

Northern Territory Supreme Court Judges Pension Scheme

Triennial Actuarial Review as at 30 June 2016

July 2016

Judges Pension Scheme

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1. Introduction

I have been asked to perform an actuarial review of the Supreme Court Judges Pension Scheme as at 30 June 2016 by Sarah Rummery, the Commissioner of Superannuation, in her letter of 4 May 2016. It is the seventh such review. The previous review was conducted by me as at 30 June 2013, and presented in a report dated 25 July 2013.

This report complies with relevant parts of Professional Standard 400 and Professional Standard 402 of the Institute of Actuaries of Australia.

2. Background

The rules of the scheme are set out in the Supreme Court (Judges Pension) Act 1980. The scheme provides pension benefits to retired judges and reversionary pensions to their widow(er)s. Pensions increase over time in line with judicial salaries. Details of the benefits provided are outlined in Appendix 1. The scheme is open to new members. No contributions are payable by members and benefits are met from the Consolidated Revenue Fund, so there is no fund of assets. Death and invalidity benefits are self-insured, as is appropriate.

Tax is not paid on either investment income or contributions, so all benefits come from an untaxed source.

Some current members of the scheme have accrued surcharge debts. Surcharge tax no longer applies to further benefit accruals, but the existing debts will remain until the members exit from service, at which point the debts will be recovered from the members' benefits.

The scheme has no Trustees and is administered by Department of Justice.

The scheme does not provide any benefit on resignation before reaching pension entitlement. A separate Superannuation Guarantee benefit is provided from NT Supplementary Superannuation Scheme (NTSSS) in such circumstances, although for reasons of completeness and simplicity it may be desirable to consolidate all benefits within this scheme.

3. Data

I have been provided with details at 30 June 2016 of members and pensioners, including recent remuneration rulings; as well as details of payments over the last 3 years. The data is consistent with previous data and I am satisfied that it is suitable for valuation purposes.

There are 8 members – the Chief Justice, 5 judges, the Solicitor General and the Director of Public Prosecutions. Salaries are the same except that the Chief Justice receives about 10% more. The salary for judges has increased over the last three years by 4.5% (an annual rate of 1.5%), from \$402,880 at 30 June 2013 to \$420,810 at 30 June 2016.

During the review period there were no changes to membership for serving Judges, and no promotional salary increases. It has been announced that the Chief Justice will be retiring on 5 July 2016, to be replaced in that role by the current Solicitor General (an existing member of this scheme) from 6 July. The new Solicitor General has been announced, and will be a new member to the scheme in the 2016/17 financial year.

The current age and duration structure is shown in the following table.

Age at entry	Number	Duration of service	Number
40-49	2	0-3	0
50-54	2	3-6	3
55-59	2	6-10	3
60-64	2	10+	2

Of 12 former judges, 7 retired at or before age 65. The sample is very small but it seems that Judges in the Northern Territory have in the past tended to retire well before the maximum retirement age, once the retirement pension becomes available. Of current serving members, the earliest retirement point has already been reached by two, three will reach ten years' service and be eligible to retire in their 60's, two will only be eligible to retire with a pension on reaching age 70, and one will be eligible to receive a pension on reaching age 60.

At 30 June 2016 there were 12 former judges (average age 76) and 2 spouses (average age 68) receiving pensions. One pensioner died during the last three years, the first death of a pensioner in the last twenty years.

Benefit payments to pensioners over the last decade are summarised below.

Year	Pension payments \$M	Change	Year	Pension payments \$M	Change
2006/07	1.3	12%	2011/12	2.7	10%
2007/08	1.5	14%	2012/13	3.2	18%
2008/09	1.7	9%	2013/14	3.2	3%
2009/10	2.0	20%	2014/15	3.2	0%
2010/11	2.4	23%	2015/16	3.1	-4%

Payments made to pensioners have decreased slightly during the last three years, with low pension growth more than offset by a decrease due to a pensioner death in the interim. Pension payments are expected to grow slowly in coming years, as there are few expected retirements. The level of payments is consistent with the valuation data.

