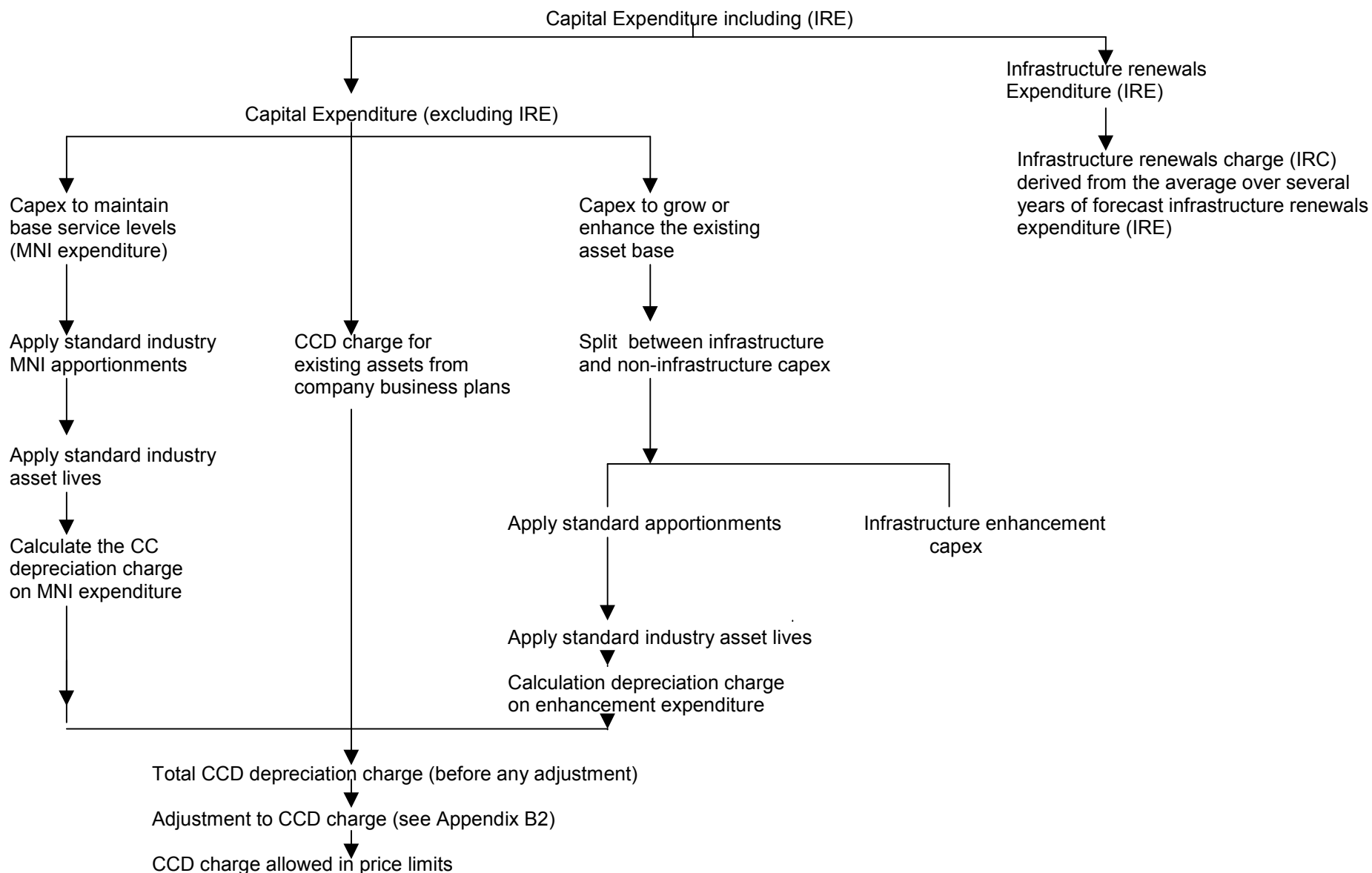
