Government Actuary's Department

Judicial Pension Scheme

Actuarial valuation as at 31 March 2012
Report by the Scheme Actuary

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Authors: George Russell
Deputy Government Actuary

Ian Boonin FIA

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1 Executive summary

This report is addressed to the Lord Chancellor and provides the results of the actuarial valuation of the Judicial Pension Scheme carried out as at 31 March 2012.

1.1 At the request of the Ministry of Justice, we have carried out an actuarial valuation of the Judicial Pension Scheme as at 31 March 2012 (the ***effective date***). The valuation has been undertaken in accordance with *The Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014*, which specify certain assumptions and require other assumptions to be the Lord Chancellor's best estimates. HM Treasury has confirmed its consent to the assumptions proposed by the Lord Chancellor.

1.2 This report is addressed to the Lord Chancellor and sets out the results of the valuation. The ***valuation results*** specify the rate of employer contribution payable for the four year period from 1 April 2015 (the ***implementation period***) and the ***employer cost cap***[1], both of which are to be set in regulations.

1.3 The key results of the valuation are as follows:

> ***Employer contribution rate*** payable for the ***implementation period***: 38.2% of pensionable pay

> ***Employer cost cap***: 25.7% of pensionable pay

> Total Scheme liabilities for service to the ***effective date*** of £2,138m and ***notional assets*** of £1,954m, giving a notional past service deficit of £184m.

[1] In accordance with Section 12 of the Public Service Pensions Act 2013 ('the Act')

2 Background

The valuation has been carried out in accordance with the HMT Directions.

2.1 The Judicial Pension Scheme (JPS or 'the Scheme') provides pensions to members of the Judiciary. The Scheme is an unfunded statutory public service pension scheme with the benefits underwritten by the Government. The Scheme is financed by payments from the employer and from those current employees who are members of the Scheme. The rate of employer contributions is typically set following an actuarial valuation. The previous valuation of the Scheme was carried out as at 31 March 2009[2] and this recommended an employer contribution rate of 34.25% of pay including an allowance of 0.25% of pensionable pay to cover the cost of administrative expenses.

2.2 GAD has been appointed as ***Scheme Actuary***[3] by the Lord Chancellor to carry out an actuarial valuation of the Scheme as at 31 March 2012 (the ***effective date***). This report on the valuation is addressed to the Lord Chancellor and is also being made available to HM Treasury (HMT).

2.3 The valuation has been undertaken in accordance with *The Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014* as amended[4] ('the Directions'). Terms defined in the Directions are shown in ***bold italics*** when used in this report.

2.4 The Directions require the existing JPS and the new scheme being introduced for the judiciary on 1 April 2015 under Section 1 of the 2013 Act[5] ('the 2015 Scheme') to be taken into account in aggregate for the purposes of the current valuation. The results shown in this report relate to 'the aggregate scheme', that is the combination of the existing JPS and 2015 Scheme[6].

2.5 The main requirements of the valuation are set out in the Directions. These are to determine the rate of employer contribution payable from 1 April 2015 (***the implementation date***) for the four year period from 1 April 2015 (the ***implementation period***) and the initial ***employer cost cap***[7], both of which are to be set in regulations[8]. Paragraph 22 of the Directions requires a number of results relating to the liabilities, ***notional assets***, and contribution rates to be prepared and reported. These results are set out in Section 4 of this report. Appendix H sets out where other

[2] The full results of the valuation as at 31 March 2009 can be found in GAD's report dated 31 March 2010.

[3] In accordance with direction 4 of *The Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014*

[4] Amendments are the *Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2014* and the *Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) (No 2) Directions 2014*

[5] *The Public Service Pensions Act 2013*

[6] Members of the judiciary can pay money purchase AVCs under paragraph 2.18 *The Judicial Pensions (Additional Voluntary Contributions) Regulations 1995*. This is not a connected scheme for the purpose of Section 11 of the *Public Service Pensions Act 2013* and so is not part of the aggregate scheme.

[7] In accordance with Section 12 of *The Public Service Pensions Act 2013*

[8] The Directions specify the ***implementation date*** for the purpose of the valuation calculations. However, the decision on the actual contribution rate to be implemented and from when is to be taken by the Lord Chancellor.

information as required by the Directions is provided in this, or related, valuation reports.

2.6 The ***employer contribution rate*** is expected to be reassessed at the actuarial valuation to be carried out as at 31 March 2016 (and each subsequent four yearly valuation). The next revision to the ***employer contribution rate*** is expected to take effect from 1 April 2019. The financial position relative to the ***employer cost cap*** will also be reconsidered at each four yearly valuation.

2.7 We have previously provided advice and information on certain aspects of the valuation. Some of the reports were issued in draft and there have been no substantive changes to the final version.

> *Judicial Pension Scheme: Report on membership data as at 31 March 2012,* previous version dated 11 September 2013, final dated 8 October 2014

> *Judicial Pension Scheme: Actuarial valuation as at 31 March 2012: Report on data used for experience analysis,* draft dated 12 September 2013, final dated 8 October 2014

> *Judicial Pension Scheme: Actuarial valuation as at 31 March 2012: Advice on assumptions,* draft dated 10 January 2014, final dated 8 October 2014

> *Judicial Pension Scheme: Report on methodology,* draft dated 21 August 2014 final dated 8 October 2014

Some of the reports were not signed off in case further information came to light before the conclusion of the valuation process, including changes to the Directions. The reports have been signed on 8 October 2014 alongside this report. Changes to the reports are not substantive. The finalised reports should be read in conjunction with this report.

2.8 Throughout this report the totals given for summed data may not be exactly the same as the sum of the components shown due to rounding effects.

2.9 Appendix I sets out the limitations of this report.

3 Key inputs

This section summarises what calculations were carried out, including the data, methodology and assumptions used, and the analysis performed on the results.

Data

3.1 At the ***effective date***, there were around 2,200 contributors to the Scheme with a total payroll of around £266 million and around 1,700 pensions in payment with total annual pensions amounting to around £77 million. There were 35 ex-contributors (including pension credit and debit members) who had not yet started to receive their pension. Appendix A provides a summary of the membership data. Further details on the data, including the checks carried out on that data, the limitations of those checks and adjustments made, are provided in the report *Judicial Pension Scheme: Report on membership data as at 31 March 2012* dated 8 October 2014.

3.2 The fee-paid judiciary were not included in this data and have been excluded from the valuation - see paragraph 7.5 below.

Benefits

3.3 The benefits provided to members of the JPS are set out in legislation[9]. A new scheme ('the 2015 Scheme') is being introduced from 1 April 2015 under separate regulations[10]. Some existing Scheme members will transfer to the 2015 Scheme on 1 April 2015. Under transitional arrangements aimed at providing protection for those nearest retirement age, older members will continue in the existing scheme until they leave due to retirement or otherwise, while others will transfer to the new Scheme at a later date.

3.4 The JPS currently has two sections, the 1981 Scheme and the 1993 Scheme. Both the 1981 Scheme and the 1993 Scheme are defined benefit occupational pension schemes, which provide benefits based on the member's salary close to retirement and the member's length of service. The principal benefits provided by the schemes are a pension payable to the member after retirement, a lump sum benefit payable at retirement date, and a pension payable to the spouse of the member after the member's death.

3.5 The target level of benefits in the majority of cases is to provide the member with a pension of approximately 50% of final salary, after 20 years of service. However, some members of the 1981 Scheme become entitled to a pension of half pay after 15 years of service. Normal retirement age is 65 years. Benefits are increased annually in deferment and payment by the PI Act (currently CPI).

