Tasmanian Association of State Superannuants

Actuarial study of improvements to pension indexation

PREPARED BY: Donald Campbell BCom, FIAA
and John Smith BA (Maths), FIAA

MAY 2012

The Heron Partnership Pty Limited
ABN 79 100 196 272 AFSL 252538
Level 4, Austral House
115 Collins Street
Melbourne Vic 3000
T: +61 3 9254 4900 F: +61 3 9663 9557
www.heronpartners.com.au

Table of Contents

1. Introduction

The Tasmanian Association of State Superannuants (TASS) have requested The Heron Partnership to undertake an actuarial study comparing the pension indexation for Retirement Benefit Fund (RBF) pensioners in the State Government superannuation plan, that uses the Consumer Price Index against the indexation method currently applied to the Age Pension paid by Centrelink.

This report sets out a comparison of the indexation methods using historical data over the previous 10 years and a comparison of the expected future pension payments over 10 years using appropriate assumptions for the future long term rate of indexation under the current and proposed methods.

Our comparisons show that over time, the Age Pension indexation method results in significantly higher pension payments than the current RBF indexation method. The gap between payments under the two methods is expected to continue to widen in future.

2. Indexation methods under comparison

RBF currently increases all pensions in payment every January and July based on the movement in the Consumer Price Index - All Groups, All Capital Cities (CPI) during the 6 months to the previous September or March respectively. If the movement is negative, a zero increase is applied.

According to the Department of Families, Housing, Community Services and Indigenous Affairs website (www.fahcsia.gov.au/sa/seniors/payments/Pages/AgePension.aspx), Age Pensions paid by Centrelink are adjusted each March and September by the greater of the increase in the CPI or the Pensioner and Beneficiary Living Cost Index (PBLCI) during the 6 months to the previous quarter end. After this adjustment is made, the maximum base pension rate is compared with 41.76 per cent of Male Total Average Weekly Earnings (MTAWE) for pensioner couples combined and around 27.7 per cent of MTAWE for single pensioners. If the pension is below the MTAWE wages benchmark, it is increased to that rate.

It is important to note that the "greater increase between CPI and PBLCI" is not determined by the annual increase each year but by the total increase in each index from a reference year. Similarly, the Age Pension is compared to a fixed percentage of MTAWE. This means that to apply this method to RBF pensions, a reference date would need to be determined in order to compare the total indexation under CPI, PBLCI and MTAWE from that date. The choice of reference date does not impact our projections as we are using a fixed long term assumption for future indexation.

3. Data used in analysis

We received the following data from the administrator of RBF and the Tasmanian State Department of Treasury and Finance:

- the historical RBF pension indexation rates from 2000 to 2011;
- the total annual RBF Contributory Scheme pension payments each year from 1999/2000 to 2010/2011;
- confirmation that all RBF pensions are indexed using the indexation rate described in section 2 above; and
- actuarial projections of expected future pension payments from 2012/2013 to 2021/2022 provided by Mercer to Treasury in their report dated March 2011.

Historical increases to the Age Pension were taken from the Guide to Social Security Law provided by the Department of Families, Housing, Community Services and Indigenous Affairs (http://www.fahcsia.gov.au/guides_acts/ssg/ssguide-5/ssguide-5.2/ssguide-5.2.2/ssguide-5.2.2.10.html)

Historical indices were taken from the Australian Bureau of Statistics website:

- 6302.0 Average Weekly Earnings, Australia, Nov 2011
  http://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0
- 6401.0 Consumer Price Index, Australia, Mar 2012
  http://www.abs.gov.au/ausstats/abs@.nsf/mf/6401.0
- 6467.0 Pensioner and Beneficiary Living Cost Index, Mar 2012
  http://www.abs.gov.au/ausstats/abs@.nsf/mf/6467.0

4. Historical comparison

Table 1 and Chart 1 below show the projection of pension payments covering a 10 year period to date using a per annum pension payment at the start of the period of $17,000 per annum, under the historical indexation applied to RBF pensions and the Government Age Pension.