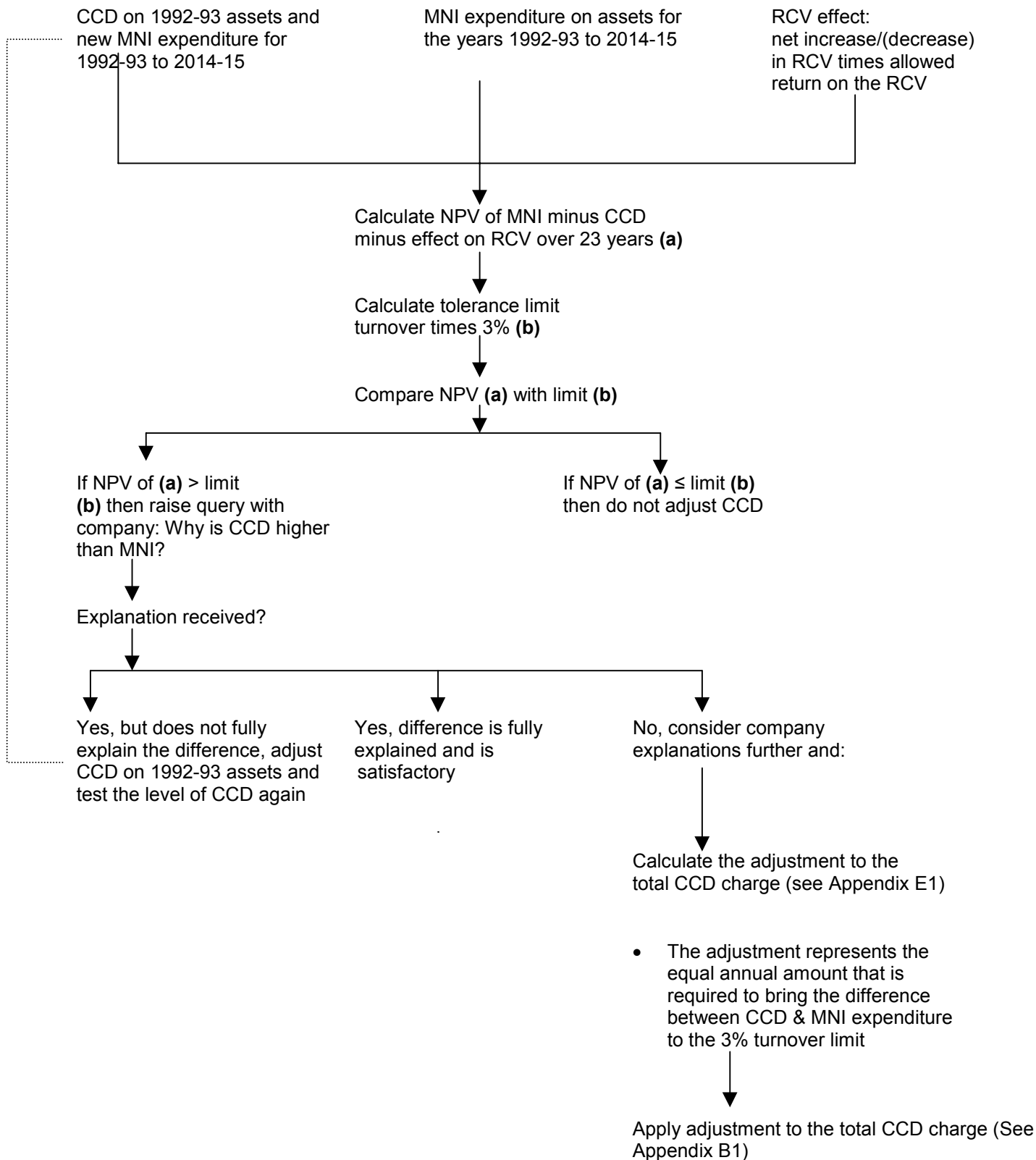