4. Valuation Assumptions

Economic assumptions

In order to assess the values of future payments it is necessary to allow for the likely extent of future salary increases and also to discount future amounts back to a present date value. NT Treasury currently assumes salary growth of 3.0% for 2016/17 and 4.0% per annum thereafter, and a CPI growth rate of 2.0% per annum. These assumptions are broadly consistent with external forecasts, although the salary growth assumption is slightly above recent very low growth. I am satisfied that these are reasonable assumptions for valuation purposes for this scheme. I have adopted 4.0% per annum, but with a lower rate of 3.0% in 2016/17, as the wage and pension growth assumption at this valuation.

The scheme has no assets on which to earn investment returns, but liabilities could be funded by borrowing by NT Government. It is appropriate to use a discount rate which reflects the cost of borrowing when valuing unfunded liabilities for budget/funding purposes. The 10 year Commonwealth bond yield as at 30 June 2016 was about 2.0% pa, very low in historical terms, while NT's long term borrowing costs would be slightly higher currently. NT Treasury assume a longer term risk free rate of 4.0% pa.

NT Treasury's assumptions for risk free rate and CPI inflation infer a real rate of return of about 2% per annum. Real rates of return inferred by indexed Commonwealth bond yields are relatively stable over time, and while yields on indexed bonds are currently below 1% pa they have ranged broadly between 1% and 3% pa over the last decade. NT Treasury's 2% pa real-return assumption appears to be a reasonable best estimate assumption for the long term.

The wage-discount gap (i.e. the excess of discount rate over assumed salary growth) is zero in the long term on Treasury's assumed basis. This is slightly lower than longer term national average gaps of around 1-2%, and partly reflects Treasury's view that NT public sector wage growth will rebound in coming years after quite low rates over the recent past. While a long term wage-discount gap of zero sits towards the low end of historical relativities, it is a broadly reasonable best estimate assumption taking into account NT-specific features.

Taking into account all of the above, a long term discount rate of 4% pa appears to be a reasonable rate to use in conjunction with Treasury's wage and CPI inflation assumptions. Thus the triennial economic valuation basis I have adopted for this valuation is:

- 4% pa discount rate;
- 4% pa salary inflation rate, but with 3% salary growth assumed for 2016/17;
- 2% CPI inflation.

For AASB119 financial reporting purposes, the requisite discount rate is the yield on long term government bonds. The yield on 10-year Commonwealth bonds is currently 2% pa (www.rba.gov.au 1/7/16), and I have used this discount rate with the above inflation assumptions in determining results for financial reporting purposes. Full financial reporting results are presented separately, and summarised below.

Promotional salary increases only occur if an existing judge is appointed Chief Justice, and have been ignored in this valuation apart from the specific known instance of the Solicitor General moving to the position of Chief Justice in July 2016.

Demographic assumptions

These assumptions relate to the members of the scheme – ages at entry, rates of exit, spouse details, mortality rates as pensioners, etc. Assumptions are made based on the very limited scheme experience supplemented by experience from other schemes. Details of the assumptions adopted are summarised in Appendix 2.

In-service mortality

One judge died in service during the last twelve years. However, in practice judges will tend to retire and claim an ill-health pension if they become ill, so deaths in service can be expected to be rare, and at much lower levels than underlying population mortality rates. I have adopted an assumption of 60% of Australian Life Tables 2010-12 as the in-service mortality rates.

Invalidity

There have been no invalidity retirements during the last 17 years. However, a substantial benefit may be available on invalidity in certain circumstances, so it is necessary to allow for the possibility of invalidity exits. I have adopted rates which increase from a low base to 2.5% at ages above 60. These rates are unchanged from the previous assessment. The invalidity decrement is only applied in the valuation model prior to qualification for a retirement pension.

Pensioner mortality

I have adopted the Australian Life Tables 2010-12 for pensioner mortality. These rates have been updated from the population table used in the previous valuation (Australian Life Tables 2005-07), and are based on the latest published tables from the Australian Government Actuary. I have also incorporated allowance for future mortality improvements for pensioners (and improvement between 2011 and the valuation date) based on the average rates observed for the last 25 years, set out in the Australian Life Tables 2010-12. The new mortality rates are slightly higher than those from the previous table (after allowing for assumed population mortality improvements) and so liability results are slightly lower using the new rates. There is no selection effect for pensioners, and not enough experience to suggest that these pensioners will have experience any different to the overall Australian population at the same ages.

