

## **Appendix 35 B**

### **Size of the inherited estates**

A report for the policyholder advocate in connection  
with the reattribution of the inherited estates  
of the CGNU Life and CULAC with-profits funds

**June 2009**

**Report by: KPMG LLP**

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## **1.00 Introduction and Summary**

### **1.01 Context**

This appendix has been prepared by KPMG LLP for the policyholder advocate, and is a response to Aviva's paper on the same aspect of the proposals. Whilst we have done our best within this appendix to explain technical terms and concepts, it remains the case that this is a technical report intended for readers who have some familiarity with the concepts involved.

Certain information in this appendix has been redacted (ie blanked out). This has been a requirement of Aviva, in order to prevent the public disclosure of information which Aviva believes is commercially sensitive. In some cases figures or words which are not deemed by Aviva to be commercially sensitive have been redacted in order to prevent the reader from deriving the nature of the information which Aviva deems to be commercially sensitive. The policyholder advocate does not agree that this information is commercially sensitive and believes that the redactions are inappropriate and unnecessary.

### **1.02 Background**

One of the first steps in agreeing a fair reattribution settlement is to agree on the size of the CGNU Life and CULAC inherited estates. This paper sets out KPMG's view of the size of the CGNU Life and CULAC inherited estates. The policyholder advocate has used these figures in all areas of her negotiations, including the determination of how the offer compares to potential benefits forgone.

The inherited estate is generally defined as the excess of the assets in the with-profits fund over its liabilities. Aviva is proposing that for the purposes of the reattribution the inherited estates of the two funds be quantified using the realistic balance sheets (RBSs) prepared for the Financial Services Authority (FSA) as part of the company's annual solvency return. We consider this to be an appropriate starting point for determining the size of the inherited estate for the following reasons:

- The bases and methodologies used to value both the assets and the liabilities are well understood in the industry.

- The year end balance sheet is subject to independent audit and therefore the methodology and models used will have been subject to external scrutiny.

However we are hesitant about relying entirely on this estimate of the inherited estate. The published RBS of a life company may, notwithstanding the term “realistic”, still contain some margins for prudence. We would not challenge such margins for solvency monitoring purposes but to not take the margins out for determining the value of the inherited estate for a reattribution would be detrimental to policyholders. Such margins can arise due to:

- it being an accepted approach within the industry, eg the derivation of risk free rates of interest for this purpose;
- companies wanting to err on the cautious side where fine judgements need to be made given that the results are published;
- some companies including contingency type liabilities or extra prudence margins for certain possible future events.

Given that the reattribution is effectively a transaction between shareholders and policyholders, it is appropriate for our purpose to adjust out any margins (of any of the three categories above) which are significant and which clearly represent additional prudence over and above a best estimate.

The purpose of this report is to consider the above aspects and suggest suitable adjustments.

We note that the 31 December 2007 and 31 December 2008 figures in this report were subject to independent external audit. The 30 June 2008 figures, which have been used for comparative purposes only, have not been subject to such audit and include some degree of estimation.

The RBS was introduced by the FSA in 2004 as part of its programme to overhaul the regulatory reporting environment facing with-profits funds. It is certainly more realistic than the regime it replaced as it takes into account a wide array of firm-specific features such as bonus philosophy and investment strategy, as well as explicitly allowing for the time value of the cost of guarantees and for terminal bonus. However, since it is difficult to assess exactly

what may happen in the future, the methods and assumptions would typically still include some prudential margins, albeit to a much lesser degree than before.

As noted above, our aim in producing this report was to provide a review of the CGNU life and CULAC RBSs in order to identify areas of prudence. These margins, while appropriate for FSA solvency purposes, may not be appropriate for the purposes of calculating the value of potential benefits from special distributions forgone in the negotiations of the reattribution settlement because they favour shareholders by making the value of these potential benefits lower.

In this report we have tried to highlight those areas in the Aviva valuation where conservatism in the figures reported to the FSA may understate what we consider a fair or reasonable valuation of the inherited estate. Such conservatism can arise from the methods or approaches laid down by the FSA, or from the implementation of these methods by the industry generally or by any particular company. Aviva is by no means unusual in having some element of conservatism in its implementation. It is stressed here that the adjustments proposed in this report are put forward for the purposes of the reattribution transaction. None of the adjustments are intended to question the appropriateness of Aviva's published RBSs which are subject to independent external audit.

### 1.03 Summary of the inherited estates

The table below summarise the financial position of the two funds at the end of 2007 and 2008, and at the half year 2008:

*Table 1.1: Summary of the inherited estates at 31 December 2007, 30 June 2008 and 31 December 2008 (in each case determined after allowing for the pre reattribution distribution (PRD) announced in February 2008)*

(£'millions)	December 31 2007			June 30 2008			December 31 2008		
	CGNU	CULAC	Total	CGNU	CULAC	Total	CGNU	CULAC	Total
Regulatory value of the admissible assets of the fund	16,515	16,642	33,157	15,422	15,546	30,968	14,798	15,175	29,973
- non-profit mathematical reserves	-993	-1,917	-2,910	-1,015	-1,946	-2,961	-965	-2,002	-2,968
+ present value of future profits (PVFP) on non-profit business	438	386	824	447	468	915	396	436	832
<i>Total realistic assets</i>	<i>15,960</i>	<i>15,111</i>	<i>31,071</i>	<i>14,854</i>	<i>14,069</i>	<i>28,923</i>	<i>14,229</i>	<i>13,609</i>	<i>27,837</i>
Asset shares	11,058	10,643	21,701	10,846	10,363	21,209	10,120	9,595	19,715
+ Planned enhancements	1,062	1,062	2,124	652	653	1,305	570	565	1,135
- Planned deductions & gtee charges	-18	-15	-33	-29	-23	-52	-68	-55	-123
+ Contractual guarantees & guaranteed minimum pension (GMP)	486	431	917	627	584	1,211	1,163	1,080	2,244
+ non-Contractual guarantees (Mortgage Endowment Promise)	154	140	294	153	142	295	221	219	440
+ Financial options	15	185	200	12	159	171	20	210	230
+ Smoothing costs	-17	-13	-30	-34	-26	-60	-27	-16	-43
+ Other long-term insurance liabilities (includes shareholder transfers)	303	286	589	170	167	337	-2	48	46
+ Realistic current liabilities	1,489	1,181	2,670	1,301	1,092	2,393	1,466	1,199	2,665
<i>Total realistic liabilities</i>	<i>14,532</i>	<i>13,900</i>	<i>28,432</i>	<i>13,699</i>	<i>13,109</i>	<i>26,808</i>	<i>13,464</i>	<i>12,845</i>	<i>26,309</i>
<i>Excess realistic assets (i.e. the estate)</i>	<i>1,428</i>	<i>1,210</i>	<i>2,638</i>	<i>1,155</i>	<i>960</i>	<i>2,115</i>	<i>765</i>	<i>764</i>	<i>1,529</i>

*Source: 2007, 2008 FSA returns Forms 18 & 19 and Aviva 30 June 2008 draft RBS reports v1.2 (10<sup>th</sup> July 2008) – figures are subject to rounding*

The table above differs from the presentation in the FSA return, and numbers are subject to rounding. The long term insurance capital requirement (LTICR) is deducted from the present value of future profits (PVFP) on non-profit business, rather than being included in the

regulatory value of assets. The PVFP on non-profit business includes the release of the LTICR.