3.6 A range of risk benefits is also provided in both schemes. These include spouses' pensions and children's pensions (payable if the member dies either in service or

[9] *Judicial Pensions Act 1981 and Judicial Pensions and Retirement Act 1993*
[10] *Draft regulations were consulted upon from 16 June to 29 September 2014*

after retirement), lump sum death benefits and early payment of pension and associated benefits on a breakdown in health.

3.7 The 2015 Scheme is a career average scheme with NPA equal to State Pension Age, an accrual rate of 2.32%, and revaluation of CPI while in service and out of service. Member contribution rates are tiered in relation to members' salaries.

3.8 Appendix B gives a summary of the benefits provided under the 2015 Scheme. It also sets out the criteria by which Scheme membership will be determined from 1 April 2015 when the 2015 Scheme is introduced and employee contribution rates payable from 2015. Further details on final salary scheme benefits and the membership of the two schemes from 1 April 2015 is provided in the report *Judicial Pension Scheme: Report on membership data as at 31 March 2012* dated 21 August 2014.

Notional assets

3.9 The Scheme is financed by contributions from employers and current members of the Scheme. The contributions paid to the Scheme fall into general government revenues. There is no actual fund of assets but an account is maintained of a notional fund made up of contributions paid by employers and members, supplemented by a return on the notional fund at a pre-determined rate and reduced by benefits as and when they are paid to retired and former members of the Scheme. The notional fund stood at £1,954 million as at the ***effective date***. Appendix C provides further information on the development of the notional fund since its inception as at 31 March 2005. Appendix D sets out the rates of contribution paid since the previous valuation and summarises other events affecting the Scheme since that valuation.

Assumptions

3.10 The Directions specify certain assumptions to be used for the valuation whilst requiring certain other assumptions to be set as the Lord Chancellor's best estimates, after taking the advice of the ***Scheme Actuary***. Actuarial advice on the scheme specific assumptions (including variations appropriate for the purposes of determining the ***employer cost cap***), and other relevant information (including an analysis of the Scheme's demographic experience), is set out in the report: *Judicial Pension Scheme: Actuarial valuation as at 31 March 2012: Advice on assumptions* dated 8 October 2014.

3.11 The Lord Chancellor has consulted relevant stakeholders and instructed us to adopt the best estimate assumptions recommended in our advice, having obtained HMT consent to those assumptions. Appendix E summarises the key assumptions made.

Methodology and calculations

3.12 The Directions specify that the Projected Unit Methodology should be used. Application of this methodology to determine the ***valuation results*** as specified requires some assumptions to be made about the size and make-up of the workforce up to the end of the ***implementation period***[11].

3.13 To calculate the ***employer contribution rate***, we have placed a net present value on the extra annual benefit accrual over the four-year ***implementation period*** and then adjusted for the repayment of the deficit over 15 years and member contributions. The ***employer cost cap*** is a measure of the cost of the 2015 Scheme only. The calculation of the ***employer cost cap*** is similar to that of the ***employer contribution rate*** but is based on all members being in the 2015 Scheme in April 2015, with assumptions reflecting members' likely behaviour had they never been members of the existing schemes, and no deficit contributions apply.

3.14 Appendix F summarises the actuarial methodology adopted for the valuation in more detail. Further details on methodology, including the approach taken to projecting the workforce and the rationale for that approach, are provided in the report *Judicial Pension Scheme: Report on methodology* dated 8 October 2014. Appendix F also summarises the calculations undertaken to determine the ***valuation results***.

3.15 Section 4 of this report sets out the ***valuation results***. These results do not make allowance for the admission of the fee-paid judiciary.

Analysis of result

3.16 Section 5 of this report provides a reconciliation of the financial position at the previous valuation date, 31 March 2009, and at the ***effective date*** of the current valuation.

3.17 Section 6 provides further information which is intended to assist in the interpretation of the results shown. In particular, this section shows the main sensitivities of the ***valuation results*** to the assumptions set by the Lord Chancellor. The most significant of these are the post-retirement mortality rates, the age retirement rates and promotional pay increases.

3.18 Section 7 comments on the main risks which could result in some variations in the ***valuation results*** at subsequent valuations.

[11] 31 March 2019

4 Valuation results

This section provides the valuation results required by the Directions.

4.1 Direction 22 requires certain numerical ***valuation results*** to be reported. This section provides the information required by the Directions.

Valuation balance sheet at 31 March 2012

4.2 The assets and past service liabilities of the aggregate scheme[12] as at the ***effective date*** calculated in accordance with the Directions, and otherwise as specified in this report, are set out in Table 4.1. The liabilities valued include all benefits currently or prospectively payable under the aggregate scheme to pensioners and deferred pensioners as at 31 March 2012 and to active members as at 31 March 2012 in respect of service completed to the ***effective date***. In the case of active members, liabilities arising from future pay inflation to the assumed future date of cessation of pensionable service are included in the liability shown. Corresponding figures at the previous valuation date are shown for comparison purposes.

Table 4.1: Valuation balance sheet

	£ million 31 March 2012	***Direction***	**£ million** 31 March 2009
Aggregate scheme assets	1,954	*25*	1,634[13]
Aggregate scheme liabilities[14] in respect of:			
Active members	1,114		1,047[15]
Deferred pensioners	5		2
Pensioners	1,019		734
Total aggregate scheme liabilities	2,138	*24*	1,783
Surplus (Shortfall) as at valuation date	(184)		(149)

[12] The results shown in this report relate to 'the aggregate scheme' that is the combination of the existing JPS and 2015 Scheme. All liabilities in respect of service to the ***effective date*** relate to the existing JPS.
[13] Balance in SCAPE fund as at 31 March 2009.
[14] Includes liabilities relating to past added years and other options paid for by member contributions
[15] Calculated as the total liability for service before and after the valuation date (including after re-entry following a break in service) less the value of future contributions in respect of the members in the group. The 2009 valuation report showed total liabilities in full with future contributions included as assets of the scheme.

Contribution rates

4.3 Whilst the ***effective date*** of the actuarial valuation is 31 March 2012, the ***employer contribution rate*** determined is that payable in respect of the period 1 April 2015 to 31 March 2019 (the ***implementation period***). The ***employer contribution rate*** required over the ***implementation period*** is determined from the following components

> The contribution rate, payable from 1 April 2015 for a period of 15 years, required to meet the shortfall between assets and liabilities as shown in Table 4.1

> Plus the contribution rate, payable from 1 April 2015 for a period of 15 years, required to meet any shortfall in the expected cost of benefits accruing between the ***effective date*** and 31 March 2015 and the actual contributions paid by employers and members over the same period

> Plus the contribution rate, payable from 1 April 2015, required to cover the expected cost of benefits accruing by members over the ***implementation period***

> Less normal[16] member contributions expected to be payable during the ***implementation period***.

4.4 The relevant ***valuation results***, expressed as a percentage of pensionable payroll, are summarised in Table 4.2.

4.5 This contribution rate is expressed as a percentage of total pensionable pay, and therefore should be paid in respect of all members, including protected members who have reached the service cap in the 1981 and 1993 schemes and who are not accruing any further pension or paying employee contributions themselves.