As shown, the age pension indexation results in a significantly larger pension. This is due to large catch up increases to the Age Pension in 2009 when the new indexation policy was introduced. Therefore we have also included the same pension indexed with the historical movement of MTAWE over the same period as a better comparison between the current and proposed methods. Consistent with the current RBF indexation with CPI, we have applied the most recent MTAWE available at the date of indexation (i.e. February MTAWE for July indexation; August MTAWE for the following January indexation).

Table 1: Historical indexation of annual pension of $17,000 pa over 10 years to date

Date of indexation	Indexed at historical RBF rates	Indexed at Age Pension rate	Indexed with MTAWE
1 Jul 1999	$17,000	$17,000	$17,000
1 Jan 2000	$17,221	$17,240	$16,998
1 Jul 2000	$17,479	$17,499	$17,559
1 Jan 2001	$18,283	$18,538	$17,975
1 Jul 2001	$18,539	$18,910	$18,211
1 Jan 2002	$18,743	$19,310	$18,690
1 Jul 2002	$19,081	$19,841	$19,188
1 Jan 2003	$19,348	$20,199	$19,455
1 Jul 2003	$19,735	$20,711	$20,110
1 Jan 2004	$19,853	$21,299	$20,516
1 Jul 2004	$20,131	$21,836	$20,961
1 Jan 2005	$20,312	$22,141	$21,094
1 Jul 2005	$20,597	$22,405	$21,788
1 Jan 2006	$20,926	$22,998	$22,399
1 Jul 2006	$21,219	$23,506	$22,850
1 Jan 2007	$21,750	$24,089	$23,280
1 Jul 2007	$21,750	$24,700	$23,876
1 Jan 2008	$22,163	$25,293	$24,564
1 Jul 2008	$22,666	$25,721	$24,966
1 Jan 2009	$23,267	$26,441	$25,506
1 Jul 2009	$23,267	$26,803	$26,004
1 Jan 2010	$23,603	$31,606	$26,677
1 Jul 2010	$23,939	$32,979	$27,559
1 Jan 2011	$24,261	$33,685	$27,669
1 Jul 2011	$24,737	$34,306	$28,620

Chart 1: Historical indexation of annual pension of $17,000 pa over 10 years to date