We note here that there is a process followed by Aviva, following the finalisation of results, which makes post year end adjustments to reflect items which were not available at the time of publishing, but which if they had been available would have impacted the published figures. As at 31 December 2008, the date of finalising the figures for the policyholder advocate's purposes, the total of all the adjustments was a £41m addition to the estate. (We are aware that this has since been updated.) The policyholder advocate has therefore used an inherited estate value of £1,529m + £41m = £1,570m as at 31 December 2008 in her figures. The up-to-date post year end adjustments will be allowed for in the calculation of the inherited estate for the purposes of the policyholder incentive payment (PIP) calculation. At the time of finalising her guidance to policyholders, the latest figure for post year end adjustment was not sufficiently different to £41m to impact that guidance.

In February 2008, Aviva announced that it was able to make a special distribution of £2.4bn of the inherited estate. This 90/10 distribution (90% to policyholders, 10% to shareholders) will provide benefits in the form of a special distribution to qualifying policyholders of some £2.1 billion<sup>1</sup> from the inherited estates of CGNU Life and CULAC over the next 3 years. The inherited estate - before the allowance for the pre reattribution distribution (PRD) and the shareholder tax relating to the shareholders' portion of the PRD, which is also borne by the estate - at the end of 2007 was £5.002bn. The total cost of the PRD as at 31/12/07 is thus £2.364bn. We would also note that the PRD is held as a liability in the planned enhancements line shown above and has reduced significantly over the half year due to the fact that the first of the three instalments has been declared (backdated to 1 January 2008), and has served to increase asset shares reported in the 2008 half year and year end figures. Since then a further instalment has been declared and this will also result in a decrease in planned enhancements and an increase in assets shares in the next RBS. Movements in investment markets will also

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<sup>1</sup> This figure is as at 31 December 2008. In practice, the amount earmarked for distribution will be affected by movements in investment markets from that date to the dates on which it is distributed.

affect the liability shown in the realistic balance sheet for those tranches of the special bonus which had not been declared at the balance sheet date.

The final PIP offered is to be based on the average of the size of the inherited estates of CGNU and CULAC valued at dates close to the effective date (end of June, July and August if that date is 1 October 2009). The figures for these inherited estates were not available at the time of writing this appendix.

#### **1.04 Adjusted estimate of the inherited estates**

Our revised estimate of the combined inherited estate at 31 December 2008 is detailed in section 5 and is summarised in the table below:

***Table 1.2: Adjusted estimates of the combined inherited estate at 31 December 2008 (after allowing for the PRD)***

Value of the inherited estate (from Table 1.1)	1,529
Estimate of post year end adjustment to the published estate	41
Total KPMG adjustments	177
<b>Revised inherited estate at 31 December 2008</b>	<b>1,747</b>

*Source: KPMG Analysis*

It is worth noting at the outset that our review of the CGNU Life and CULAC balance sheets has necessarily been limited. The results, assumptions, models and methodologies have not been scrutinised to the same degree of detail as they would have been under a formal independent external audit. As the FSA returns for both companies at 31 December 2007 and 31 December 2008 have been subject to an independent external audit before being published, we have focused instead on understanding the technical approaches used and the adjustments appropriate for our purpose.

In particular we have had discussions with Aviva regarding the changes made to assumptions from December 2007 to June 2008 and again to December 2008.

## **1.05 Structure of this report**

In Section 2 we summarise the RBSs published by CGNU Life and CULAC at the end of 2007 and 2008. Section 3 considers Aviva's actuarial valuation methodologies and the realistic valuation bases adopted for these funds are considered in section 4. In Section 5 we set out our adjusted estimate of the size of the inherited estate at the end of 2008, based on the margins identified in the preceding two sections, and compare these to the corresponding adjustments we made at the half year 2008. The end 2008 figure is taken as the starting position for the projections of the possible future development of the funds in the absence of the reattribution, which was used by the policyholder advocate to formulate her advice to eligible policyholders.

Section 6 gives our comments on Aviva's approach to calculating the inherited estates for the purposes of calculating the aggregate amount of the PIP, and hence the incentive payments which will be made to holders of Elected Policies if the reattribution goes ahead. The reason that a different approach to valuing the inherited estates for this purpose is taken is because the inherited estate at 30 June 2009, 31 July 2009 and 31 August 2009 are not audited, and so additional checks are performed on the results. In addition both Aviva and the policyholder advocate wanted to smooth out potential volatility which may occur in taking the value of the inherited estates at one date. Finally, we need to review these figures to ensure that no further margins have been introduced into the calculations which could potentially invalidate the margins identified at the 2008 year end. Section 7 is a general section which sets out the theoretical structure of the RBSs in the context of the regulations in order that the reader can gain further detail of the regulatory framework if required.

## **2.00 The CGNU Life and CULAC realistic balance sheets**

### **2.01 The published inherited estate**

In the five tables below we have presented summarised RBSs for CGNU Life and CULAC at the end of 2004 - 2008. This information was sourced from the FSA returns for the two firms and is therefore consistent with Aviva's estimate of the inherited estate. It is clear that the combined inherited estate has grown significantly over the years 2004 to 2007.

**Table 2.1: Summary of the published inherited estates at 31 December 2004**

£'millions	CGNU Life WP fund	CULAC WP fund	Total
Total realistic assets	12,254	13,483	25,737
Total realistic liabilities	10,543	11,866	22,409
Excess realistic assets	1,711	1,617	3,328

Source: FSA returns Form 19

**Table 2.2: Summary of the published inherited estates at 31 December 2005**

£'millions	CGNU Life WP fund	CULAC WP fund	Total
Total realistic assets	15,157	14,688	29,844
Total realistic liabilities	13,075	12,744	25,819
Excess realistic assets	2,082	1,943	4,025

Source: FSA returns Form 19 – figures are subject to rounding

**Table 2.3: Summary of the published inherited estates at 31 December 2006**

£'millions	CGNU Life WP fund	CULAC WP fund	Total
Total realistic assets	15,340	14,732	30,072
Total realistic liabilities	12,790	12,252	25,042
Excess realistic assets	2,550	2,480	5,029

Source: FSA returns Form 19 – figures are subject to rounding

**Table 2.4: Summary of the published inherited estates at 31 December 2007 (showing effect of PRD)**

£'millions	CGNU Life WP fund	CULAC WP fund	Total
Total realistic assets	15,960	15,111	31,071
Total realistic liabilities	14,532	13,900	28,432
Excess realistic assets	1,428	1,210	2,638
Excess before allowing for the PRD	2,609	2,393	5,002
PRD	1,181	1,183	2,364

Source: FSA returns Form 19, Realistic Reporting – December 2007 version 2 (13<sup>th</sup> February 2008) – figures are subject to rounding

**Table 2.5: Summary of the published inherited estates at 31 December 2008**

£'millions	CGNU Life WP fund	CULAC WP fund	Total
Total realistic assets	14,229	13,609	27,838
Total realistic liabilities	13,464	12,845	26,309
Excess realistic assets	765	764	1,529

*Source: FSA returns Form 19*

In section 6 we discuss in general terms the regulatory framework within which the RBS is determined and we cover in more detail the individual components of the RBS referencing the individual lines in the FSA forms.