[16] Excluding additional voluntary contributions (past added years, money purchase AVCs) and contributions for any other options exercised

Table 4.2: Contribution rates

	%	%		*Direction*
Contribution rate required to be paid for 15 years from 1 April 2015 to correct shortfall at 31 March 2012		5.6	A	*27(1)(a)*
Contribution rate required to cover cost of benefits accruing between 1 April 2012 and 31 March 2015[17]	42.5			*27(1)(b)*
Less normal member contribution rate expected between 1 April 2012 and 31 March 2015	3.8			*28(a)*
Less employer contribution rate expected between 1 April 2012 and 31 March 2015	32.0			*28(b)*
Net contribution shortfall between 1 April 2012 and 31 March 2015	6.7			
Contribution rate required to be paid for 15 years from 1 April 2015 to correct underpayment of contributions between 1 April 2012 and 31 March 2015		1.6	B	*27(1)(c)*
Contribution rate required to cover cost of benefits accruing over implementation period	36.8		C	*27(1)(d)*
Less normal member contribution rate expected over implementation period	5.8		D	*28(c)*
Employer contribution rate required for cost of accrual of benefits over implementation period		31.0	C-D	
Employer contribution rate required over implementation period (A + B + C) - D		38.2		*29*

[17] Cost of accrual excludes past added years, additional pension and other options paid for by member contributions.

Employer cost cap

4.6 The ***proposed employer cost cap*** is determined from the following components.

> The contribution rate, payable from 1 April 2015, required to cover the expected cost of benefits accruing by members over the ***implementation period*** (determined using data, methodology and assumptions adjusted in accordance with Direction 53(3) to (6))

> Less normal member contributions expected to be payable over the ***implementation period***.

4.7 The calculated employer cost cap assumes that all members pay contributions at the new scheme rate i.e. protected members as well as everyone accruing new scheme benefits

4.8 The relevant valuation results, expressed as a percentage of pensionable payroll, are summarised in Table 4.3.

Table 4.3: Employer cost cap

	%		***Direction***
Contribution rate required to cover expected cost of benefits accruing over implementation period, assuming all members are accruing benefits in the 2015 scheme	33.2	A	
Less normal member contribution rate expected over implementation period	7.5	B	
Proposed employer cost cap (A - B)	25.7		*53*

4.9 The ***valuation results*** have been determined in accordance with the requirements as to data, assumptions and methodology as specified in the Directions.

5 Reconciliation of result with previous valuation results

This section looks at how the valuation results have changed since the previous valuation as at 31 March 2009.

5.1 The Directions have established a fund of ***notional assets*** as at 31 March 2005. This has been set at a level so that scheme ***notional assets*** were equal to the liabilities calculated in the valuation carried out as at that date. The ***notional assets*** would have been equal to £1,634m as at 31 March 2009, the date of the previous valuation of the JPS. A change in financial and demographic assumptions between 2005 and 2009 would have led to a shortfall of approximately £149m as at 31 March 2009 if the ***notional assets*** had been reported on at that time.

5.2 The framework for the valuation at 31 March 2009 was different to that under which the current valuation has been carried out. This has resulted in some considerable movements in the calculation of the liabilities. Table 5.1 shows how the valuation balance sheet has changed since 31 March 2009. Some figures have been calculated in an approximate manner but are sufficient to show the general size of the impact on the balance sheet. Table 5.2 provides further information on the items identified. Impacts are considered in the order listed. Using a different order could change the intermediate figures significantly, though there is no impact on the final shortfall.

Table 5.1: Valuation balance sheet - Comparison with previous valuation

	£ million	Note
Surplus (shortfall) at 31 March 2009	**(149)**	
Change in actuarial method	0	1.
Adjusted surplus (shortfall) at 31 March 2009	**(149)**	
Interest on surplus (shortfall)	(16)	
Shortfall in return on notional assets	(9)	2.
Shortfall of contributions paid against cost of benefits accruing 2009 to 2012	(17)	3.
Experience effects		
Pay increases lower than expected	132	4.
Members retiring later than expected (members in the 1981 Scheme retired 1 year later than expected, on average)	2	
Negative inflation in 2009 (pensions held level in 2010)	(11)	
Data cleansing	(24)	5.
Change in long-term financial assumptions	(218)	6.
Impact of short-term variation of assumptions	133	7.
Impact of change in demographic assumptions	(35)	8.
Unattributed	28	9.
Surplus (shortfall) at 31 March 2012	**(184)**	

Table 5.2: Explanation of analysis

Note	Explanation
1.	The Directions require the use of the Projected Unit Methodology for the current valuation. This method was used at the previous valuation and so there is no change in methodology and no surplus or deficit arises.
2.	At the previous valuation the discount rate used was 3.5% a year above pension increases. This would have been the rate of return on the ***notional assets*** if a fund had been established at that date. This rate applied until 31 March 2011 but was reduced to 3% above pension increases after that date, see Direction 25 (4). The impact of this change means the ***notional assets*** are lower than would have been otherwise.
3.	In 2009 the cost of accrual to the employer was calculated to be 34.25% of pensionable pay (including a provision for expenses of 0.25%) However, this contribution rate was not adopted, and instead the previous contribution rate of 32.15% of pensionable payroll was retained. This resulted in a deficit emerging from actual contributions into the scheme being less than the cost of accrual.
4.	Pay increases over the period between the previous and current valuations have been lower than anticipated. This is largely as a result of the pay restraint policy applied to members of the judiciary during the period.
5.	The scheme administrator has improved the data held in respect of some members since the previous valuation. This resulted in a small element of deficit arising.
6.	The financial assumptions are set by HMT. Appendix E summarises the financial assumptions set for the current and previous valuations. The most financially significant change in the long term financial assumptions is the reduction in the rate of discount net of pension increases from 3.5% a year to 3.0% a year. This includes the impact of changing from RPI to CPI revaluation of pensions in payment and deferment, which in isolation would have reduced liabilities by about 10%[18].
7.	The Directions for the current valuation specify some variation in financial assumptions for the period between the ***effective date*** and the end of the ***implementation period***. The short-term assumptions specified result in lower assessed liabilities. No short-term variations were assumed for the previous valuation.
8.	The impact of the change in demographic assumptions is the net result of a number of changes but is dominated by an increase in life expectancy.

[18] In line with 2010/11 Annual Accounts which assumed an annual difference between CPI and RPI of 0.75% per annum

Note	Explanation
9.	There was insufficient data to analyse the impact of pensioner mortality being lighter or heavier than expected. Part of this unattributed amount is expected to be due to this difference.

5.3 Table 5.3 illustrates how the employer contribution rate has changed since the previous valuation. Again, some figures have been calculated in an approximate manner but are sufficient to show the general size of the impact on the contribution rate. Impacts are considered in the order listed. Using a different order could change the intermediate figures significantly, though there is no impact on the final contribution rate.

Table 5.3: Employer contribution rate - Comparison with previous valuation

	% pay
Employer contribution rate determined at 31 March 2009*	**34.0**
Change in financial assumptions	7.5
Change in demographic assumptions	0.5
Introduction of adjustment for past service effects[19]	7.2
Increase in member contributions	(3.8)
Introduction of 2015 Scheme	(9.5)
Change in membership profile	2.8
Unattributed	(0.5)
Employer contribution rate determined at 31 March 2012	**38.2**

* excluding the allowance for administrative expenses of 0.25% of pensionable pay.

[19] Including contribution shortfall between ***effective date*** and ***implementation date***

6 Sensitivity of valuation results to assumptions

This section illustrates how the valuation results would change if different assumptions were used.

6.1 This section illustrates the main sensitivities of the ***valuation results*** to the assumptions determined by the Lord Chancellor[20]. Sensitivities are not shown for assumptions specified in the Directions since these are fixed for the purpose of this valuation.

6.2 Table 6.1 shows the sensitivities relative to the past service liabilities, the cost of future accrual, the ***employer contribution rate*** and the ***proposed employer cost cap***. The sensitivities shown are intended to illustrate a range of reasonable outcomes which might have been determined at this valuation. They are not intended to show the possible range of variation in assumptions which might be considered at future valuations and in light of future experience. Section 7 and Appendix G comment on the main risks which could result in some variations in the ***valuation results*** at subsequent valuations.