Flow chart 1
How we calculate the total CCD Charge (before the depreciation adjustment)



Flow chart 2

Test on the level of CCD



Calculation of depreciation on new capital expenditure

Appendix C

£m

This example is for illustration purposes only. Totals may not add due to rounding.

The following assumptions have been made:

	Non-infrastructure asset apportionments	Asset Lives
Very short	5%	5
Short	10%	10
Medium	5%	20
Medium long	40%	40
Long	40%	60

For the purposes of this example we have assumed that a full year charge is made in the year of purchase.

Step 1 Apportion total capital expenditure between infrastructure and non-infrastructure

£m	2000-01	2001-02	2002-03	2003-04	2004-05
Total new capex assumed	70	100	90	80	100
Of which:					
Infrastructure	35	50	45	40	50
Non-infrastructure	35	50	45	40	50

Assumed company specific split: 50% infrastructure and 50% non-infrastructure

Step 2 Apportion non-infrastructure capex across the five classes of asset life

£m	2000-01	2001-02	2002-03	2003-04	2004-05
Very short	2	3	2	2	3
Short	4	5	5	4	5
Medium	2	3	2	2	3
Medium long	14	20	18	16	20
Long	14	20	18	16	20
Total non-infrastructure capex	35	50	45	40	50

Step 3 Divide the apportioned non-infrastructure capex by the asset life per category

£m	2000-01	2001-02	2002-03	2003-04	2004-05
Very short	0.35	0.50	0.45	0.40	0.50
Short	0.35	0.50	0.45	0.40	0.50
Medium	0.09	0.13	0.11	0.10	0.13
Medium long	0.35	0.50	0.45	0.40	0.50
Long	0.23	0.33	0.30	0.27	0.33
Total CCD charge per year ¹	1.37	1.96	1.76	1.57	1.96

Step 4 Cumulate the CCD charge to reflect continuing charge on past investment and the CCD on new capital expenditure each year

£m	2000-01	2001-02	2002-03	2003-04	2004-05
Very short	0.35	0.85	1.30	1.70	2.20
Short	0.35	0.85	1.30	1.70	2.20
Medium	0.09	0.21	0.33	0.43	0.55
Medium long	0.35	0.85	1.30	1.70	2.20
Long	0.23	0.57	0.87	1.13	1.47
Total cumulative CCD charge per year	1.37	3.33	5.09	6.66	8.62

¹ For simplicity, inflation has been excluded from this example. Cumulative RPI would normally be applied to the annual charge to inflate it to outturn prices.

Example of an asset base in a steady state

Appendix D

A company buys an similar asset each year with a useful life of 5 years and a cost of £1000.

The depreciation charge for each year is $1000/5 = £200$ and a full year's charge is made in the year of purchase.

Year	Purchase cost £	Depreciation charge per year	Cumulative depreciation charge	Cumulative Net Book Value	Yr 1 charge	Yr 2 charge	Yr 3 charge	Yr 4 charge	Yr 5 charge	Yr 6 charge	Yr 7 charge	Yr 8 charge	Yr 9 charge	Yr 10 charge	Yr 11 charge	Yr 12 charge	Yr 13 charge	Yr 14 charge	Yr 15 charge	Cumulative depreciation charge per asset
1	1000	200	200	800	200															1000
2	1000	400	600	1400		200														1000
3	1000	600	1200	1800			200													1000
4	1000	800	2000	2000				200												1000
5	1000	1000	3000	2000					200											1000
6	1000	1000	4000	2000						200										1000
7	1000	1000	5000	2000							200									1000
8	1000	1000	6000	2000								200								1000
9	1000	1000	7000	2000									200							1000
10	1000	1000	8000	2000										200						1000
11	1000	1000	9000	2000											200					1000
12	1000	1000	10000	2000												200				800
13	1000	1000	11000	2000													200			600
14	1000	1000	12000	2000														200		400
15	1000	1000	13000	2000															200	200
Cumulative	15000		13000	2000	200	400	600	800	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	13000

At the end of year 5, the asset purchased in year 1 has been fully depreciated and is replaced in year 6.