Age retirement rates

Assumed age retirement rates only apply once a member has qualified for a pension. I have adopted rates of 25% per year from age 60 to age 67, increasing to 100% at age 70. This means the majority of judges are assumed to retire within about 4 years of becoming eligible to do so, consistent with experience. These rates are unchanged from the previous review and are supported by (sparse) recent experience.

Resignation/transfer rates

Resignation is extremely unlikely due to the greatly reduced value of benefits and transfers to other judicial schemes seem unlikely. I have assumed that judges will leave the scheme as resignations or transfers at the rate of 1% per year. This is equivalent to assuming one resignation about every twelve years. There have been no recent resignations.

Proportions married and age differences between judges and their spouses

I have adopted the same basis as was used in the previous valuation. Proportions married are at death, rather than at retirement, and reduce from 80% at age 60 to 40% at age 90. Spouses are assumed to be younger than judges.

New entrants

There have been three new entrants, of nearest age 57, 61 and 64 in the last 6 years. I have adopted the same new entrant age profile as used at the previous valuation, with new entrants assumed to range in age from 45 to 65. This assumption is relevant in producing projected financial results, and in estimating the cost of the scheme.

The only deviation from the demographic assumptions above is that I have allowed explicitly for the known circumstances of the retirement of the Chief Justice and consequent membership changes expected in July 2016:

- commencement of pension for current Chief Justice;
- increase in salary for current Solicitor General on move to Chief Justice role;
- new Solicitor General.

5. Valuation Method

Each judge's expected future benefits are projected using the assumed decrement rates and rates of salary increase. These future payments have then been discounted to the valuation date using the assumed discount rate. Reversionary spouse benefits are also valued in the same way.

The liability for future benefits payable to current judges is split between past and future service using the proportionate approach. I have apportioned the accrual of benefit over the period between entry and the point at which the maximum benefit accrual is achieved, i.e. the first point at which the pension benefit vests. Once the maximum benefit accrual is reached, the benefit is considered to be fully accrued. This apportionment method is consistent with the requirements of paragraph 67 of AASB119, and is the proportionate approach described in Professional Standard 402 of the Actuaries Institute.

Current pensioners' expected future benefits are projected in the same way as for current members, using assumed mortality rates, proportions married and future salary increases. The whole liability for each pensioner is an accrued liability.

No allowance is made for surcharge debts in the valuation.

6. Valuation Results

Accrued liabilities at 30 June 2016, as well as at the last triennial valuation, are shown below.

	Membership at 2016	2013 3.8% discount \$M	2016 2% discount \$M	2016 4% discount \$M
Members	8 members	23.71	38.299	25.677
Pens (incl. reversions)	12 pensioners 2 reversions	60.72	70.656	56.232
Total		84.43	108.955	81.910

The accrued liability has decreased from \$84.4M to \$81.9M in the last three years. The progression from 2013 to 2016 is as follows:

Liability at 2013	\$84.4M
Expected liability at 2016	\$101.5M
Change in discount rate at 2016 from 3.8% to 4% pa	-\$2.2M
Change in salary/pension inflation rate from 4.5% to 4% pa	-\$6.8M
Change in assumed mortality	-\$2.3M
Salary/pension inflation lower than expected 2013-2016	-\$8.6M
Other experience variations	+\$0.3M
Actual liability at 2016	\$81.9M

The above progression shows some significant changes between 2013 and 2016. The economic basis at the current review is less conservative than in 2013, reducing liability considerably. Salary growth over the triennium was much lower than expected, reducing liability compared to expectations even further.

The scheme is open to new members, and so the liability is expected to increase over time in line with salary increases and further service accruals for current and future judges. The new entrant funding rate (the employer contribution rate required to fund the expected benefits for a typical new entrant) is 126% of salary at this valuation and the contributor future service funding rate (the employer contribution rate required to fund expected future accruals of current members over expected future service) is 93% of salary.

The sensitivity of the valuation result to changes in assumptions is demonstrated below.