## **3.00 The methodology used to value the liabilities**

### **3.01 Introduction**

In this section, we consider in turn the methodology used to calculate the more significant individual entries in the RBS. The areas we have considered are those which were material at 31 December 2008. At the end of each sub-section we consider whether any adjustment has been made to the inherited estate in respect of the element of the RBS considered in the sub-section, and section 5 quantifies these adjustments where relevant.

**Table 3.1: Detailed realistic balance sheets (post PRD) (Table 1.1)**

(£' millions)	December 31 2007			June 30 2008			December 31 2008		
	CGNU	CULAC	Total	CGNU	CULAC	Total	CGNU	CULAC	Total
Regulatory value of the admissible assets of the fund	16,515	16,642	33,157	15,422	15,546	30,968	14,798	15,175	29,973
- non-profit mathematical reserves	-993	-1,917	-2,910	-1,015	-1,946	-2,961	-965	-2,002	-2,968
+ present value of future profits (PVFP) on non-profit business	438	386	824	447	468	915	396	436	832
<i>Total realistic assets</i>	<i>15,960</i>	<i>15,111</i>	<i>31,071</i>	<i>14,854</i>	<i>14,069</i>	<i>28,923</i>	<i>14,229</i>	<i>13,609</i>	<i>27,837</i>
Asset shares	11,058	10,643	21,701	10,846	10,363	21,209	10,120	9,595	19,715
+ Planned enhancements	1,062	1,062	2,124	652	653	1,305	570	565	1,135
- Planned deductions & gtee charges	-18	-15	-33	-29	-23	-52	-68	-55	-123
+ Contractual guarantees & guaranteed minimum pension (GMP)	486	431	917	627	584	1,211	1,163	1,080	2,244
+ non-Contractual guarantees (Mortgage Endowment Promise)	154	140	294	153	142	295	221	219	440
+ Financial options	15	185	200	12	159	171	20	210	230
+ Smoothing costs	-17	-13	-30	-34	-26	-60	-27	-16	-43
+ Other long-term insurance liabilities (includes shareholder transfers)	303	286	589	171	166	337	-3	48	46
+ Realistic current liabilities	1,489	1,181	2,670	1,301	1,092	2,393	1,466	1,199	2,665
<i>Total realistic liabilities</i>	<i>14,532</i>	<i>13,900</i>	<i>28,432</i>	<i>13,699</i>	<i>13,109</i>	<i>26,808</i>	<i>13,464</i>	<i>12,845</i>	<i>26,309</i>
<i>Excess realistic assets (i.e. the estate)</i>	<i>1,428</i>	<i>1,210</i>	<i>2,638</i>	<i>1,155</i>	<i>960</i>	<i>2,115</i>	<i>765</i>	<i>764</i>	<i>1,529</i>

*Source: FSA returns Forms 18 & 19 2007, Aviva RBS report 06/08 and 12/08 – figures are subject to rounding*

### 3.02 Scope of Actuarial Review

Valuation methodologies need to be developed to fit the specific circumstances of a company, the contracts it has written and its valuation systems. In the same way that margins in the valuation assumptions build prudence into the valuation result, the approaches and approximations used in the valuation calculations could produce an inherently cautious estimate of the liabilities, which could be to the detriment of policyholders in the context of a reattribution. As a result, in addition to our review of the valuation assumptions used we have

also carried out work to understand the nature of the actuarial methodology used in the calculation.

As we noted earlier, our review of the CGNU Life and CULAC balance sheets has necessarily been limited. The results, models and methodologies have not been scrutinised to the same degree of detail as they would have been under an independent external audit. As the FSA returns for both companies at the year end have already been subject to an independent external audit we have focused instead on understanding the technical approaches used.

### **Nature of our review**

In order to produce this report for the policyholder advocate we have had to collect and review information from a number of different sources. Principally this involved:

- Reviewing publicly available information on the value of the assets and liabilities of CGNU Life and CULAC.
- Reviewing documentation supplied by Aviva in response to requests.
- Meeting the Aviva actuarial team to discuss the technical actuarial practices and methodologies involved in preparing the realistic balance sheets.

### **Consideration of Aviva documentation**

For the purposes of this report we have considered both public and non-public financial information. In particular we have focused on:

- The FSA returns for CGNU Life and CULAC submitted for 31 December 2006, December 2007 and December 2008. This information is publicly available.
- Scheme documentation, summaries and notes produced by Aviva.
- Notes produced by Aviva in response to particular questions raised by us during our review, in particular details of the 2008 half year RBS.

## Meetings with Aviva

In the course of our work we have had opportunities to discuss the actuarial mechanics behind Aviva's calculation of the RBS with their senior actuaries.

### 3.03 Asset valuation

Before considering the valuation of the liabilities, we first consider one particular actuarial aspect of the valuation of the assets. The table below is an extract from table 3.1.

(£' millions)	December 31 2008		
	CGNU	CULAC	Total
Regulatory value of the admissible assets of the fund	14,798	15,175	29,973
- non-profit mathematical reserves	-965	-2,002	-2,968
+ value of future profits on non-profit business	396	436	832
<i>Total realistic assets</i>	<i>14,229</i>	<i>13,609</i>	<i>27,837</i>

*Source: FSA returns Forms 18 & 19 2008*

The presentation of the value of future profits on non-profit business shows the value reduced for the amount of the LTICR on non-profit business. In the FSA forms the LTICR is deducted from the regulatory value of the admissible assets of the fund.

The tangible assets of the fund are for the most part valued at their market (or fair) value. This includes the property assets where Aviva has implemented valuation systems that provide for quarterly estimates of the value of their property asset holdings. We have not reviewed these valuation systems but they are subject to independent external audit and we are comfortable that they can be considered fit for purpose.

The most significant intangible asset held by each fund (£832m for CGNU Life and CULAC combined) is the credit taken for the future profits on non-profit business. Non-profit policyholders do not benefit from profits or losses made on their contracts and these profits or losses accrue to the fund. However we would note from the AFH report that Aviva considers that the value for this business (excluding non-profit immediate annuity business, conventional pension endowments, and deferred annuities written as an investment of the inherited estates) has already been or will be allocated to asset shares on or prior to the Effective Date.

The value of this business is calculated using market consistent assumptions plus an allowance for additional value over market consistent assumptions due to the lack of liquidity of the assets held. We believe that more allowance for this lack of liquidity could have been made, and we cover this in more detail in sections 4 and 5.

*We consider the effect of using market consistent assumptions for the purpose of placing a value on the future margins expected to accrue to the inherited estates from the non-profit business written in the funds in sections 4 and 5.*

### 3.04 Asset shares

The table below is an extract from table 3.1.

	December 31 2008		
(£'millions)	CGNU	CULAC	Total
Asset shares	10,120	9,595	19,715

*Source: FSA returns Forms 18 & 19 2008*

The most significant component of the realistic with-profits liabilities is the policyholders' asset shares. With the necessary historical information, it is also, in principle, one of the simplest items to calculate. As part of our review work we have not had access to any of the asset share models used by Aviva.

