

Northern Territory Supreme Court Judges Pension Scheme

Triennial Actuarial Review as at 30 June 2019

August 2019

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 2019 by James Richards, the Commissioner of Superannuation on 17 July. The previous review was conducted by me as at 30 June 2016, and presented in a report dated 19 July 2016.

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.

There were no changes to the rules of the scheme during the last three years. However, the maximum retirement age for all scheme members was increased, independently of scheme rules, from age 70 to age 72. The ability to retire with a partial pension at or after age 70 with less than ten years' service was retained for existing members.

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. Appendix 3 sets out surcharge capitalisation factors to be used when reducing members' benefits for surcharge debts.

The scheme has no Trustees and is administered by Department of Attorney General and 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 2019 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 9% (an annual rate of 2.9%), from \$420,810 at 30 June 2016 to \$458,840 at 30 June 2019. There is a further known 2.0% increase in July 2019.

During the review period the former Chief Justice retired, with the former Solicitor General promoted to the role. A new appointment was made as Solicitor General. There were no other changes to membership for serving Judges.

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

Age at entry	Number	Duration of service	Number
50-54	1	0-3	1
55-59	1	3-6	0
60-64	2	6-10	5
65-70	4	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 2019 there were 13 former judges (average age 79) and 2 spouses (average age 71) receiving pensions. There were no pensioner deaths during the last three years, and only one 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%	2013/14	3.2	3%
2007/08	1.5	14%	2014/15	3.2	0%
2008/09	1.7	9%	2015/16	3.1	-4%
2009/10	2.0	20%	2016/17	3.3	+6%
2010/11	2.4	23%	2017/18	3.6	+9%
2011/12	2.7	10%	2018/19	3.6	0%
2012/13	3.2	18%			

Payments made to pensioners have decreased slightly during the last three years, with low pension growth and one additional pensioner. 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. The July 2019 remuneration tribunal ruling increased salaries by 2.0%, and I have assumed that this is the only increase during 2019/20. Department of Treasury & Finance currently assumes salary growth of 2.5% for 2020/21 and 3.0% per annum thereafter. These assumptions are broadly consistent with external forecasts and scheme experience. I am satisfied that these are reasonable assumptions for valuation purposes for this scheme and have adopted these assumptions 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 2019 was about 1.3% pa, very low in historical terms, while NT's long term borrowing costs would be slightly higher currently. DTF assume a longer term discount rate of 3.5% pa.

While not directly relevant for this scheme, DTF assumes CPI inflation will be at 1.5% for 2019/20, then 2% pa thereafter. This assumption appears reasonable and consistent with our expectations.

NT Treasury's assumptions for long term discount rate and CPI inflation infer a real rate of return of 1.5% 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 1.5% 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 0.5% pa in the long term on Treasury's assumed basis. This is slightly lower than longer term average gaps of around 1-2%, and 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 3.5% 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:

- 3.5% pa discount rate;
- 3.0% pa salary inflation rate, but with lower growth assumed for two years;
- 2.0% CPI inflation, but with lower inflation assumed for the first projection year.

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 1.32% pa (www.rba.gov.au 1/7/19), 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 future promotional increases have been ignored in this valuation.

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 fifteen 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 20 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 pension qualification.

Pensioner mortality

I have adopted the Australian Life Tables 2010-12 for pensioner mortality. These rates are unchanged from the previous valuation, 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. There is no selection effect for pensioners, and no direct evidence that these pensioners will have experience any different to the overall Australian population at the same ages.

Resignation rates

Resignation without pension entitlement is unlikely due to the much lower value of benefits. 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.

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 72. This means the majority of judges are assumed to retire within about 4 years of becoming eligible to do so, consistent with experience, although those who join after age 62 cannot retire with

pension entitlement until reaching age 72, and are assumed not to. These rates are unchanged from the previous review, but with an extension of the retirement age to 72 rather than 70, and are supported by (sparse) recent experience.

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 six new entrants in the last decade, with entry ages ranging from 50 to 63. 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.

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 2019, as well as at the last triennial valuation, are shown below.

	Membership at 2019	2016 4.0% discount \$M	2019 3.5% discount \$M
Members	8 members	25.677	36.469
Pens (incl. reversions)	13 pensioners 2 reversions	56.232	50.115
Total		81.910	86.584

The accrued liability has increased from \$81.9M to \$86.6M in the last three years. The progression from 2016 to 2019 is as follows:

Liability at 2016	\$81.9M
Expected liability at 2019	\$94.1M
Reduction in discount rate at 2019	+\$5.1M
Reduction in future salary/pension inflation rate at 2019	-\$12.1M
Extension of retirement age to 72	-\$1.0M
Salary/pension inflation lower than expected 2016-2019	-\$2.0M
Other experience variations (fewer pensioner deaths and contributor resignations than expected in triennium)	+\$2.5M
Actual liability at 2019	\$86.6M

The above progression shows some significant changes between 2016 and 2019. The overall economic basis at the current review is less conservative than in 2016, reducing liability by a moderate amount. Salary growth over the triennium was slightly lower than expected, reducing liability compared to expectations further. The continued survival of pensioners has increased liability slightly compared to expectations.