Assumption variation	Impact of change	Liability
Base triennial assumptions		\$81.9M
Discount rate +1% pa	-9.8%	\$72.1M
Wage inflation rate +1% pa	+11.8%	\$93.7M
Mortality rates -10%	+2.8%	\$84.7M
Resignation from 1% to 5% pa	-3.2%	\$78.7M
Lower ret. rates @ ages 60-67	-1.3%	\$80.6M

The valuation result is sensitive to the discount rate and wage inflation assumptions. Mortality rates estimate the expected future term of payments, so are also an important determinant of liability. Exit rates (either as resignations or retirements) for younger members impact on likelihood of pension, while retirement rates only impact on timing, rather than eligibility for pension, so are less important.

7. Projections

The table below sets out expected future payments in each financial year and expected accrued liabilities at the end of each year. Existing members and new entrants are included in the projection. All amounts are expressed in nominal dollars of the projection year.

Year to 30 June	Projected cash flows (\$ million)			Projected accrued liability (\$ million)			as at 30 June
	In force	New ents	Total	In force	New ents	Total	
2016				81.91	0.00	81.91	2016
2017	3.28	0.00	3.28	85.99	0.37	86.37	2017
2018	3.42	0.00	3.43	90.08	1.05	91.13	2018
2019	3.55	0.00	3.55	94.07	1.97	96.05	2019
2020	3.78	0.01	3.78	96.97	4.21	101.18	2020
2021	4.08	0.02	4.10	98.66	7.17	105.84	2021
2022	4.34	0.03	4.37	99.78	10.85	110.64	2022
2023	4.72	0.05	4.77	99.96	16.23	116.19	2023
2024	5.14	0.07	5.21	99.41	22.58	121.98	2024
2025	5.39	0.10	5.49	98.58	29.50	128.08	2025
2026	5.54	0.13	5.68	97.57	37.06	134.63	2026
2027	5.70	0.19	5.89	95.79	45.17	140.96	2027
2028	5.86	0.27	6.12	93.53	53.86	147.39	2028
2029	5.99	0.37	6.35	91.04	63.18	154.22	2029
2030	6.09	0.52	6.61	88.35	72.43	160.79	2030
2035	6.22	2.11	8.33	72.52	121.58	194.10	2035
2040	5.78	4.36	10.14	54.36	182.03	236.39	2040
2045	4.81	7.16	11.97	36.56	253.87	290.43	2045
2050	3.50	11.12	14.62	21.63	332.89	354.52	2050
2055	2.24	15.83	18.06	10.86	423.03	433.89	2055
2060	1.19	21.10	22.30	4.15	524.67	528.82	2060

The projections make no allowance for the repayment of surcharge debts. There is no allowance for any increase in the number of judges, but the scheme is assumed to remain open indefinitely for the purpose of these projections.

8. Summary and Recommendations

Based on the assumptions set out in this review the accrued liability at 30 June 2016 is \$81.909M, and benefit payments over the next 3 financial years are expected to be \$3.3M, \$3.4M and \$3.6M.

The number of pensioners, both former judges and spouses, will increase slowly in coming years. Overall membership will continue to increase in this open scheme for many years.

Actuarial reviews aid financial reporting and policy analysis and comply with the spirit of SIS. I recommend that the next review be carried out as at 30 June 2019.



John Rawsthorne
Actuary
19 July 2016

Appendix 1 Benefit Design

Salary is the current judicial salary is the salary payable at any time to the holder of that judicial position. Thus pensions are indexed to movements in salaries.

Membership is open to the Director of Public Prosecutions and the Solicitor General as well as to judges.

The maximum retirement age is 70 for all members. Previously the Solicitor General and Director of Public Prosecutions had a maximum retirement age of 65, but this is now 70, consistent with other members.

Age Retirement

Members may retire on a pension of 60% of salary after attaining age 60 and completing 10 years of service.

Members who reach their maximum retirement age and have completed between 6 and 10 years of service receive a pension of 0.5% of salary for each completed month of service.

Ill health

Members retiring due to permanent disability or infirmity receive a pension of 60% of salary provided they would have completed 10 years of service if they had continued to serve until the maximum retirement age. If less than 10 years would have been served the benefit is 0.5% per potential month of service.

Death

On death in service or after retirement a pension of 62.5% of the pension that would have been payable on ill health retirement, or was being paid, is paid to a surviving spouse. The spouse must have married before retirement, before the judge attained age 60 or more than 5 years before the death of the judge, and the pension ceases if the spouse remarries.

