%                        |
| (c) Total Benefit Expenditure [(a)+(b)]    | 324.5   | 348.1   | 368.9   | 394.5   | 428.7   | 461.8   | 485.6   | 516.7   | 557.4   | 596.9   | 635.0   | 667.9   | 6.8%                        |
| (d) Contribution Income                    | (81.9)  | (91.6)  | (101.5) | (105.6) | (109.9) | (114.4) | (119.0) | (123.8) | (128.8) | (134.0) | (139.4) | (145.0) | 5.3%                        |
| (e) Net Expenditure [(c)+(d)]              | 242.6   | 256.5   | 267.3   | 288.8   | 318.8   | 347.4   | 366.6   | 392.9   | 428.6   | 462.9   | 495.6   | 522.9   | 7.2%                        |
| Difference from Central Projection         |         | 8.0     | 9.3     | 10.5    | 11.4    | 12.2    | 13.5    | 14.3    | 14.4    | 14.5    | 14.3    | 14.4    |                             |

# The Metropolitan Police Authority

| Financial Year  | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | 2011/12 | 2012/13 | Average Annual Change Since 2001/02 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------------------------|
| <b>4. Recruitment</b>   |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| <b>(i) Lower Assumption</b>   |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| <b>Maintain strength at 27,300</b>  |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| (a) Cash Commutation Expenditure  | 52.2    | 54.9    | 57.6    | 62.9    | 74.7    | 82.5    | 79.4    | 82.7    | 93.7    | 100.3   | 103.6   | 100.5   | 6.1%                                |
| (b) Ongoing Pension Expenditure   | 272.3   | 285.1   | 302.1   | 321.1   | 342.6   | 367.1   | 392.8   | 419.7   | 449.3   | 482.0   | 517.0   | 553.1   | 6.7%                                |
| (c) Total Benefit Expenditure [(a)+(b)]   | 324.5   | 340.1   | 359.6   | 384.0   | 417.3   | 449.6   | 472.1   | 502.5   | 543.0   | 582.4   | 620.7   | 653.5   | 6.6%                                |
| (d) Contribution Income   | (81.9)  | (89.4)  | (94.4)  | (98.2)  | (102.2) | (106.3) | (110.6) | (115.0) | (119.7) | (124.5) | (129.5) | (134.8) | 4.6%                                |
| (e) Net Expenditure [(c)+(d)]   | 242.6   | 250.7   | 265.3   | 285.8   | 315.2   | 343.3   | 361.6   | 387.4   | 423.3   | 457.8   | 491.1   | 518.8   | 7.2%                                |
| Difference from Central Projection  |         | 2.2     | 7.2     | 7.5     | 7.8     | 8.1     | 8.4     | 8.7     | 9.1     | 9.5     | 9.8     | 10.2    |                                     |
| <b>(iii) Higher Assumption</b>  |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| <b>Grow strength to 35,000 by 2006</b>  |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| (a) Cash Commutation Expenditure  | 52.2    | 54.9    | 57.6    | 62.9    | 74.7    | 82.5    | 79.4    | 82.7    | 93.7    | 100.3   | 103.6   | 100.5   | 6.1%                                |
| (b) Ongoing Pension Expenditure   | 272.3   | 285.1   | 302.1   | 321.1   | 342.6   | 367.1   | 392.8   | 419.7   | 449.3   | 482.0   | 517.0   | 553.1   | 6.7%                                |
| (c) Total Benefit Expenditure [(a)+(b)]   | 324.5   | 340.1   | 359.6   | 384.0   | 417.3   | 449.6   | 472.1   | 502.5   | 543.0   | 582.4   | 620.7   | 653.5   | 6.6%                                |
| (d) Contribution Income   | (81.9)  | (92.2)  | (103.7) | (114.9) | (127.3) | (132.5) | (137.8) | (143.4) | (149.2) | (155.2) | (161.5) | (168.0) | 6.7%                                |
| (e) Net Expenditure [(c)+(d)]   | 242.6   | 247.8   | 255.9   | 269.0   | 290.0   | 317.1   | 334.3   | 359.1   | 393.8   | 427.1   | 459.2   | 485.5   | 6.5%                                |
| Difference from Central Projection  |         | (0.7)   | (2.2)   | (9.3)   | (17.4)  | (18.1)  | (18.9)  | (19.6)  | (20.4)  | (21.2)  | (22.1)  | (23.0)  |                                     |
| <b>5. 30 Year Officers</b>  |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| <b>(i) Effect of All Officers Retiring Immediately after 30 years' service</b>  |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| (a) Cash Commutation Expenditure  | 52.2    | 100.2   | 62.7    | 73.8    | 88.9    | 84.7    | 83.1    | 91.0    | 99.9    | 106.8   | 102.2   | 86.4    | 4.7%                                |
| (b) Ongoing Pension Expenditure   | 272.3   | 296.8   | 314.6   | 334.7   | 359.4   | 387.4   | 412.4   | 440.8   | 472.7   | 507.8   | 545.1   | 580.2   | 7.1%                                |
| (c) Total Benefit Expenditure [(a)+(b)]   | 324.5   | 397.0   | 377.3   | 408.5   | 448.3   | 472.1   | 495.5   | 531.8   | 572.6   | 614.6   | 647.3   | 666.6   | 6.8%                                |
| (d) Contribution Income   | (81.9)  | (91.6)  | (101.5) | (105.6) | (109.9) | (114.4) | (119.0) | (123.8) | (128.8) | (134.0) | (139.4) | (145.0) | 5.3%                                |
| (e) Net Expenditure [(c)+(d)]   | 242.6   | 305.4   | 275.8   | 302.8   | 338.4   | 357.8   | 376.5   | 408.1   | 443.9   | 480.6   | 507.9   | 521.6   | 7.2%                                |
| Difference from Central Projection  |         | 56.9    | 17.7    | 24.5    | 30.9    | 22.5    | 23.3    | 29.4    | 29.7    | 32.3    | 26.6    | 13.1    |                                     |
| <b>(ii) Effect of All Officers Taking Lump Sum after 30 years' service, but remaining in employment with abated pension</b> |         |         |         |         |         |         |         |         |         |         |         |         |                                     |
| (a) Cash Commutation Expenditure  | 52.2    | 100.2   | 62.7    | 73.8    | 88.9    | 84.7    | 83.1    | 91.0    | 99.9    | 106.8   | 102.2   | 86.4    | 4.7%                                |
| (b) Ongoing Pension Expenditure   | 272.3   | 285.1   | 302.1   | 321.1   | 342.6   | 367.1   | 392.8   | 419.7   | 449.3   | 482.0   | 517.0   | 553.1   | 6.7%                                |
| (c) Total Benefit Expenditure [(a)+(b)]   | 324.5   | 385.3   | 364.8   | 394.9   | 431.5   | 451.8   | 475.9   | 510.7   | 549.2   | 588.9   | 619.3   | 639.4   | 6.4%                                |
| (d) Contribution Income   | (81.9)  | (91.6)  | (101.5) | (105.6) | (109.9) | (114.4) | (119.0) | (123.8) | (128.8) | (134.0) | (139.4) | (145.0) | 5.3%                                |
| (e) Net Expenditure [(c)+(d)]   | 242.6   | 293.7   | 263.2   | 289.3   | 321.6   | 337.5   | 356.9   | 387.0   | 420.4   | 454.9   | 479.9   | 494.4   | 6.7%                                |
| Difference from Central Projection  |         | 45.3    | 5.1     | 10.9    | 14.2    | 2.2     | 3.7     | 8.3     | 6.2     | 6.5     | (1.4)   | (14.1)  |                                     |