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 114% 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 60% of salary.

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

Assumption variation	Impact of change	Accrued liability
Base triennial assumptions		\$86.6M
Discount rate +1% pa	-11.3%	\$76.8M
Wage inflation rate +1% pa	+11.2%	\$96.3M
Mortality rates -10%	+3.4%	\$89.5M
Resignation from 1% to 5% pa	-2.4%	\$84.5M
Lower ret. rates @ ages 60-67	-1.4%	\$85.3M

The accrued liability and the future service funding rate are both 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.

The employer liability measured in accordance with AASB119 is different to the triennial review liability above, due to a lower discount rate of 1.3% pa under AASB119, compared to the triennial discount rate of 3.5% pa. The accrued liability under AASB119 is \$116.468M. Complete valuation results under AASB119 are provided to DTF separately to this report.

7. Projections

The table below sets out expected future payments in each financial year and expected accrued liabilities at the end of each year, measured using a 3.5% pa discount rate. 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	
2019				86.58	0.00	86.58	2019
2020	3.69	0.00	3.70	89.12	0.77	89.90	2020
2021	3.95	0.00	3.95	90.27	2.55	92.83	2021
2022	4.26	0.01	4.27	90.78	5.26	96.04	2022
2023	4.54	0.02	4.57	90.60	8.67	99.27	2023
2024	4.81	0.04	4.85	89.58	12.97	102.55	2024
2025	5.09	0.06	5.15	88.24	18.12	106.36	2025
2026	5.30	0.09	5.38	86.64	23.85	110.50	2026
2027	5.43	0.12	5.55	84.36	30.17	114.53	2027
2028	5.54	0.16	5.70	81.68	37.05	118.73	2028
2029	5.60	0.20	5.81	78.84	44.43	123.27	2029
2030	5.63	0.28	5.91	75.87	51.86	127.72	2030
2031	5.64	0.41	6.05	72.79	59.15	131.93	2031
2032	5.63	0.59	6.22	69.61	66.36	135.97	2032
2033	5.59	0.83	6.42	66.35	73.58	139.94	2033
2034	5.54	1.11	6.64	63.05	80.72	143.76	2034
2035	5.46	1.43	6.89	59.69	87.83	147.52	2035
2040	4.84	3.21	8.05	42.88	127.10	169.98	2040
2045	3.83	5.11	8.95	27.61	172.40	200.01	2045
2050	2.66	7.68	10.34	15.63	218.30	233.94	2050
2055	1.62	10.64	12.26	7.51	266.04	273.55	2055
2060	0.82	13.70	14.52	2.74	316.04	318.79	2060

The projections make no allowance for 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, including a discount rate of 3.5% pa and a long term salary/pension inflation rate of 3.0% pa, the accrued liability at 30 June 2019 is \$86.584M. Benefit payments over the next 3 financial years are expected to be \$3.7M, \$4.0M and \$4.3M.

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 2022.



John Rawsthorne
Actuary
15 August 2019

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 72 for all members. This has increased from age 70 at the previous review, in accordance with the Justice Legislation Amendment Act 2019.

Age Retirement

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

Existing members who reach age 70 and have completed between 6 and 10 years of service receive a pension of 0.5% of salary for each completed month of service, while for new members after February 2019 the minimum age threshold for this pension is 72.

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	0.30
70	0.010	0.025	0.01	0.30
71	0.011	0.025	0.01	0.50
72	-	-	-	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 3% per annum, and I have discounted future payments at 3.5% per annum, consistent with the long term economic basis at this valuation.

The factors in the table below are for age last birthday at the relevant date, and no interpolation between integral ages is required. The factors apply for both males and females, and include an allowance for potential reversions to surviving spouses.

Age last birthday	Capitalisation factor		Age last birthday	Capitalisation factor	
	Member	Spouse		Member	Spouse
50	36.77	35.52	62	26.20	24.94
51	35.90	34.65	63	25.31	24.06
52	35.03	33.77	64	24.43	23.18
53	34.16	32.89	65	23.54	22.30
54	33.28	32.01	66	22.65	21.42
55	32.40	31.13	67	21.77	20.55
56	31.52	30.25	68	20.89	19.68
57	30.64	29.37	69	20.01	18.82
58	29.75	28.48	70	19.14	17.97
59	28.87	27.60	71	18.27	17.12
60	27.98	26.71	72	17.41	16.29
61	27.09	25.83	73	16.55	15.46

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 "Member" factors should be used for retirement pensions, while the "Spouse" 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.

As an example of the application of the factors, consider a male pensioner aged 65 last birthday with a surcharge debt of \$250,000 and a pension of \$150,000 per annum. The appropriate surcharge reduction is:

$$\text{reduction} = \$250,000 / 23.54 = \$10,620 \text{ per annum}$$

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

$$\text{residual} = \$150,000 - \$10,620 = \$139,380 \text{ per annum.}$$

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 2022.