We note that the calculation of the asset shares, unlike other components of the realistic liabilities, is not an area where prudence could penalise policyholders. Under the Scheme which sets out how the new with-profit sub-fund will operate post reattribution, asset shares form part of the "core asset account" which are assets allocated to policyholders to which shareholders' only right is 10% of distributions in the form of bonuses allocated to policies. As a result, while a cautious overstatement of this obligation reduces the size of the available inherited estate the core assets (which are all attributable to policyholders if not required to meet expenses and other liabilities chargeable to the core assets in accordance with the Scheme) will be overstated by an equal amount. Section 5.14.104 of the AFH report sets out the full details of the process if any corrections need to be made to asset shares, importantly, where the error has resulted in a material overstatement of asset shares for policies allocated

to the New WPSF any correction will be limited to the aggregate amount of any corrections of understatement in the New WPSF, and as such the shareholders cannot benefit from asset shares being overstated.

Solvency regulations and independent external audit should at the same time ensure that the asset share results are not underestimated.

The asset shares (part of the with-profits benefits reserve as defined by the FSA) are a retrospective accumulation of the premiums paid under the policy, with deductions for charges applied and expenses incurred, and these cash flows are rolled up at the actual rate of investment returns earned on with-profits fund assets. For the most part, CGNU Life and CULAC calculate their asset shares accurately taking into account the individual circumstances of each policy. However, for whole life contracts and some small blocks of business, such an approach is either not appropriate, or good historical data is not available. In these cases either a bonus reserve valuation is carried out or the statutory (Peak 1) reserves are held. Both approaches are common methods used by the industry to determine with-profits benefits reserves where asset shares are not available or are not appropriate.

A change in methodology was implemented in 2007 which meant that the conventional with-profits whole life business was valued using a bonus reserve valuation methodology as opposed to asset shares. This is due to the fact that the payouts are based on bonuses driven by endowments as opposed to whole life asset shares. This reduced the with-profits benefits reserves (and hence increased the inherited estate) by just under £200m. We are comfortable that the change in approach is reasonable. The total amount of business which does not use asset shares as the approach to calculating the with-profits benefit reserve is under 5% at 31 December 2008.

The table below sets out the total asset shares, at 31 December 2008, for in-force with-profits business calculated on all three approaches for CGNU Life and CULAC in aggregate.

**Table 3.3: Break down of asset shares calculated at 31 December 2008**

(£'millions)	Directly calculated Asset share	Bonus reserve valuation	Statutory reserve	Total asset share shown on Form 19	Proportion approximated
UWP Life	11,629	156	17	11,802	1.47%
Conventional Life	3,287	276	88	3,651	9.97%
UWP Pensions	2,816	0	14	2,830	0.49%
UWP Stakeholder	762	0	0	762	0.00%
Conventional Pensions	464	35	157	656	29.27%
UWP Overseas	0	0	0	0	0.00%
Miscellaneous Other	14	0	0	14	0.00%
<b>Total</b>	<b>18,972</b>	<b>467</b>	<b>276</b>	<b>19,715</b>	<b>3.77%</b>

Source: FSA returns Appendix 9.4a

We are comfortable that where approximations have been used, they do not have a material effect on the estimate of the with-profits liabilities.

*We have made no adjustment to the inherited estate in respect of potential approximations in the determination of the amount of the with-profits benefits reserve at 31 December 2008.*

### 3.05 Planned enhancements to asset shares

The table below is an extract from table 3.1.

(£'millions)	December 31 2008		
	CGNU	CULAC	Total
+ Planned enhancements	570	565	1,135

Source: FSA returns Forms 18 & 19 2008

Aviva has announced its intention to make an enhancement to policyholder benefits (the Special Distribution) from the inherited estates of the funds. The Special Distribution is to be in the form of a special bonus awarded to qualifying policies in three tranches over 2008, 2009 and 2010. The estimated cost of the outstanding tranches of the special distribution is included in planned enhancements. The amount has decreased over 2008 due to the fact that

the first instalment has been declared, which has served to increase the asset shares and payouts on exiting policies, and as a result of movements in investment markets.

In addition, within CGNU Life a small block of unitised with-profits policies was written on the basis of a minimum guaranteed bonus growth rate. For most of these contracts this minimum has since been removed in return for an additional 0.5% regular bonus each year.

This planned enhancement relating to the 0.5% bonus is calculated approximately in the balance sheet.<sup>2</sup> We are, however, comfortable that given the small number of policies to which this applies the effect on the estimate of the inherited estate is limited.

***We have made no adjustment to the inherited estate in respect of potential margins in the determination of the realistic liability for planned enhancements.***

### **3.06 Contractual guarantees**

The table below is an extract from table 3.1.

	December 31 2008		
(£'millions)	CGNU	CULAC	Total
+ Contractual guarantees	1,163	1,080	2,244

*Source: FSA returns Forms 18 & 19 2008*

The most significant contractual guarantee obligations facing CGNU Life and CULAC are the guarantees on with-profits policies. These are valued stochastically for the purpose of the RBS. Aviva implemented a new model for the 2007 RBS calculations (the dynamic financial analysis (DFA) model), which made allowances for dynamic interactions of assumptions which the 2006 model did not. An example of dynamic assumptions would be if the future bonus declarations varied with the modelled solvency position of the fund as opposed to remaining at a fixed level each year. A summary of the enhancements made to the modelling is set out below:

- Bonus rates vary dynamically rather than being fixed, and so reflect more closely what might happen in practice.

<sup>2</sup> As 0.5% of the unit reserve multiplied by the term outstanding.

- The DFA model uses a dynamic asset share equity backing ratio (EBR) calculation approach, in line with the methods used in practice, and starts from the actual EBR at the balance sheet date. The non-dynamic model had a simplified dynamic EBR method and started from the benchmark EBR. The impact of the difference in dynamism between these approaches is small. The dynamic model however runs at a higher average EBR than the non-dynamic model, leading to an overall increase in the realistic liability determined for guarantee costs;
- The Mortgage Endowment Promise calculation, within the dynamic model, allows for a reduction in the amount assumed paid under the Promise if the policy payout including the Promise amount would otherwise exceed the target payout level. This is in contrast to the non-dynamic model which valued the Promise payments as fixed amounts irrespective of the shortfall projected for the relevant policies at maturity;
- The dynamic model uses an externally provided Economic Scenario Generator (ESG) to generate the 5,000 investment simulations over which the possible future development of the funds is projected. The non-dynamic model used a simpler in-house investment model based on a much smaller set of simulations. Using this new investment model leads to an increase in the realistic liability determined for guarantee costs; and
- There are a number of other model differences which lead to the DFA model calculating a higher realistic liability than the non-dynamic model. These include different values for the excess of future charges over expenses and shareholder transfers, adjustment to guaranteed annuity option (GAO) exercise ages and different values placed on the minimum return of premium underpin applying to certain pension policies.

We are comfortable that the model now does allow for dynamic management actions. We believe there are still some areas of prudence in the methodology, for example the model does

not allow the EBR to reduce below 40%, but we do not believe the prudence remaining is significant, given management's views on maintaining high EBRs.