Children's pensions

A very small pension is payable to a child if a widow(er) of a judge is receiving a pension. A large pension is payable to a child if a judge dies without leaving a widow(er) or if a widow(er) dies. No allowance has been made for child pensions in this valuation.

Appendix 2 Demographic Assumptions

Members and New Entrants

Age	Death	Invalidity	Resignation	Retirement
45	0.001	0.002	0.01	-
50	0.002	0.004	0.01	-
55	0.003	0.011	0.01	-
60	0.004	0.022	0.01	0.25
61	0.004	0.024	0.01	0.25
62	0.005	0.025	0.01	0.25
63	0.005	0.025	0.01	0.25
64	0.006	0.025	0.01	0.25
65	0.006	0.025	0.01	0.25
66	0.007	0.025	0.01	0.25
67	0.008	0.025	0.01	0.25
68	0.008	0.025	0.01	0.30
69	0.009	0.025	0.01	0.50
70	-	-	-	1

- Males and females have the same in-service demographic assumptions.
- Retirement rates only apply once pension entitlement has been reached. Invalidity and resignation decrements only apply prior to reaching pension entitlement.

Pensioners and Spouses

Age	Death of Male	Death of Female	Proportion married	Rate of Mort Improvement
50	0.0029	0.0018	0.80	0.0205
55	0.0044	0.0026	0.80	0.0243
60	0.0066	0.0040	0.80	0.0271
65	0.0105	0.0062	0.79	0.0286
70	0.0167	0.0103	0.77	0.0286
75	0.0289	0.0181	0.72	0.0268
80	0.0519	0.0332	0.63	0.0228
85	0.0934	0.0664	0.54	0.0172
90	0.1612	0.1281	0.40	0.0102
95	0.2478	0.2188	0.26	0.0021

- Spouses are assumed to be 4 years younger than pensioners up to age 90, after which they are assumed to be 5 years younger.

New entrant distribution

The assumed distribution of future new entrants per age is set out below. One in four is assumed to be female. All other new entrant assumptions are consistent with assumptions for current members.

Age	Chief Justice	Judges	Public servants
46-49	-	0.06	0.02
50-56	0.012	0.06	0.02
57-59	0.012	-	-

Appendix 3: Surcharge Capitalisation Factors

Below are factors appropriate for determining the capital value of pensions and determining appropriate reductions applying under Section 3D or 3E of the Supreme Court (Judges Pensions) Act. These factors are based on the demographic basis this triennial review of the Judges Pension Scheme. I have assumed that future salary and pension growth will be 4% per annum, and I have discounted future payments at 4% per annum.

Exact age	Male	Widow	Exact age	Male	Widow
55	36.18	34.63	63	27.88	26.40
56	35.14	33.58	64	26.87	25.39
57	34.09	32.54	65	25.86	24.40
58	33.05	31.51	66	24.85	23.41
59	32.01	30.47	67	23.85	22.43
60	30.97	29.45	68	22.86	21.46
61	29.94	28.42	69	21.88	20.50
62	28.91	27.41	70	20.91	19.55

The factors above are higher than those that previously applied due mostly to changed economic assumptions.

These factors can be applied either at pension commencement, based on the age of the pensioner at commencement, or at the pensioner's current age if the pension is already in payment. The "Male" factors should be used for retirement pensions, while the "Widow" factors should only be used for determining reductions for death-in-service pensions, and should be based on the age of the widow at pension commencement. The factors above are for exact ages, and so interpolation should be applied for fractional ages.

As an example of the application of the factors, consider a male pensioner aged 65.5 with a surcharge debt of \$250,000 and a pension of \$150,000 per annum. The capitalisation factor for the pension is:

$$\text{Capitalisation factor} = (0.5 \times 25.86 + 0.5 \times 24.85) = 25.36$$

The appropriate surcharge reduction is:

$$\text{reduction} = \$250,000 / 25.36 = \$9,858 \text{ per annum}$$

The residual pension after surcharge reduction, to be paid from the pensioner's current age onwards, is:

$$\text{residual} = \$150,000 - \$9,858 = \$140,142 \text{ per annum.}$$

This residual is then indexed in the normal way from year to year. The spouse reversion is also reduced in the same way, and is determined as 62.5% of the residual pension, as indexed.

The factors set out above can continue to apply until completion of the next triennial review, due in 2019.