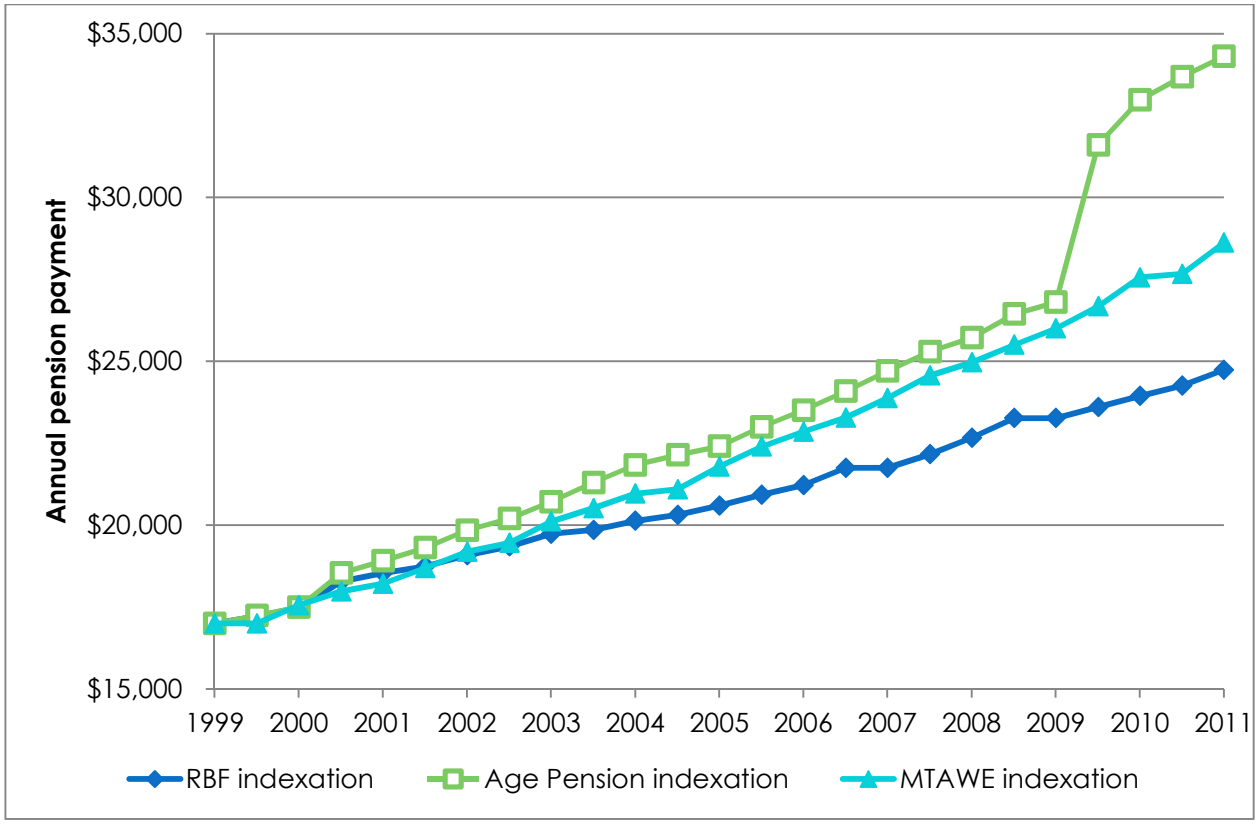


Table 2 shows the value of Life Pensions paid by RBF per financial year from 1999/2000, and our estimate of the pension payments if the pensions had been indexed with MTAWE from 2000 onwards. The third column of Table 2 shows the estimated pension payments when applying the greater of CPI indexation from 2000 and MTAWE from 2000 – this is effectively the greater of the two other columns.

The estimated total pension payments under MTAWE are calculated by splitting the annual change in historical pension payments between the change due to indexation and the change due to pensions commencing and ceasing. The annual change in pension payments due to indexation is then adjusted for the difference in CPI and MTAWE in each year and added to the change due to pensions commencing and ceasing to give the estimated total annual change in pension payments under MTAWE.