*We consider the impact of using market consistent assumptions for the purpose of determining the realistic liability for guarantee costs further in sections 4 and 5.*

### **3.07 Non-contractual guarantees**

The table below is an extract from table 3.1.

	31 December 2008		
(£'millions)	CGNU	CULAC	Total
+ non-Contractual guarantees (Mortgage Endowment Promise)	221	219	440

*Source: FSA returns Forms 18 & 19 2008*

The non-contractual guarantees to which CGNU Life and CULAC are exposed relate to the cost of the Mortgage Endowment Promise made to certain policyholders in 2000. This promise was made in response to falls in stock markets which suggested that many policyholders would face payout shortfalls on maturity.

At the time the promise was made, projections were carried out assuming that future investment returns would average 6% p.a. These projections were then compared to the target maturity payout under these policies in order to determine the expected shortfall under the mortgage related endowments. Policyholders who were eligible were promised that any shortfalls that might arise, up to this expected amount, would be covered by the relevant with-profits fund in certain circumstances. In particular, these additional payments would only be made provided they could be met from the future earnings on the inherited estate. Under the Scheme this condition as to sufficient estate earnings will be dropped for these policyholders irrespective of whether the policyholder elects to accept an incentive payment. (The other conditions applying to the Promise made to certain CGNU Life and CULAC policyholders will continue to apply.)

Since 2000, ongoing communications to relevant policyholders have confirmed the nature of the promise.

The introduction of the new “life DFA” model which was used for the 2007 RBS calculations removed inherent prudence within the 2006 calculations.

*Section 5 sets out further information on any adjustments made to the inherited estates in respect of this liability.*

### 3.08 Financial options

The table below is an extract from table 3.1.

	December 31 2008		
(£'millions)	CGNU	CULAC	Total
+ Financial options	20	210	230

*Source: FSA returns Forms 18 & 19 2008*

This represents the value placed on the guaranteed annuity option (GAO) liability attaching to certain conventional with-profits deferred cash pension policies. Contracts provide for a basic cash amount plus accrued regular bonus and a final bonus. For some such policies, the policyholder then has the option to take this cash amount or to convert this into income at guaranteed rates written into the policy conditions.

*We have made an adjustment for the economic assumptions applied to determine the amount of this liability at 31 December 2008 as set out in sections 4 and 5.*

### 3.09 Smoothing

The table below is an extract from table 3.1.

	December 31 2008		
(£'millions)	CGNU	CULAC	Total
+ Smoothing costs	-27	-16	-43

*Source: FSA returns Forms 18 & 19 2008*

Strictly, the difference between the payout under a contract and the asset share is made up of both the cost of guarantee (which may be zero) and the cost of smoothing (which could be positive or negative). To be consistent, both the guarantee cost and the smoothing cost should be determined as part of the same process.

CGNU Life and CULAC target with-profits payouts at 100% of asset share and the cost of guarantees is determined as the excess (if any) of minimum guaranteed benefits over the asset share.

To estimate the cost of smoothing it is assumed that a charge will be applied to asset shares going forward in order to recover the negative balance on the retrospective smoothing account at the balance sheet date.

In practice CGNU Life and CULAC apply a cap to the total change in payouts to no more than 15% on a year-on-year basis.

Our considerations over prudence, as discussed above, are less relevant for the smoothing reserves as any smoothing account in the New WPSF will form part of the core assets as do the asset shares.

*We have made no adjustment to the inherited estate in respect of this liability.*

### 3.10 Other long term insurance liabilities

The table below is an extract from table 3.1.

	31 December 2008		
(£'millions)	CGNU	CULAC	Total
+ Other long-term insurance liabilities (includes shareholder transfers)	-2	48	46

*Source: FSA returns Forms 18 & 19 2008*

The tables below set out the additional liabilities recognised by CGNU Life and CULAC on their balance sheets at 31 December 2008, 30 June 2008 and 31 December 2007:

**Table 3.3: Other long term insurance liabilities at 31 December 2008**

(£'millions)	CGNU	CULAC	Total
Shareholder transfers not charged to asset shares and tax on shareholder transfers	147	158	305
Pensions review	1	12	13
Aviva pension scheme	6	7	13
Mortgage endowment mis-selling	12	20	32
Other compensation costs	12	9	21
Costs of future expenses not charged to asset shares	23	19	41
Mortgage Endowment Promise data provisions	10	2	12
UWP value of in-force	-230	-196	-427
Additional reserve for contingency	17	16	33
<b>Total</b>	<b>-2</b>	<b>48</b>	<b>44</b>

*Source: Aviva responses to questions – figures are subject to*

**Table 3.4: Other long term insurance liabilities at 30 June 2008**

(£'millions)	CGNU	CULAC	Total
Shareholder transfers not charged to asset shares and tax on shareholder transfers	235	242	477
Pensions review	1	12	13
Aviva pension scheme	7	7	14
Mortgage endowment mis-selling	34	28	62
Other compensation costs	37	19	56
Costs of future expenses not charged to asset shares	31	17	48
Mortgage Endowment Promise data provisions	10	2	12
UWP value of in-force	-234	-210	-444
Additional reserve for contingency	50	50	100
<b>Total</b>	<b>171</b>	<b>167</b>	<b>337</b>

*Source: Aviva draft RBS report 06/08 – figures are subject to rounding*

**Table 3.5: Other long term insurance liabilities at 31 December 2007**

(£'millions)	CGNU	CULAC	Total
Shareholder transfers not charged to asset shares and tax on shareholder transfers	331	332	663
Pensions review	1	12	13
Aviva pension scheme	15	17	32
Mortgage endowment mis-selling	35	29	64
Other compensation costs	37	19	56
Costs of future expenses not charged to asset shares	25	12	37
Mortgage Endowment Promise data provisions	10	2	12
UWP value of in-force (including transfer subsidy)	-176	-161	-337
Additional reserve for contingency	25	25	50
<b>Total</b>	<b>302</b>	<b>286</b>	<b>588</b>

*Source: FSA returns Appendix 9.4a – figures are subject to rounding*

Our review has highlighted the following in connection with certain material figures in the tables above, and where adjustments have been made to these liabilities; these are set out in section 5:

- Shareholder transfers not charged to asset shares and tax on shareholder transfers

These reserves have been established by Aviva to cover transfers to shareholders not charged to asset shares on unitised with-profits business (UWP), and tax on future shareholder transfers, which is charged to the inherited estate.

- Aviva pension scheme

In general the pension scheme deficit relates to defined benefit pensions of employees who worked for the with-profit companies prior to the introduction of the respective Management Services Agreements (MSA) in 1998. Using the April 2005 pension scheme valuation, the Scheme Actuary apportioned the overall deficit as pre-MSA and post-MSA. Prior to the MSAs, expenses incurred in running the business were charged directly to the relevant life fund

within the life company. This included all pension scheme costs. As a result (and in line with the uses of the funds stated in the PPFM) it was deemed reasonable for the with-profit funds' inherited estates to meet a proportion of the pre-MSA deficit (since these related to the pensions of those employees who had previously worked for these funds).