6.3 The sensitivities shown are those relevant for JPS and numbered as per direction 19(e).

Table 6.1: Sensitivity of valuation results to Lord Chancellor set assumptions

	Addition to past service liabilities	Addition to contribution rate for future accrual	Combined addition to employer contribution rate[21]	Addition to proposed employer cost cap
(i) **New entrant profile***: new joiners assumed 2 years older on average	No impact	0.5%	0.5%	0.5%
(ii) **Mortality rates***: pensioners subject to mortality rates 5% heavier than assumed[22]	(30m)	(0.4%)	(1.3%)	(0.4%)
(iii) **Age retirement rates***: 1993 Scheme active members retire 1 year later than currently assumed	(30m)	(0.6%)	(1.5%)	No impact

[20] As specified in direction 19(e)
[21] Combined effect of additions for past service, underpayment of contributions over 2012-15 (not shown separately) and future accrual
[22] Broadly speaking this is equivalent to assuming members spend 0.5 years less in retirement

	Addition to past service liabilities	Addition to contribution rate for future accrual	Combined addition to employer contribution rate[21]	Addition to proposed employer cost cap
(vii) **Members' dependants***				
(a) proportions partnered: 5% more members assumed to have qualifying partners at death	10m	0.2%	0.6%	0.2%
(b) age difference between member and partner: dependants assumed to be 1 year older than that based on current assumption	(10m)	(0.2%)	(0.7%)	(0.2%)
(x) **Promotional pay increases***: promotional pay increase 0.25% per annum higher on average than assumed	20m	0.4%	1.2%	No impact

* Opposite changes in the assumptions will produce approximately equal and opposite changes in the valuation results.

6.4 In each variant of Table 6.1 the sensitivity shown is in relation only to the change in assumption described. The impact of a combination of assumption changes will not necessarily equate to the sum of the relevant rows above.

7 Uncertainties around possible outcomes of the next valuation

This section considers some of the risks relating to the outcomes of the next valuation.

7.1 The results of this valuation are set out in Section 4. Section 6 outlines the sensitivity of the results to those assumptions set by the Lord Chancellor. The sensitivities shown in that section are intended to illustrate a range of reasonable outcomes which might have been determined at this valuation had different assumptions been used. The range of reasonable outcomes at this valuation is different to, and not necessarily related to, the possible range of outcomes at future valuations.

7.2 The results of the next valuation (both the ***employer contribution rate*** and the ***cost cap cost of the scheme***[23]) will differ from the results shown in this report for many reasons. Table 7.1 shows some of these reasons. These differences can be split into three categories:

> those that are expected

> those that are likely to occur due to short-term variations between experience and assumptions

> those that are possible but less likely and result from more significant experience variations leading to changes in assumptions or from data errors

7.3 The results of future valuations might affect the level of contributions payable by both employers and members and/or the amount of benefits payable to members for future service. Further information on the cost cap mechanism and how this may affect member benefits and/or contributions after future valuations is provided in Appendix G.

7.4 More explanation relating to the items in the table is given in the remainder of this section.

[23] This will be compared to the ***employer cost cap*** at the next valuation. See Appendix G for further details.

Table 7.1: Items that may affect the next valuation[24, 25]

Item		Employer contribution rate[26]	Cost cap cost of the scheme
Expected:	Reduction in proportion of membership accruing benefits in existing schemes	✓	o
	Admission of fee-paid judiciary	✓✓	✓
	Partial deficit repayment	✓	N/A
	Short-term mortality improvements & increases in members' average SPA	o	o
	Run-off of short-term financials up to the next valuation date (Final Salary schemes only)	✓	N/A
Likely:	Short-term experience effects:		
	- demographic	✓	✓
	- financial	✓	✓
	Assumption changes:		
	- short-term financials after the next valuation date	✓✓	✓✓
	- mortality improvements	✓✓	✓✓
Possible:	Errors found in data sets from previous valuations	✓✓	✓✓
	Unanticipated membership changes	✓✓	✓✓
	Assumption changes:		
	- demographics set by the Lord Chancellor	✓✓	✓

Key[27, 28]:N/A = not applicable,

o = impact is likely to be less than 0.5% of pay,

✓ = impact may well be more than 0.5% of pay but, although possible, is quite unlikely to be more than 2.0% of pay,

✓✓ = impact may well be more than 2% of pay

[24] All cost pressures are assumed to feed through to the ***employer contribution rate*** and the ***cost cap cost of the scheme*** in line with the Directions; more detail on how the directions treat cost pressures is set out in paragraphs 2.31 to 2.35 of *Public service pensions: actuarial valuations and the employer cost cap mechanism* published by HMT in March 2014.

[25] We have ignored items such as changes to the Directions (apart from those described as "likely" in paragraph 2.39 of *Public service pensions: actuarial valuations and the employer cost cap mechanism*), benefit changes or changes to relevant law (including European law), because it is impossible for us to form any judgement on the likelihood or quantum of such changes.

[26] Each item is considered separately; a combination of these items could have a larger impact than is considered likely for any of those items individually.

[27] Showing relative importance of items in the table, in our judgement at the time of signing

[28] Shown in increasing order

7.5 As explained above, some of the factors affecting the results of the next valuation are relatively predictable. For example:

> **Scheme membership:** There will be fewer members of the existing sections of the Scheme as protected members retire and tapered members move across.

> **Fee-paid members of the judiciary:** These members will be admitted to the scheme from 2015 and a new final salary scheme will be set up for fee-paid members entitled to transitional protection. This will impact on the cost of future accrual and making allowance for the accrued past service will give rise to a deficit and higher employer contribution rates. Data used to calculate the provision for fee-paid judiciary in the JPS accounts suggests that fee-paid office-holders are younger than salary-paid office-holders which would tend to reduce the cost cap cost of the scheme. However, fee-paid judiciary are expected to pay a lower contribution as a percentage of pay than salary-paid which would tend to offset this to an extent. We have assumed that the opening cost cap fund will have full allowance for accrued rights of the fee-paid judiciary in active service so there will be no initial impact on the cost cap cost of the scheme from pre-2015 fee-paid service.

> **Deficit:** Part of the existing deficit will be paid off through the deficit contributions payable before the next ***implementation date***.

> **Mortality improvements:** Life expectancies are expected to continue to increase though the impact of this will be offset to an extent by increases in the average SPA of active members.

> **Short term financials:** The short term financial assumptions up to the effective date of the next valuation will determine some of the experience effects at the next valuation but otherwise will not be relevant to the determination of the valuation results of the next valuation.

7.6 It would be possible to calculate the expected contribution rate at the next valuation allowing for these more predictable effects. However, any estimate would still be subject to considerable uncertainty, not least because although the admission of the fee-paid judiciary is expected, the financial impact is still very uncertain due to the ongoing litigation. The long period over which the membership would need to be projected would add further uncertainty.

7.7 Other impacts on the results of the next valuation are less predictable. These include:

> **Data:** If the data used for this valuation is later shown to be materially incorrect, a gain or loss will emerge when it is corrected. For example, if the next valuation reveals that the accrued pensions at this valuation are found to be 5% underreported, all other things being equal, the employer contribution rate could increase by around 3% of pay.

> **Scheme membership:** The distribution of future scheme membership may differ from that projected at this valuation. For example, if the scheme membership unexpectedly grows[29] by 10% by 2016 then this might reduce the ***employer contribution rate*** by about 1% and the ***cost cap cost of the scheme*** by about ½%.