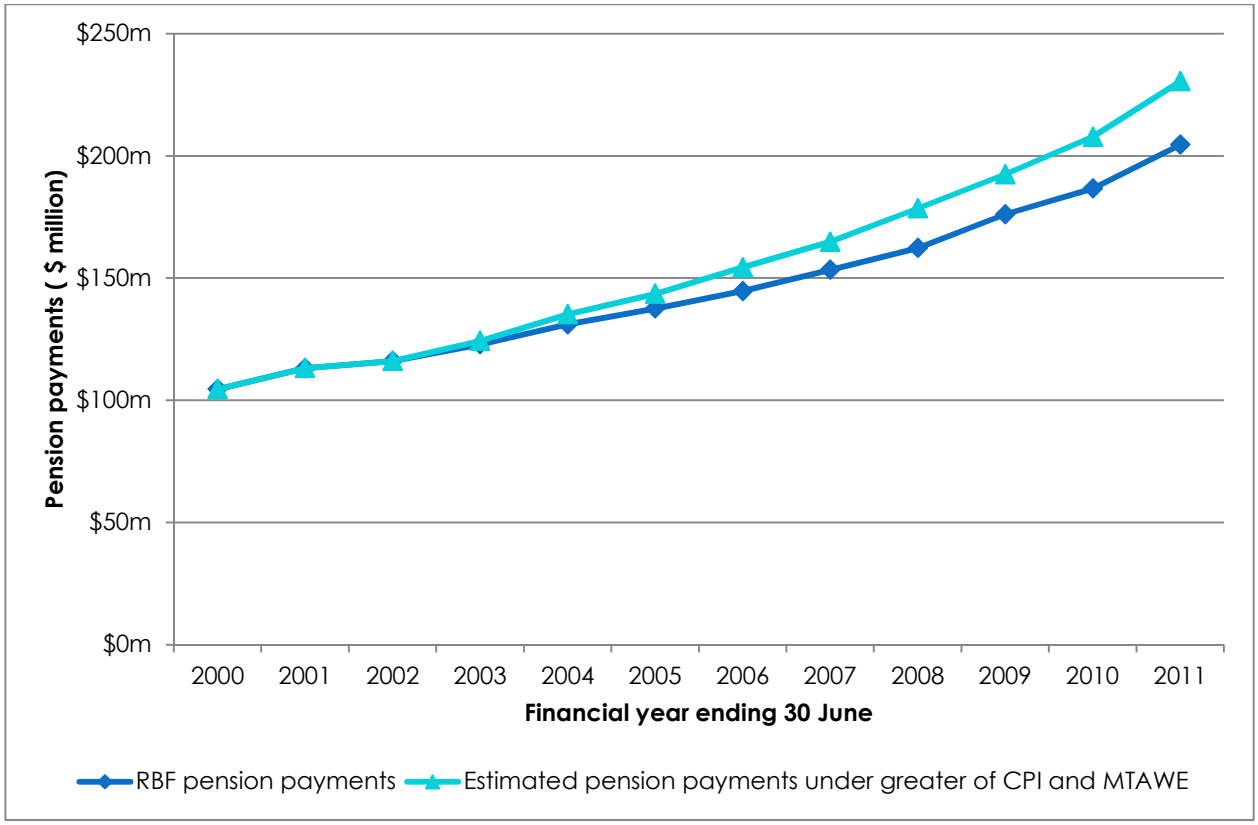
This method does not allow specifically for survival as we do not have the demographic data for the current RBF pensioner membership required for a more detailed calculation. However, we expect this method gives a reasonable estimate for the overall impact of a change in indexation.

Table 2: Comparison of indexation methods using total value of Life Pensions paid by RBF

Financial year	Life Pensions paid by RBF ($ '000s)	Estimate of life pension payments indexed with MTAWE ($ '000s)	Estimate of life pension payments applying the greater of CPI and MTAWE ($ '000s)
1999 - 2000	$104,484	$104,484	$104,484
2000 - 2001	$113,095	$113,134	$113,134
2001 - 2002	$116,022	$115,579	$116,022
2002 - 2003	$122,823	$124,279	$124,279
2003 - 2004	$131,026	$135,146	$135,146
2004 - 2005	$137,509	$143,557	$143,557
2005 - 2006	$144,666	$154,312	$154,312
2006 - 2007	$153,379	$164,788	$164,788
2007 - 2008	$162,236	$178,513	$178,513
2008 - 2009	$176,095	$192,411	$192,411
2009 - 2010	$186,639	$207,770	$207,770
2010 - 2011	$204,567	$230,462	$230,462

Chart 2 compares the RBF actual payments and the greater of CPI and MTAWE from the table above.

Chart 2: Comparison of indexation methods using total value of Life Pensions paid by RBF



5. Future projections

In order to project the future impact of a change in indexation, we require an assumption for future indexation under the current method and the Age Pension method. As this is a comparison of the two methods, it is the difference between the assumptions that is most important.

Our assumption for the average future increases in the Consumer Price Index over the long term is 2.5% pa. This is consistent with the Reserve Bank of Australia's target for inflation of between 2% and 3%, and 2.5% pa is the assumption used by Mercer as the actuary of RBF for their projections of future pension payments.

The Pensioner and Beneficiary Living Cost Index (PBLCI) is calculated by the Australian Bureau of Statistics using similar methodology to the calculation of CPI, but focusing on the price inflation for goods and services purchased by pensioners. Over the long term, we expect that the PBLCI will be consistent with overall price inflation and so a long term assumption of 2.5% pa is also appropriate.

Historically, long term wage inflation has exceeded price inflation by a margin of between 1% and 2%. Table 3 compares the 10 year rolling average (i.e. the average annualised change in the index over the previous 10 years) since 2004 for CPI and MTAWE.