The asset purchased in year 2 is fully depreciated by the end of year 6 and is replaced in year 7; and so on.

From year 5 onwards, the asset base is in a steady state:

- the asset base remains at the same size
- the depreciation charge is constant at £1000 per year (this is the same as the annual expenditure to maintain the asset base).

Calculation of the CCD adjustment

Appendix E1

This example is for illustration purposes only and is not intended to represent the calculation of any company.

Step 1 Calculate the present value of CCD and MNI

Assumptions: Discount factor to calculate NPV is 5%
Rate of return on the RCV 5%

A	B	C	D	E	F	G	H	I	J	K
Year	Disc. factor 5.00%	CCD	PV of CCD Col C * B	MNI	Cumulate MNI	PV of MNI Col E * B	Change in RCV Col E - C	Cumulative change	Change @ 5.00%	PV of Cumulative change
1992-93	0.9524	40	38	50	50	48	10	10	1	0
1993-94	0.9070	40	36	40	90	36	0	10	1	0
1994-95	0.8638	40	35	35	125	30	(5)	5	0	0
1995-96	0.8227	55	45	30	155	25	(25)	(20)	(1)	(1)
1996-97	0.7835	55	43	50	205	39	(5)	(25)	(1)	(1)
1997-98	0.7462	60	44	65	270	49	5	(20)	(1)	(1)
1998-99	0.7107	45	32	25	295	18	(20)	(40)	(2)	(1)
1999-00	0.6768	45	30	40	335	27	(5)	(44)	(2)	(2)
2000-01	0.6446	45	29	40	375	26	(5)	(49)	(2)	(2)
2001-02	0.6139	45	28	35	410	21	(10)	(59)	(3)	(2)
2002-03	0.5847	45	26	35	445	20	(10)	(69)	(3)	(2)
2003-04	0.5568	45	25	35	480	20	(10)	(79)	(4)	(2)
2004-05	0.5303	40	21	35	515	18	(5)	(85)	(4)	(2)
2005-06	0.5051	40	20	35	550	18	(5)	(90)	(4)	(2)
2006-07	0.4810	40	19	35	585	17	(5)	(95)	(5)	(2)
2007-08	0.4581	40	18	35	620	16	(5)	(100)	(5)	(2)
2008-09	0.4363	40	17	35	655	15	(5)	(105)	(5)	(2)
2009-10	0.4155	40	17	35	690	15	(5)	(110)	(5)	(2)
2010-11	0.3957	40	16	35	725	14	(5)	(115)	(6)	(2)
2011-12	0.3769	40	15	35	760	13	(5)	(120)	(6)	(2)
2012-13	0.3589	40	14	35	795	13	(5)	(125)	(6)	(2)
2013-14	0.3418	40	14	35	830	12	(5)	(130)	(6)	(2)
2014-15	0.3256	40	13	35	865	11	(5)	(135)	(7)	(2)
Total £m		999	597	865		520				-37

Notes:

- 1 CCD and MNI streams from the 1992-93 asset base are directly input into columns C and E. CCD is the charge in respect of existing assets and MNI expenditure, not total CCD
- 2 Column D represents the total present value of the CCD on base service assets at 1992-93 for the 23 year period.
- 3 Column G represents the total present value of the MNI on base service assets at 1992-93 for the 23 year period.
- 4 Column K represents the total present value of the effect on the RCV (MNI less CCD) for the 23 year period.
- 5 The Net Present Value of the difference in CCD, MNI and RCV effect is calculated as: column G less column D less column K (-40). See appendix B2, reference (a).

Step 2 Calculate the tolerance limit

Assumptions: NPV from note 5 above £(40,000)k
Turnover for base year is £400,000k
Limit of % of turnover for adjustment 3%

Turnover * % limit £k 12000

Is NPV of difference less than tolerance limit? No

If no, then a query is raised with the company to establish the reasons for the difference.