> **Short term experience effects:** If experience is not in line with the assumptions made, a gain or loss will emerge over an inter-valuation period. Although the scale of the experience effects seen over the current inter-valuation period is not necessarily indicative of the scale of the effects for future periods, it is reasonable to infer that the impact of demographic experience effects is likely to be considerably lower than the potential impact of financial experience effects. For example, at this valuation none of the items of demographic experience that could be analysed resulted in an impact on the ***employer contribution rate*** of significantly more than 0.1% of pay whereas the pay experience was equivalent to a contribution impact of about 4% of pay for future service. Note, however paragraph 5.2.9; there was insufficient data to analyse the impact of pensioner mortality.

> **Longer term experience effects:** Assumption changes at future valuations in light of scheme experience may have more substantial effects on the results than actual experience effects. The greater sensitivity to assumption changes is because the assumptions typically apply to longer periods than the experience effects are measured over.

> **Other assumption changes:** Assumptions may change for reasons other than scheme experience, and paragraph 2.39 of *Public service pensions: actuarial valuations and the employer cost cap mechanism* flags that some of the assumptions set in the Directions (including short-term financial assumptions) are likely to change. The ***employer contribution rate*** is particularly sensitive to the short-term financial assumptions (the use of short term rather than long term assumptions up to March 2019 for this valuation reduced the ***employer contribution rate*** by about 4½% of pay for future service). ***Valuation results*** are also sensitive to other assumptions set in the Directions, such as the discount rate, mortality improvements and commutation take up. It is expected that any changes to assumptions in the Directions will impact on the ***employer contribution rate***. The impact of changes in assumptions on the cost cap mechanism is described in paragraphs 2.31 to 2.35 of *Public service pensions: actuarial valuations and the employer cost cap mechanism*.

[29] Growth due to a surge of new entrants with characteristics in line with the current valuation assumptions

8 Conclusion

This section summarises the valuation results.

8.1 Based on the detailed analysis as set out in this report, the key results of the valuation are as follows:

> ***Employer contribution rate*** payable for the ***implementation period***: 38.2% of pensionable pay

> ***Employer cost cap***: 25.7% of pensionable pay

> Total Scheme liabilities for service to the valuation date of £2,138m and ***notional assets*** of £1,954m, giving a notional past service deficit of £184m.

8.2 The next valuation of the Scheme is due to be undertaken as at 31 March 2016. This will set the ***employer contribution rate*** payable from 1 April 2019, determine the opening value of the ***cost cap fund*** and provide the cost cap analysis as required by the Directions for future valuations.

George Russell
Deputy Government Actuary
8 October 2014

Ian Boonin
Fellow of the Institute and Faculty of Actuaries
8 October 2014

Appendix A: Summary of membership data and comparison with data at previous valuation

Table A1: Actives

1981 and earlier schemes

	2009					2012				
	Number of members	Total pensionable pay (i) (£m)	Average pensionable pay (£)	Average age (ii) (years)	Average reckonable service (ii) (years)	Number of members	Total pensionable pay (i) (£m)	Average pensionable pay (£)	Average age (ii) (years)	Average reckonable service (ii) (years)
Male	342	42.9	125,528	64	15.73	167	21.7	130,182	66	16.58
Female	34	4.0	117,806	62	16.02	26	3.1	118,814	64	17.38
Total	376	46.9	124,829	64	15.76	193	24.8	128,651	66	16.68

1993 scheme

	2009					2012				
	Number of members	Total pensionable pay (i) (£m)	Average pensionable pay (£)	Average age (ii) (years)	Average reckonable service (ii) (years)	Number of members	Total pensionable pay (i) (£m)	Average pensionable pay (£)	Average age (ii) (years)	Average reckonable service (ii) (years)
Male	1,362	164.0	120,428	58	7.82	1,528	189.0	123,672	60	8.71
Female	397	43.5	109,570	55	6.89	506	58.4	115,477	55	7.18
Total	1,759	207.5	117,977	58	7.61	2,034	247.4	121,633	59	8.35

(i) The pay shown is full-time equivalent (FTE) pay
(ii) Weighted by FTE pay

All members

	2009					2012				
	Number of members	Total pensionable pay (i) (£m)	Average pensionable pay (£)	Average age (ii) (years)	Average reckonable service (ii) (years)	Number of members	Total pensionable pay (i) (£m)	Average pensionable pay (£)	Average age (ii) (years)	Average reckonable service (ii) (years)
Male	1,704	207.0	121,452	60	9.4	1,695	210.7	124,313	60	9.52
Female	431	47.5	110,220	55	7.61	532	61.5	115,640	56	7.69
Total	2,135	254.5	119,184	59	9.04	2,227	272.2	122,241	59	9.11

(i) The pay shown is full-time equivalent (FTE) pay
(ii) Weighted by FTE pay

Table A2: Deferreds

All members

		2009				2012			
		Number of members	Total deferred pension (£000s)	Average pension (£)	Average age (i) (years)	Number of members	Total deferred pension (£000s)	Average pension (£)	Average age (i) (years)
Deferred and Pension Credits	Male	5	100	20,000	62	7	160	22,847	61
	Female	0	0	0	0	15	254	16,927	62
	Total	5	100	20,000	62	22	414	18,811	61
Pension Debits	Total					13	161	12,388	63

(i) Weighted by pension/pension debit/pension credit as applicable

Table A3: Pensioners

Type of benefit		2009 Number	2009 Total pension (£000s)	2009 Average pension (£)	2009 Average age (i) (years)	2012 Number	2012 Total pension (£000s)	2012 Average pension (£)	2012 Average age (i) (years)
Pensioners	Male	967	48,500	50,155	75	1109	60,888	54,903	76
	Female	87	3,400	39,080	70	126	5,042	40,019	72
	Total	1,054	51,900	49,241		1235	65,930	53,385	75
Widow(er)s	Male	8	100	12,500	71	10	178	17,842	75
	Female	466	9,400	20,172	78	477	11,036	23,137	78
	Total	474	9,500	20,042	78	487	11,215	23,028	78
Dependants	Total	16	100	6,250	20	15	137	9,143	21
All	**Total**	1544	61,500	39,832	75	1737	77,282	44,492	76

(i) Weighted by pension

Appendix B: Summary of benefits

B.1 The Directions require the JPS and the new scheme being introduced for the judicial workforce on 1 April 2015 ('the 2015 Scheme') to be taken into account in aggregate for the purposes of the current valuation. The summary of benefits provided is shown separately for the JPS and the 2015 Scheme. The criteria by which Scheme membership will be determined from 1 April 2015 are also shown. A full summary of the Schemes' provisions is set out in the report *Judicial Pension Scheme: Report on membership data as at 31 March 2012* dated 21 August 2014.

JPS (existing sections)

B.2 The main benefit provisions of the Scheme for each category of member are shown in Table B1.

Table B1: Main benefit provisions of JPS

	1981 Scheme	1993 Scheme
Basis of provision	Final salary	Final salary
Contracted out/in prior to 2016+	Contracted out	Contracted out
Normal Pension Age (NPA)	After 15 years service or age 70 (higher judiciary). After 15 years service and age 65 (all other 1981 schemes)	Age 65 or 5 years after joining the scheme, if later.
Pension at retirement	Approximately 50% of final pensionable salary after 15 years service (Consolidated Fund Judiciary) or 20 years service (MoJ Vote Judiciary).	Accrued at the rate of 1/40th of final pensionable salary per year of reckonable service.
Retirement lump sum accrual rate	2 x member's pension.	2.25 x member's pension.
Final Pensionable pay	Annual salary in payment at date of retirement.	The highest salary received in any 12 month period within the last 3 years.
Dependant benefits – death in service	A lump sum benefit of pensionable remuneration at date of death. A spouse's or civil partner's pension of half the member's notional pension based on the member retiring on ill health grounds at the date of death. Children's pension may also be payable.	A lump sum benefit of two times pensionable remuneration at date of death. A spouse's or civil partner's pension of half the member's notional pension based on the member retiring on ill health grounds at the date of death. Children's pension may also be payable.