Table 3: Difference between 10 year rolling average of CPI and MTAWE

Period ending	MTAWE	CPI	Difference
Aug-04	3.6%	2.7%	0.9%
Nov-04	3.5%	2.6%	0.8%
Feb-05	3.6%	2.5%	1.1%
May-05	3.7%	2.5%	1.2%
Aug-05	3.8%	2.4%	1.4%
Nov-05	3.7%	2.4%	1.3%
Feb-06	3.8%	2.5%	1.4%
May-06	3.8%	2.6%	1.2%
Aug-06	4.0%	2.6%	1.3%
Nov-06	4.0%	2.6%	1.4%
Feb-07	4.0%	2.6%	1.4%
May-07	4.2%	2.7%	1.4%
Aug-07	4.2%	2.9%	1.4%
Nov-07	4.0%	2.9%	1.1%
Feb-08	4.1%	3.0%	1.0%
May-08	4.1%	3.1%	1.0%
Aug-08	4.2%	3.2%	1.0%
Nov-08	4.3%	3.1%	1.2%
Feb-09	4.3%	3.2%	1.2%
May-09	4.2%	3.2%	1.1%
Aug-09	4.6%	3.2%	1.4%
Nov-09	4.6%	3.2%	1.4%
Feb-10	4.6%	3.2%	1.4%
May-10	4.6%	3.2%	1.4%
Aug-10	4.4%	2.8%	1.6%
Nov-10	4.7%	2.9%	1.8%
Feb-11	4.6%	2.9%	1.7%

Therefore, we have projected the impact on future pension payments using two bases: 1% and 2% margins above CPI. The impact of moving to Age Pension indexation is expected to lie between these two bases.

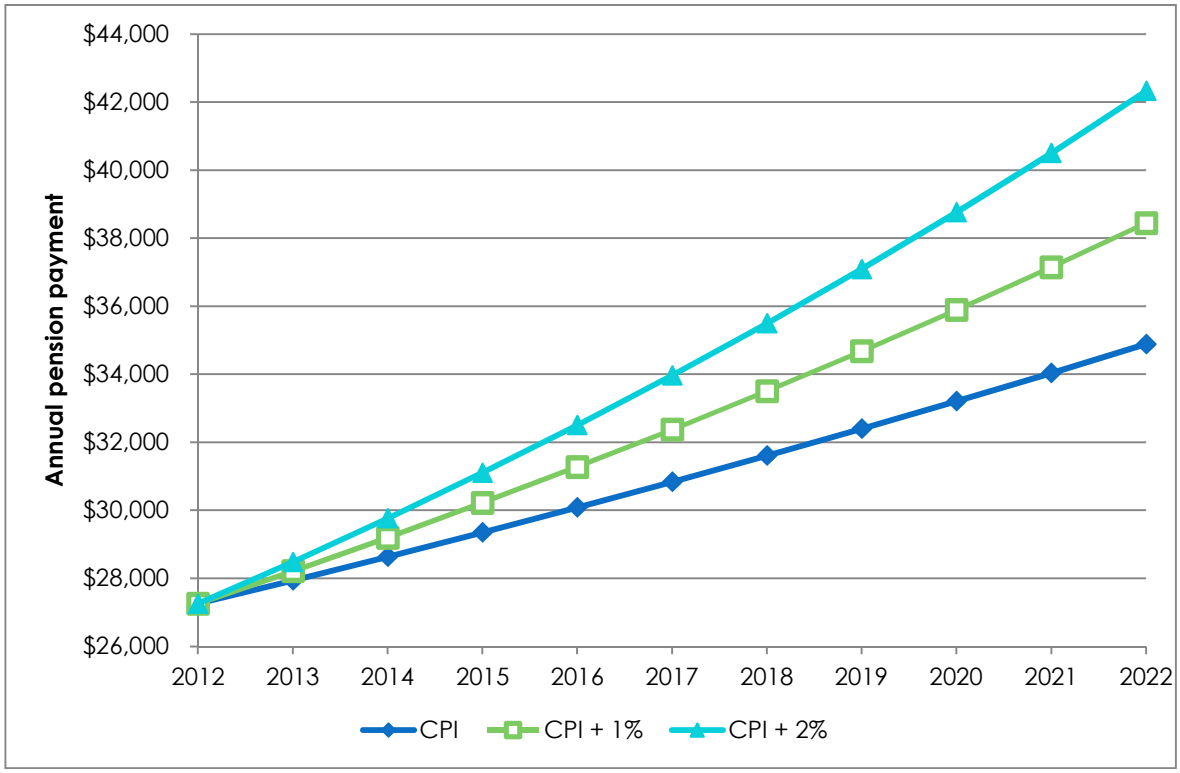
Table 4 and Chart 3 show future projections of an individual pension payment for 10 years assuming a per annum pension payment at the start of the period of $27,253 per annum, applying pension indexation of 2.5% (CPI), 3.5% (CPI + 1%) and 4.5% (CPI + 2%).