Since the CGNU Life and CULAC with-profits funds will meet a share of the costs of funding the Aviva plc Staff Pensions Scheme deficit, a reserve has been established as the discounted value of the future payments, up to March 2014, into the scheme as per the current funding plan. Because the fund has agreed to meet a share of the total payments into the scheme, payments over the full funding term are allowed for rather than just 5 years, which is the more common approach taken.

- Mortgage endowment mis-selling

We have already considered the provision made for the Mortgage Endowment Promise Aviva has provided to certain policyholders to protect them against projected shortfalls on their mortgage endowments. This promise was originally provided to protect against mis-selling claims on their endowment portfolio.

However, despite this promise Aviva will pay compensation to policyholders who are able to prove they were mis-sold their endowments. It is possible therefore for policyholders to receive a payout under both the endowment promise and the endowment compensation scheme. As a result both CGNU Life and CULAC are required to set up reserves to cover the costs of this compensation in addition to their Mortgage Endowment Promise provision.

The liability for mis-selling compensation is based on an estimated number of policies requiring compensation multiplied by the expected average cost of compensation. While this is in line with the way that we have seen other companies in the market provide for this sort of cost, because of its simplicity

this type of approach can often mask prudence which would be to the detriment of policyholders in the context of a reattribution.

See section 5.02 for details on adjustments made.

- UWP value of in force

This figure is the present value of the projected excess of future charges on UWP policies over the expenses of administering this business. Although categorised on the balance sheet under “other liabilities” it is in fact an asset of the fund and contributes to the size of the inherited estate.

For the most part this item is calculated in the same way as the future profits on non-profit business are calculated. As a result we have similar considerations as to whether there is prudence in the assumptions backing this estimate, and this is covered in more detail in section 5.02.

- Additional reserves for contingencies

These reserves have been established by Aviva to protect against the adverse financial impacts of unknown events such as policyholder actions. There is no scientific basis for the calculation underpinning the reserve. While we recognise the need for this provision for supervisory purposes, we do not believe it appropriate to allow for a contingency reserve for the purpose of determine the value available for reattribution.

See section 5.02 for details of adjustments made.

***We have made a number of adjustments in respect of the other liabilities which are quantified in section 5.***

### 3.11 Realistic current liabilities

The table below is an extract from table 3.1.

	31 December 2008		
(£millions)	CGNU	CULAC	Total
+ Realistic current liabilities	1,466	1,199	2,665

Source: FSA returns Forms 18 & 19 2008

The current liabilities of the fund are, for the most part, measured in exactly the same way as they would be in the Report and Accounts, and represent expected short term outgoings, for example claims which have been reported but not yet paid. Deferred tax assets or liabilities also form part of the current liabilities. For the 2008 year end RBS, a tax asset of £28m CGNU and £20m CULAC has been deducted from the current liabilities. This represents 50% of the full potential tax asset.

Tax assets represent future expected tax benefits due to the fact that investment losses have been made which will reduce future tax bills. Aviva has informed us that the 50% reflects the fact that in roughly half the economic scenarios modelled no future gains are projected to be made and so no credit for the economic value of the resulting future reduced tax charge could be made in these scenarios. Although there may be some prudence in this assumption, we do not believe this to be material and so no adjustments have been made to the current liabilities.

We have made no adjustment to the inherited estate in respect of this liability.

## 4.00 The CGNU Life and CULAC realistic valuation basis

### 4.01 Overview

The valuation basis used to carry out an actuarial valuation should reflect the individual circumstances of a particular fund. As a result, assessing prudence is difficult without detailed information on the risk profile and recent experience of the underlying portfolio. It is not simply a matter of looking at the absolute value of a particular assumption and labelling any apparently unusual results as conservative.

In the absence of specific and detailed information on the experience of CGNU Life and CULAC we carried out a benchmarking exercise in 2007 comparing the key assumptions used in these funds to those used by their peers. At the time of writing this report it was not possible to do the same for 2008. However we had a number of discussions with Aviva around any changes to approach in determining their market-consistent assumptions and around any changes to non-economic assumptions made. The results of the benchmarking did not conclusively suggest that any particular assumptions were over-cautious, nor that Aviva's approach to setting the market-consistent assumptions with respect to the RBS calculations was out of line with the industry.

#### **4.02 Nature of the work carried out**

The valuation basis is made up of financial and non-financial assumptions.

FSA rules require a market-consistent estimate of the realistic liabilities. In order for the calculation to be considered market-consistent the financial assumptions, particularly the risk-free interest rates and asset volatilities, must be chosen to reproduce the prevailing market prices of a specified set of assets and derivatives at the valuation date. This restricts the amount of discretion available to the actuaries carrying out the calculations. However, it would be inappropriate to assume as a result that this basis was not to some extent subjective. There is still considerable room for judgment in determining which asset prices to calibrate to and in the setting of the volatility assumptions.

The non-financial assumptions should, under the rules, be close to best-estimate assumptions of future experience. As a first approximation therefore future expectations should be consistent with current experience. In a number of areas though, such as annuitant mortality or guarantee take-up rates, past experience may not be credible or appropriate as a future estimate. Consequently firms may prefer to take a prudent view of the future. This prudence would tend to overstate the realistic liabilities reducing the value of the published inherited estate.

We have carried out our review in two parts: first we compared the 2007 economic assumptions with other companies' assumptions, then we compared the 2008 valuation basis

(both at the mid and end year) with that used in 2007 in order to understand the changes made over the year. On the whole, and unless otherwise stated below, there were no significant changes made to the methodology used to derive the assumptions between end December 2007 and December 2008.

### 4.03 Asset model assumptions

#### Yield curve

The economic scenario model for CGNU Life and CULAC is calibrated to a “gilts yield plus ten basis points” yield curve. In our experience, this is the approach used by most firms in the industry. The end 2007 and end 2008 yield curves for both government bonds (gilts), and swaps are set out in the table below:

Table 4.1: Market Rates (%)

Term (years)	nominal spot rate 31/12/07	Swaps 31/12/07	nominal spot rate 30/06/08	Swaps 30/06/08	nominal spot rate 31/12/08	Swaps 31/12/08
1	4.75	5.56	5.22	6.28	0.88	1.99
2	4.34	5.21	5.16	6.25	1.43	2.60
3	4.31	5.14	5.15	6.23	2.00	2.88
4	4.36	5.11	5.16	6.16	2.42	3.06
5	4.41	5.09	5.17	6.07	2.71	3.16
6	4.46	5.08	5.17	5.97	2.92	3.25
7	4.49	5.06	5.17	5.89	3.08	3.31
8	4.50	5.05	5.17	5.81	3.21	3.37
9	4.51	5.03	5.17	5.73	3.32	3.41
10	4.52	5.02	5.17	5.66	3.41	3.45
15	4.47	4.90	5.09	5.41	3.85	3.68
20	4.39	4.81	4.90	5.20	4.07	3.60
25	4.29	4.74	4.66	5.00	4.01	3.45

Source: Bank of England (Nominal spot rates), Bloomberg (Swaps)

We note that the approach taken to deriving market data can differ, and rates differ depending on whether the rates are quoted annually, continuously or semi-annually. We have taken published data with no adjustments and have allowed for the fact that the swaps above are semi annual and the spot rates compound (which marginally reduces the spread implied by the above table). We note that the rates quoted in Aviva’s appendix 35 A “Size of inherited

estates” are slightly different, but the spread of swaps over gilts is consistent between that implied by the table above and Aviva’s rates.