If the explanation is not satisfactory then calculate the adjustment to the total CCD charge as follows (appendix B2):

Step 3 Calculate the adjustment to the total CCD charge:

Step 3a Calculate the NPV as an annuity £k (2965)
Step 3b Calculate the effect of the annuity on the RCV (19794)
(see Appendix E2 for the calculation)
Step 3c Is the RCV effect at step 3b less than the tolerance limit? No
If no, go to step 3d. If yes go to step 3g.
Step 3d Calculate the RCV effect at step 3b as an annuity (1467)
Step 3e Calculate the effect of the annuity at step 3d on the RCV (9795)
(see Appendix E2 for the calculation)
Step 3f Is the RCV effect less than the tolerance limit? Yes
Step 3g Annual adjustment to be applied to the total CCD charge (4432) step 3a + 3d

Calculation of the effect on the RCV

Appendix E2

Step 3b Calculate the RCV effect of the NPV of the difference as an annuity

Inputs to calculation: A= NPV as an annuity from step 3a £k (2965)
 R = Rate of return 5%
 1 + R 1.050

Years	Time period (T)	T*R*A	Discount factor 1/(1+R)	Present value
1992-93	1	(148)	0.95	(141)
1993-94	2	(297)	0.91	(269)
1994-95	3	(445)	0.86	(384)
1995-96	4	(593)	0.82	(488)
1996-97	5	(741)	0.78	(581)
1997-98	6	(890)	0.75	(664)
1998-99	7	(1038)	0.71	(738)
1999-00	8	(1186)	0.68	(803)
2000-01	9	(1334)	0.64	(860)
2001-02	10	(1483)	0.61	(910)
2002-03	11	(1631)	0.58	(954)
2003-04	12	(1779)	0.56	(991)
2004-05	13	(1928)	0.53	(1022)
2005-06	14	(2076)	0.51	(1048)
2006-07	15	(2224)	0.48	(1070)
2007-08	16	(2372)	0.46	(1087)
2008-09	17	(2521)	0.44	(1100)
2009-10	18	(2669)	0.42	(1109)
2010-11	19	(2817)	0.40	(1115)
2011-12	20	(2965)	0.38	(1118)
2012-13	21	(3114)	0.36	(1118)
2013-14	22	(3262)	0.34	(1115)
2014-15	23	(3410)	0.33	(1110)
RCV effect of NPV as an annuity				(19794)

Step 3d Calculate the effect of step 3d (Appendix E1) as an annuity

B= RCV effect in step 3d (Appendix E1) annuitised, s (1467)
 R = Rate of return 5%

Years	Time period (T)	T*R*B	Discount factor	Present value
1992-93	1	(73)	0.95	(70)
1993-94	2	(147)	0.91	(133)
1994-95	3	(220)	0.86	(190)
1995-96	4	(293)	0.82	(241)
1996-97	5	(367)	0.78	(287)
1997-98	6	(440)	0.75	(329)
1998-99	7	(514)	0.71	(365)
1999-00	8	(587)	0.68	(397)
2000-01	9	(660)	0.64	(426)
2001-02	10	(734)	0.61	(450)
2002-03	11	(807)	0.58	(472)
2003-04	12	(880)	0.56	(490)
2004-05	13	(954)	0.53	(506)
2005-06	14	(1027)	0.51	(519)
2006-07	15	(1101)	0.48	(529)
2007-08	16	(1174)	0.46	(538)
2008-09	17	(1247)	0.44	(544)
2009-10	18	(1321)	0.42	(549)
2010-11	19	(1394)	0.40	(552)
2011-12	20	(1467)	0.38	(553)
2012-13	21	(1541)	0.36	(553)
2013-14	22	(1614)	0.34	(552)
2014-15	23	(1688)	0.33	(549)
RCV effect of step 3d as an annuity				(9795)