Dependant benefits - death after retirement	A spouse's or civil partner's pension equal to one half of the member's actual pension.	A spouse's or civil partner's pension equal to one half of the member's actual pension.
Ill health pension	May be awarded at any age subject to medical evidence. Equal to the pension that would have been payable to the member had normal retirement taken place at the date of ill-health retirement.	May be awarded at any age subject to medical evidence. Ill Health pensions are enhanced by one half of the member's potential service to age 65, subject to a maximum of 20 years service.
Pension increases	In accordance with the Pensions (Increase) Acts.	
Benefits on leaving service	Either a refund of contributions, a preserved pension payable from NRA or a transfer payment to another scheme or to an insurance company.	

+future benefits unaffected by contracting-out status

2015 scheme

B.3 The main benefit provisions of the 2015 scheme are shown in Table B2.

Table B2: Main benefit provisions of 2015 scheme

	2015 scheme
Basis of provision	Career average with revaluation of CPI whilst in service
Contracted out/in prior to 2016+	Contracted out
Normal Pension Age (NPA)	Higher of a member's State Pension Age and 65
Pension accrual rate	2.32%
Retirement lump sum accrual rate	Cash by commutation only (£12: £1pa)
Final Pensionable pay	Not applicable
Dependant benefits	37.5% of member pension (pre-commutation)
Ill health pension	Accrued pension plus 50% prospective pension accrued to NPA.
Early Retirement	Benefits reduced for early payment. The reduction is actuarially neutral on a deferred benefit basis.
Pension increases	In payment – increased in line with the PI Act (currently CPI), on excess over GMP In deferment – total pension increased in line with the PI Act (currently CPI)

+benefits unaffected by contracting-out status

Criteria for scheme membership from 1 April 2015

Protected Members

B.4 All active members who, as of 1 April 2012, have 10 years or less to their current Normal Pension Age (i.e. aged 55 or over on 1 April 2012) will see no change in when they can retire, nor any decrease in the amount of pension they receive at their current Normal Pension Age. This protection will be achieved by the member remaining in their current scheme until they retire.

Tapered Members

B.5 Active members who, as of 1 April 2012, are between 10 and 13½ years of their Normal Pension Age (i.e. aged between 51 ½ and 55 on 1 April 2012) will have the option of limited protection (by remaining in their current scheme) with linear tapering so that for every month of age that they are beyond 10 years from their Normal Pension Age, they lose 2 months of protection. At the end of the protected period, they will be transferred into the new pension arrangements. Alternatively, these members can opt to transfer into the 2015 Scheme with effect from 1 April 2015.

Unprotected members

B.6 All other active members will transfer to the new arrangements on 1 April 2015.

Employee contribution rates payable from 2015

B.7 Alongside the implementation of the 2015 scheme, the rates of member contributions for all members of the judiciary are also set to change. The member contributions outlined in the box below will be the rate paid as part of membership of any judicial pension scheme, including the1993 Scheme, from 2015/16.

Annual Rate of Pensionable Earnings	Members of final salary sections	Members of career average section
£47,001 - £150,000	4.41%	7.35%
£150,000 and above	4.83%	8.05%

Appendix C: Notional assets and cashflows

C1 The Directions specify the calculation of the ***notional assets*** as at 31 March 2012. The calculation is set out in Table C1. Income and benefit payments have been derived from the JPS Annual Accounts for each year and the relevant information is summarised in Table C2. The notional return credited each year in line with the return specified in the Directions is also shown. Income and expenditure is assumed to occur mid-year for the purposes of crediting the notional return.

Table C1: Notional assets

	£ million		Direction
Scheme Notional Assets at 31 March 2005	1,170	A	Schedule 2
Change in Scheme Notional Assets since in respect of:			
Income received	587	B	25
Benefits Paid	500	C	25
Notional Investment Returns	697	D	25
Scheme Notional Assets at 31 March 2012 (A + (B – C)) + D	1,954		**25**

Table C2: Cashflows

	05/06 £m	06/07 £m	07/08 £m	08/09 £m	09/10 £m	10/11 £m	11/12 £m
Income	74	76	82	86	89	90	90
Benefit payments	56	60	65	73	76	80	90
Notional investment returns[30]	74	92	104	130	34	113	151
(%)	6.3%	7.2%	7.5%	8.7%	2.1%	6.7%	8.4%

C2 Future cashflows to the Scheme will comprise income and benefit payments. The liabilities set out in this report are based on the overall cashflows expected to arise in all future years based on the assumptions used. Over shorter time periods it is likely that actual cashflows will differ from those taken into account when considering the longer term. Given the sensitivity of cashflow projections to particular time periods they are required for, none are provided in this report. It is recognised cashflow projections based on the valuation data may be required for other purposes.

[30] Calculated in accordance with direction 25(4). In basic terms, the rate of return is the measure of price inflation (which can be negative) compounded with the net discount rate applying at the time.

Appendix D: Events since the 2009 actuarial valuation

Member contributions

D1 From 1 April 2009 up until 31 March 2012, member contributions for the 1993 Scheme were payable at the rate of 1.8% of earnings up to capped pay. For the 1981 Scheme member contributions were levied at a rate of 2.4% of salary for members of the Consolidated Fund Judiciary and 1.8% of salary from members of the MoJ vote Judiciary.

D2 Additional member contributions were introduced after the ***effective date*** as set out in Table D1.

Table D1: Additional member contribution rates 1 April 2012 to 31 March 2015

Member contribution rate (% of total pay)		
2012/13	**2013/14**	**2014/15**
1.28%	2.56%	3.20%

Employer contributions

D3 Between 1 April 2009 and 31 March 2012, employer contributions were payable at the rate of 36.25%. This rate contained an allowance of 0.25% of pensionable pay in respect of administration expenses although in practice actually MoJ retained £400,000 a year from contributions.

Pension increases

D4 The government announced that Consumer Price Index (CPI) rather than the Retail Price Index (RPI) would be used to set pension increases with effect from the April 2011 increase. The financial assumptions were amended accordingly as set out in Appendix E. The actual rate of increase awarded since the 2009 valuation are set out in Table D2. The known rates of increase awarded since the ***effective date*** are also shown. These have been taken into account in the valuation.