We would note that gilts plus ten is not the standard risk-free rate used in the financial markets particularly for pricing derivatives. Typically these types of transactions use the prevailing swap yields, which are usually higher than gilt yields, as a proxy for the risk-free rates. The use of gilts plus ten was still significantly below the swap yields in 2007, and mid 2008. However, at the end of 2008, the spreads were unusual with gilts plus ten basis points being higher than swaps at years 10 and over. As a result there could be a margin for prudence in the liability valuation (components of which are based on gilts plus ten basis points). We note here that this margin is one that is driven by market practice.

***We have considered the impact of using swap rates as opposed to gilts plus ten in section 5.***

### **Asset volatility**

The table below sets out the equity volatility assumptions used by CGNU Life and CULAC. After the risk free rates, the choice of volatility assumptions has the most impact on the value of the realistic liabilities. The higher the assumed volatility the higher the liability determined for the guarantee costs in the fund.

***Table 4.2: Volatility assumptions used***

Asset category	December 2007	June 2008	December 2008
Equities 5 years	23.7%	25.1%	34.4%
Equities 10 years	25.2%	26.4%	34.6%

*Source: FSA returns Appendix 9.4a for 2007 and 2008, Aviva responses to questions for June 2008*

In 2007, the volatility assumptions used by CGNU Life and CULAC did not appear out of line with the market, and Aviva used the same approach to deriving its assumptions from market data in 2008. In addition, we note that market volatilities had increased significantly over 2008 and we do not believe that the assumptions used were out of line with others we have seen in our experience.

***We have made no adjustment to the inherited estate in respect of this assumption.***

## 4.04 Demographic assumptions

### Annuitant Mortality

Mortality rates used by life insurance companies differ by product class. Rather than trying to understand all the differences in the mortality rates in each of our samples, we have compared the life expectancy (in years) that is implied for someone aged 65 at the end of 2007 and at the end of 2008. Note that where there are many different mortality rates for similar annuity products in a company, annuities in payment have been selected and the longest life expectancy in this category has been used in our analysis. We have set out our results in the table below:

**Table 4.4: Calculated life expectancies for male annuitants**

Company	2008 - Life expectancy aged 65	2007 - Life expectancy aged 65
CIS	24.3	24.9
AXA	24.7	24.8
Legal & General	22.6	26.2
Winterthur	24.1	23.9
Prudential	27.1	26.5
CGNU / CULAC	23.5	25.4

*Source: KPMG Analysis*

**Table 4.5: Calculated life expectancies for female annuitants**

Company	2008 - Life expectancy aged 65	2007 - Life expectancy aged 65
CIS	25.7	26.3
Axa	27.4	27.3
Legal and General	24.3	27.8
Winterthur	26.3	26.2
Prudential	27.3	27.5
CGNU / CULAC	25.5	27.1

*Source: KPMG Analysis*

A higher life expectancy requires higher reserves and increases the liability determined for guaranteed annuity options. While the CGNU Life and CULAC expectancies are slightly higher in 2007 than in 2006 they are more in line with the industry than they were in 2006, and given longevity is an area of considerable uncertainty we recognise that a high degree of judgement is required in determining the future expected rates. There were no significant changes to the assumptions at the end of 2008.

***We have therefore not made any adjustments to the inherited estate for annuitant mortality assumptions.***

### **Assurance Mortality**

Assurance mortality is usually set in line with the mortality experience relevant to the particular contract class in question since the rates can vary due to the target market who bought the contract which can vary by product and company. We note that the assurance mortality was strengthened from 2006 to 2007 in line with the experience of Aviva Life and Pensions (AVLAP), and although this level of prudence is appropriate for the purpose of the RBS, it is currently unusual for companies to be strengthening their assurance mortality rates due to the increasing longevity of the population. Further as the change was not based on the experience of CGNU Life or CULAC, we believed that this change in the assumption was not appropriate for our purpose. Therefore, we had originally made an adjustment to the size of the estate for assurance mortality as at the half year 2008. However, Aviva realigned the mortality assumptions to updated mortality tables for the 2008 year end, and this realignment released a similar amount of prudence to that we had adjusted for at the half year. Therefore our original adjustment is no longer required.

***We have not adjusted the inherited estate for this assumption.***

### **Persistency (lapse assumptions)**

Lapses (ie where a policyholder terminates the contract before the maturity date) are often affected by factors specific to a particular firm. As a result, meaningful comparisons of persistency between companies are difficult without an analysis of the underlying experience of each firm. Aviva has used assumptions relevant to its most recent experience. There is an argument to say that future lapse assumptions could be affected more by the reattribution process (ie more lapse after elected policyholders have received their PIP or deferred bonus), or by whether guarantees are in the money or not (guarantees in the money could reduce lapses), than by past experience.

The persistency assumptions were strengthened at the end of 2008 and these changes reduced the size of the inherited estate. The impact of assumption changes were:

CGNU impact on the inherited estate— [REDACTED]<sup>3</sup> on endowments

CULAC impact on the inherited estate – [REDACTED]<sup>3</sup> on GAO business persistency, [REDACTED]<sup>3</sup> on endowments.

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]<sup>3</sup>

We asked Aviva to provide the data to justify the change in the assumptions, which it did.

The assumptions for both CGNU and CULAC have decreased significantly over the year, and they are now in line with the 2007/2008 experience. However, it appears that no account has been taken of the previous two years' experience which looks very different from 2008. We questioned whether the assumptions should be based on just one year's data. Also, as discussed above, the reattribution and the deferred bonuses will have an impact on policyholder behaviour, and we would expect lapse rates to increase after these events, although the Mortgage Endowment Promise and other valuable guarantees are likely to keep people from lapsing given the current economic conditions. For CGNU, the rates used are lower than the three year historic average experience, but in contrast they are higher for CULAC.

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]<sup>3</sup>

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<sup>3</sup> Certain information in this appendix has been redacted (ie blanked out). This has been a requirement of Aviva, in order to prevent the public disclosure of information which Aviva believes is commercially sensitive. In some cases figures or words which are not deemed by Aviva to be commercially sensitive have been redacted in order to prevent the reader from deriving the nature of the information which Aviva deems to be commercially sensitive. The policyholder advocate does not agree that this information is commercially sensitive and believes that the redactions are inappropriate and unnecessary.

*CULAC CWP (GAO) bases*

2007 RBS assumption	2008 MCEV assumption	2008 RBS assumption
5%	█ <sup>4</sup>	1.5%

Source: Email 19 February 2009, RBS Info part 1

We have seen some output of experience analyses for this business, which showed slightly lower rates than █<sup>4</sup> for some durations, but the data is volatile █

█<sup>4</sup>

There is some other minor business which has weaker (i.e. higher lapse) assumptions for MCEV than for RBS, implying some prudence in the RBS mortality in deferment on GAOs, GMP and deferred annuity business (not material in CGNU/CULAC) and for lapse rates on UWP bonds for policy years 2, 3 and 4. We are informed that the impact of this is unlikely to be material (about █<sup>4</sup>).