The initial pension payment of $27,253 has been selected as a direct comparison against the current level of the Age Pension for a couple. The assumed rates of increase can be used to similarly project any other starting annual pension amount.

Table 4: 10 year future projection of an annual pension of $27,253 pa

Year	Indexed at CPI assumption (2.5%)	Indexed at CPI + 1% (3.5%)	Indexed at CPI + 2% (4.5%)
2012	$27,253	$27,253	$27,253
2013	$27,935	$28,207	$28,480
2014	$28,633	$29,194	$29,761
2015	$29,349	$30,216	$31,100
2016	$30,082	$31,274	$32,500
2017	$30,834	$32,368	$33,962
2018	$31,605	$33,501	$35,491
2019	$32,395	$34,674	$37,088
2020	$33,205	$35,887	$38,757
2021	$34,036	$37,143	$40,501
2022	$34,886	$38,443	$42,323

Chart 3: 10 year future projection of an annual pension of $27,253 pa



We were provided with an extract from the March 2011 actuarial report for the RBF showing the RBF actuary's 10 year projections of future total annual pension payments, based on a future long term CPI assumption of 2.5%.

Table 5 and Chart 4 show the RBF actuarial projection and our estimations of the impact on future total annual pension payments of changing to Age Pension indexation from 1 July 2012, under indexation assumptions of CPI +1% and CPI + 2%.

Our future projections of total annual pension payments were calculated similarly to the estimates of historical total pension payments in Section 4. The estimated total pension payments under the assumptions for the proposed indexation are calculated by splitting the annual change in the RBF actuary's projected pension payments between the change due to indexation and the change due to pensions commencing and ceasing. The annual change in pension payments due to indexation is then adjusted for the difference between the CPI assumption and the proposed indexation assumption in each year and added to the change due to pensions commencing and ceasing to give the estimated total annual change in projected pension payments.

As stated in Section 4, this method does not allow specifically for survival as we do not have the demographic data for the RBF membership required for a more detailed calculation. However, we expect this method gives a reasonable estimate for the overall impact of a change in indexation.

Table 5: Comparison of projected future total annual pension payments

Financial year	Expected future pension payments indexed at CPI (2.5%) ($ '000s)	Expected future pension payments indexed at CPI +1% (3.5%) ($ '000s)	Expected future pension payments indexed at CPI +2% (4.5%) ($ '000s)
2012-2013	$221,051	$222,127	$223,197
2013-2014	$234,370	$237,694	$241,034
2014-2015	$248,476	$254,260	$260,127
2015-2016	$263,410	$271,881	$280,555
2016-2017	$279,116	$290,518	$302,301
2017-2018	$295,336	$309,928	$325,146
2018-2019	$311,951	$330,007	$349,009
2019-2020	$329,311	$351,118	$374,276
2020-2021	$346,834	$372,698	$400,409
2021-2022	$363,946	$394,183	$426,868

Chart 4: Comparison of projected future total annual pension payments