Table D2: pension increases since the previous valuation

Year	Pension Increase
April 2009	5.0%
April 2010	0%
April 2011	3.1%
April 2012	5.2%
April 2013	2.2%
April 2014	2.7%

Appendix E: Summary of assumptions

Table E1: Financial assumptions at current and previous valuation

<table>
<tr><th></th><th colspan="4">Current valuation
31 March 2012</th><th>Previous valuation
31 March 2009</th></tr>
<tr><td>Discount rate</td><td colspan="4">3% pa real; 5.06% pa nominal</td><td>3.5% pa real; 6.5% pa nominal</td></tr>
<tr><td>Pension increases</td><td colspan="4">2% pa</td><td>2.9% pa</td></tr>
<tr><td>Long term salary growth</td><td colspan="4">4.75% pa, 2.75% pa in excess of assumed CPI</td><td>4.4% pa, 1.5% pa in excess of assumed RPI</td></tr>
<tr><td rowspan="8">Short term variations in assumptions</td><td>Year</td><td>Gross discount rate</td><td>Pension increases</td><td>Salary growth</td><td rowspan="8">None</td></tr>
<tr><td>2012/13</td><td>5.27%</td><td>2.2%</td><td>1.8%</td></tr>
<tr><td>2013/14</td><td>5.78%</td><td>2.7%</td><td>0.5%</td></tr>
<tr><td>2014/15</td><td>5.27%</td><td>2.2%</td><td>1.5%</td></tr>
<tr><td>2015/16</td><td>5.16%</td><td>2.1%</td><td>2.0%</td></tr>
<tr><td>2016/17</td><td>n/a</td><td>n/a</td><td>2.5%</td></tr>
<tr><td>2017/18</td><td>n/a</td><td>n/a</td><td>3.0%</td></tr>
<tr><td>2018/19</td><td>n/a</td><td>n/a</td><td>3.0%</td></tr>
</table>

Demographic assumptions

E1 Full details of the demographic assumptions are provided in the report *Judicial Pension Scheme: Actuarial valuation as at 31 March 2012: Advice on assumptions* dated 8 October 2014. Sample rates and values are provided below.

E2 Retirements on or after NPA are assumed to occur on a member's birthday. Other decrements are assumed to occur mid-year.

Pensioner mortality

Table E2: Baseline mortality assumptions[31]

Group	Males	Females
Normal-health pensioners	80% of S1NMA	85% of S1NFA
Existing ill-health pensioners	80% of S1NMA	85% of S1NFA
Future ill-health pensioners	N/A	N/A
Dependants	80% of S1NMA	85% of S1NFA

E3 As specified by HMT, future improvements in mortality will be assumed to be in line with those underlying the ONS 2012-based population projections.

E4 Resultant expectations of life are shown in Table E3 together with comparative figures for the previous valuation.

Table E3: Future life expectancy[32] (normal health retirement)

	2009 valuation	2012 valuation
Current pensioners		
Male aged 65	23.6	25.1
Female aged 65	25.1	27.1
Male aged 76	14.5	14.9
Female aged 76	15.7	16.6
Future pensioners – current age 45		
Male life expectancy from age 65	25.4	27.4
Female life expectancy from age 65	27.0	29.3
Male life expectancy from age 67	23.7	25.4
Female life expectancy from age 67	25.2	27.3
Future pensioners – current age 60		
Male life expectancy from age 65	24.1	25.7
Female life expectancy from age 65	25.7	27.7
Male life expectancy from age 67	22.4	23.8
Female life expectancy from age 67	24.0	25.7

[31] Expressed by reference to the S1 series of standard tables published by the CMI, adjusted to 2012 to take account of improvements in population mortality derived using rates from the UK Interim Life Tables.
[32] Cohort life expectancy, based on age at relevant valuation date with future improvements in line with assumptions used in the relevant valuation.

Age retirement from service

Table E4: Age retirement rates for protected members remaining in the existing scheme after 31 March 2015

Age	1981 Scheme		1993 Scheme	
	Males	Females	Males	Females
65	0.00	0.00	0.00	0.00
66	0.00	0.00	0.00	0.00
67	0.00	0.00	1.00	1.00
68	0.00	0.00	1.00	1.00
69	0.00	0.00	1.00	1.00
70	1.00	1.00	1.00	1.00

Table E5: Age retirement rates for tapered and unprotected members remaining in the existing scheme after 31 March 2015

Age	SPA 65		SPA 66		SPA 67		SPA 68	
	Males	Females	Males	Females	Males	Females	Males	Females
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
68	1.00	1.00	1.00	1.00	0.50	0.50	0.00	0.00
69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table E6: Age retirement rates for members with service in both the existing and 2015 schemes

	1981		1993 Scheme			
Age	SPA 66		SPA 66		SPA 67	
	Males	Females	Males	Females	Males	Females
65	0.00	0.00	0.00	0.00	0.00	0.00
66	0.00	0.00	0.00	0.00	0.00	0.00
67	0.00	0.00	0.00	0.00	0.00	0.00
68	0.00	0.00	1.00	1.00	0.50	0.50
69	0.00	0.00	1.00	1.00	1.00	1.00
70	1.00	1.00	1.00	1.00	1.00	1.00

Commutation of pension for cash at retirement

Table E7: Proportion of pension assumed commuted for cash

	1981 Scheme	1993 Scheme	2015 scheme*
Males	N/A	N/A	15%
Females	N/A	N/A	15%

* As specified in direction 18(e)

Death before retirement

Table E8: Death before retirement rates for all members

Age	Males	Females
20	0.0002	0.0002
25	0.0002	0.0002
30	0.0002	0.0002
35	0.0004	0.0002
40	0.0005	0.0003
45	0.0007	0.0004
50	0.0010	0.0007
55	0.0016	0.0010
60	0.0025	0.0015
65	0.0040	0.0022

Family statistics

Table E9: Proportion married or partnered at death at retirement for future pensioners

	1981 Scheme Proportion married or partnered	1993 Scheme Proportion married or partnered
Males	90%	90%
Females	80%	80%

Table E14: Proportion married or partnered for current pensioners (at the effective date)

Age	1981 Scheme Proportion married or partnered		1993 Scheme Proportion married or partnered	
	Males	**Females**	**Males**	**Females**
50	90%	80%	90%	80%
60	90%	80%	90%	80%
70	89%	69%	89%	69%
80	74%	34%	74%	34%
90	42%	10%	42%	10%

E5 Male members are assumed to be three years older than their partners and female members are assumed to be two years younger than their partners.

E6 Promotional Salary scale is assumed to be 0.25% pa for all ages.

Appendix F: Summary of methodology and calculations

Methodology

F1 The Directions specify the use of the projected unit methodology and that benefits should be attributed to periods of service in accordance with the requirements of International Accounting Standard 19: Employee Benefits.

F2 Since the expected cost of benefits provided to members remaining in the existing scheme differs from the expected cost of providing those members with benefits in the 2015 scheme, and the expected cost of providing benefits varies for members with differing benefit provisions within the existing scheme (notably for members with differing normal pension ages), projecting the membership gives a materially different estimate of the valuation result.

F3 We have projected the current membership to run off in accordance with the valuation assumptions from the ***effective date*** to the end of the implementation period. We have allowed for new entrants into the scheme at a rate that keeps the number of members and total salaries the same. The profile of new entrants is assumed to be the same as that of recent entrants into the Scheme. Full details of the membership projection is provided in the report *Judicial Pension Scheme: Methodology summary* dated 8 October 2014

Calculations

F4 The following provides a brief explanation of the actuarial calculations used to derive the ***valuation results***.

Scheme benefits

F5 First, an estimate is made of the amount of benefit to be received by each scheme member (and their dependants, where applicable) over each future year of the Scheme, from the ***effective date*** onwards. In order to do that, it is necessary to make some assumptions about the future service and salaries of the scheme members, and the length of time over which they will receive benefits. (More information about the assumptions is set out in Appendix E.)

F6 Having estimated the benefits as a stream of projected cashflows from the ***effective date*** onwards, the second step is to calculate the capital sum which would need to be held at the ***effective date*** in order to pay all of the benefits. This requires an assumption to be made as to rate of return which would be earned by the capital sum if it were invested. In the case of the Scheme, there is no actual sum of money, but the valuation approach is predicated on the premise that there is a notional fund with a notional investment return.

F7 This capital sum is often referred to as the 'present value' of the benefits and is calculated by 'discounting' the future cashflows back to the ***effective date*** using the valuation discount rate (see Appendix E). The present value can alternatively be considered as the amount of money which would need to be invested at an assumed interest rate (equal to the discount rate) in order to pay all the benefits. The result of the calculation is, by its nature, a planning or budgeting estimate, not a 'valuation' as such.

Calculations

F8 For the valuation, it is necessary to separate the capital sum into two parts: (i) the sum needed to pay out benefits which relate to service *prior to* the ***effective date*** ('past service'), and (ii) the sum needed to pay out those benefits which relate to service *after* the ***effective date*** ('future service').

Past service position

F9 In relation to the past service element, we compare the capital sum (or present value) relating to past service with the balance in the notional fund at the ***effective date***. If all the assumptions made during previous reviews had been borne out exactly, and assuming no errors in previous data sets are revealed, the notional fund would exactly equal the capital sum now needed to pay for those past service benefits. But, if actual events have differed from the assumptions made, then the notional fund will exceed, or fall short of, the capital sum now estimated to be needed.

F10 To the extent that the notional fund is *less* than the capital sum needed to pay out all the benefits relating to past service, the fund is said to be in *deficit*. This deficit needs to be met by additional contributions. If the notional fund *exceeds* the capital sum required for past service benefits, it is said to be in *surplus* and there would be a reduction in the contributions that would otherwise be paid for future service.

Future contributions

F11 To arrive at the level of contributions required to meet benefits estimated to arise out of future service, we calculate the percentage of total pensionable pay which, if paid from the ***effective date*** onwards, would be sufficient to make up the capital sum needed to pay out the benefits. (Or, using the terminology from above, we calculate the contribution rate which has the same 'present value' as the benefit stream which the contributions will pay for.) In making this calculation, we adopt the same assumptions that we mentioned above regarding the future service and salaries of the scheme members and the rate of return which would be earned by the capital sum if it were invested.

Appendix G: The cost cap mechanism

G1 This report recommends an ***employer contribution rate*** and proposes an ***employer cost cap*** (the ***valuation results***) based on a number of assumptions about the future. Section 7 outlines the main reasons why future ***valuation results*** may differ from the results shown in this report. This section gives further information on the cost cap mechanism and the factors which may influence the level of contributions payable by, or amount of benefits payable to, members at future valuations.

Allocation of cost savings/increases at future valuations

G2 The cost cap mechanism specifies that:

a. if the ***cost cap cost of the scheme*** determined at a future valuation differs from the ***employer cost cap*** by more than 2% of pay, then member contributions or benefits will be adjusted.

b. if the ***cost cap cost of the scheme*** is within 2% of the ***employer cost cap***, then member contributions and benefits will not be adjusted.

Liabilities considered for future valuation results

G3 The ***employer contribution rate*** takes into account the whole of the aggregate scheme's liabilities ie those attributable to all service in both the existing and 2015 schemes.

G4 By contrast, only part of the aggregate scheme's liabilities are considered for the calculation of the ***cost cap cost of the scheme***. In particular the ***cost cap fund*** is intended to exclude costs relating to deferred and pensioner members of the existing schemes. More detail is set out in paragraphs 2.24 to 2.27 of *Public service pensions: actuarial valuations and the employer cost cap mechanism*.

G5 The prior value of the ***cost cap fund*** will be first determined at the actuarial valuation due to be carried out as at 31 March 2016. This will be based on the scheme's liabilities only for members who are active (that is, still in employment) as at 31 March 2015. As members with existing scheme benefits progressively leave active service, their liability will move outside the ***cost cap fund***. Of the liabilities expected to establish the cost cap fund as at 31 March 2015 a significant proportion of the liabilities will relate to members who are in protection (including tapered protection) and who are expected to retire in the relatively short term. Over this period, the cost cap mechanism may therefore be exposed to significant variations in pay experience and retirement patterns.

G6 Over the longer term, the cost cap mechanism will become relatively more sensitive to the other demographic assumptions, particularly as they impact on the age profile of the active membership. The ***cost cap cost of the scheme*** is also sensitive to changes in longevity expectations. Initially, this only relates to active members but once members with 2015 scheme service have retired, then any changes in expectations of their longevity will also have an impact on the ***cost cap cost of the scheme***. Further, although the retirement age of active members is intended to vary in line with longevity expectations, the timing of any legislative changes to retirement age is unlikely to be synchronised with the timing of future valuation cycles.

G7 More information about the employer cost cap mechanism can be found in of *Public service pensions: actuarial valuations and the employer cost cap mechanism* published by HMT in March 2014.

Appendix H: Location of material required by Directions

Direction	Description	Location
21(a)(i), (ii)	Summary of membership data and checks carried out	Appendix A *Judicial Pension Scheme: Report on membership data as at 31 March 2012 dated 8 October 2014*
21(a)(iii)	Adjustments made to data Projections made	*Judicial Pension Scheme: Report on membership data as at 31 March 2012 dated 8 October 2014* *Judicial Pension Scheme: Actuarial Report on Methodology dated 8 October 2014*
21(b)	Average age of active members	Appendix A1
21(c)	Statement of compliance with directions	Paragraph 2.3
21(d)	Summary of regulations, directions and professional standards	Paragraphs 2.3-2.5, GAD website
21(e)	Summary of main provisions of the schemes	Appendix B *Judicial Pension Scheme: Report on membership data as at 31 March 2012 dated 8 October 2014*
21(f)	Analysis of demographic experience	*Judicial Pension Scheme: Actuarial valuation as at 31 March 2012: Advice on assumptions dated 8 October 2014*
21(g)(i), (ii)	Statement of assumptions, including rationale	*Judicial Pension Scheme: Actuarial valuation as at 31 March 2012: Advice on assumptions dated 8 October 2014* See also Appendix E of this report
21(g)(iii)	Illustration of sensitivity to assumptions	Section 6
21(h)	Other liabilities valued	None
22(a), (b)	Valuation balance sheet	Section 4, Table 4.1
22(c)	Notional asset cashflows	Appendix C, Table C2
22(d), (e), (f)	Contribution rates	Section 4, Table 4.2
53	***Proposed employer cost cap***	Section 4, Table 4.3

Appendix I: Limitations

I1 This report is intended solely for the use of the Ministry of Justice for the purposes of determining the ***employer contribution rate*** payable for the period 1 April 2015 to 31 March 2019 and the initial ***employer cost cap***, both of which are to be set in regulations. The information and advice in this report should not be relied upon, or assumed to be appropriate, for any other purpose or by any other person. GAD does not accept any liability to third parties, whether or not GAD has agreed to the disclosure of its advice to the third party.

I2 We are content for the Lord Chancellor to release this report to third parties, provided that:

- it is released in full
- the advice is not quoted selectively or partially
- GAD is identified as the source of the report, and
- GAD is notified of such release.

I3 Third parties whose interests may differ from those of the Lord Chancellor should be encouraged to seek their own actuarial advice where appropriate. GAD has no liability to any person or third party for any act or omission taken, either in whole or in part, on the basis of this report.

I4 GAD is not responsible for any decision taken by the Ministry of Justice, except to the extent that the decision has been made in accordance with specific advice provided by GAD. Advice provided by GAD must be taken in context and is intended to be read and used as a whole, not in parts. GAD does not accept responsibility for advice that is altered or used selectively. No significant action should be taken based on oral advice alone. Clarification should be sought if there is any doubt about the intention or scope of advice provided by GAD.

I5 GAD relies on the accuracy of data and information provided by the Ministry of Justice. GAD does not accept responsibility for advice based on wrong or incomplete data or information provided by the Ministry of Justice.