*We have made an adjustment for persistency.*

**Take-up rates**

The take-up rates assumed for market value reduction (MVR) free guarantees and guaranteed annuity options are important determinants of the realistic liability determined for these guarantees. The table below sets out the take-up rate assumptions used by CGNU Life and CULAC:

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<sup>4</sup> Certain information in this appendix has been redacted (ie blanked out). This has been a requirement of Aviva, in order to prevent the public disclosure of information which Aviva believes is commercially sensitive. In some cases figures or words which are not deemed by Aviva to be commercially sensitive have been redacted in order to prevent the reader from deriving the nature of the information which Aviva deems to be commercially sensitive. The policyholder advocate does not agree that this information is commercially sensitive and believes that the redactions are inappropriate and unnecessary.

**Table 4.6: Take-up rate assumptions used: comparison of 2008 and 2007 rates**

Company	2008		2007	
	MVR-free take-up rate	GAO take-up rate	MVR-free take-up rate	GAO take up rate
CGNU	100%	80% increasing by 1% every year from 2010 onwards until an ultimate level of 95% is reached	100%	80% increasing by 1% every year from 2009 onwards until an ultimate level of 95% is reached
CULAC	100%	87% increasing by 1% every year from 2010 onwards until an ultimate level of 95% is reached	100%	85% increasing by 1% every year from 2009 onwards until an ultimate level of 95% is reached

*Source: Appendix 9.4a FSA returns*

All the above assumptions are applied on a static basis, i.e. the policyholders are not assumed to change their behaviour in response to changes in the economic environment. This can be considered prudent. However it is when the guarantees are biting that the policyholders are more likely to take the option and this is when the cost arises and so any prudence would be immaterial. We would also note that the rates have been strengthened slightly over the year implying more prudence.

Both MVR-free guarantee take-up rates and GAO take-up rates, are similar to lapse assumptions, in that there is considerable variation in the approach taken by the companies in our sample which reflects their individual experiences (as well as the terms of the guarantees that they offer). As a result it has not been possible for us to benchmark the levels used, but we note that the MVR-free rates are as high as they could be at 100% implying that it is likely that there is a level of prudence contained in the results. However from our knowledge of the industry, the GAO take-up rates do not look out of line.

We have also compared the 2007 GAO take-up rate assumption used by CGNU Life and CULAC to their experience and note that the valuation assumption appears to contain a small margin for prudence.

**Table 4.7: Take-up rates 2008**

Fund	Assumption applied in 2008
CGNU	80% increasing by 1% each year from 2010 onward until 95% is reached
CULAC	87% increasing by 1% each year from 2010 onward until 95% is reached

*Source: Appendix 9.4a FSA returns*

The take up-rate is based on an investigation of the actual take-up of GAO. Based on evidence of actual take-up rate investigations over the last three years we believe there is approximately a 10% margin of prudence.

Although this is an area where we believe there is some margin of prudence, we also acknowledge that it is an area which is very dependent on policyholder behaviour and it is possible that policyholders would choose to take the most beneficial option for them in times of economic uncertainty. We are informed that this assumption was not changed in 2008. We have therefore chosen to leave this as an area of prudence.

*We have not made any adjustments to the inherited estate for take-up rates.*

#### **4.05 The basis for the valuation of future profits for non-profit business and UWP business**

Valuing non-profit business on a realistic basis allows companies to take credit for the expected future profits of this business in their RBSs. This present value of future profits (PVFP) therefore needs to be calculated and appears as an intangible asset on the balance sheet. This approach arises as, in the first instance, non-profit liabilities are included based on a prudent basis, and the PVFP aims to release this prudence as part of the intangible assets in the RBS.

Some unitised with-profits business is charged with explicit charges which in practice may be more or less than the expenses and shareholder transfers attributable to this business. The value placed on such differences (PVFP) is included in the “other long term liabilities” (if the value is positive it acts to reduce other liabilities, and so increases the value determined for the inherited estate).

### **Unitised with profits PVFP**

The investment return assumption and the risk discount rate assumption have been set as the risk-free rate. We consider that the choice of risk-free rate is prudent for our purpose. Prevailing swap rates in the market could be used to justify different rates potentially increasing the valuation of the future profits on this business.

We asked Aviva to provide us with the results of the PVFP figure if calculated based on swap rates, but this figure was not available in time for the policyholder advocate to use the information. We were however informed that the difference was likely to be immaterial, and subsequent work showed this to be true (of the order of £2m). We have therefore made no allowance for this.

### **Non-annuity non-profit PVFP**

The risk discount rate assumption has been set as the risk-free rate assumption plus a margin of 0.5% to allow for risk and uncertainty. The investment return assumption is set at the risk-free rate. The 0.5% margin on the discount rate would have reduced the value placed on this business by around 5% (note the value of the non-annuity non-profit business is around 50% of the total value placed on the non-profit PVFP). This together with the choice of risk-free rate could be considered prudent for our purpose. However we do acknowledge that there is likely to be some risk attached to this business and so we have not made the small adjustment for the 0.5% margin in the risk discount rate. In addition, prevailing swap rates in the market could be used to justify different rates, potentially increasing the valuation of the future profits on this business (and hence the value of the inherited estates).

We have not considered the valuation basis used for the calculation of the mathematical reserves on non-profit business. The regulatory basis does not affect the realistic position of the with-profit fund directly.

The majority of the PVFP has already been allocated to asset shares where relevant. We asked Aviva to provide us with the results of the PVFP figure if calculated based on swap

rates, but this figure was not available in time for the policyholder advocate to use the information. We were however informed that the difference was likely to be immaterial. Based on subsequent analyses, we agreed with this conclusion.

### **Non-profit annuity business**

Due to the nature of the liabilities, the regulations allow the use of a liquidity premium in the calculation of the reserves and value of the in force business. The RBS uses gilts plus 110 basis points, and the move from gilts plus ten to gilts plus 110 increased the estate by [REDACTED]<sup>5</sup>.

For MCEV, the value placed on the annuities written by Aviva Annuity UK Limited incorporated allowance for a liquidity premium assumption at year end 2008 of 150bp over swaps. [REDACTED]<sup>5</sup>

[REDACTED]<sup>5</sup>

We argue that, once profits belong to the shareholders only, they will invest in appropriate assets offering the highest available yield, and there is no reason to assume that their approach will be different for one annuity portfolio as compared with another.

***We have therefore increased the inherited estate to allow for the PVFP on non-profit annuity business determined using gilts plus 150 basis points.***

### **4.06 Other liabilities**

There are various other aggregate liabilities which are calculated such as liabilities for future expenses not charged to asset shares and provisions for contingency risk which are calculated.

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<sup>5</sup> Certain information in this appendix has been redacted (ie blanked out). This has been a requirement of Aviva, in order to prevent the public disclosure of information which Aviva believes is commercially sensitive. In some cases figures or words which are not deemed by Aviva to be commercially sensitive have been redacted in order to prevent the reader from deriving the nature of the information which Aviva deems to be commercially sensitive. The policyholder advocate does not agree that this information is commercially sensitive and believes that the redactions are inappropriate and unnecessary.

We have reviewed these liabilities and made adjustments for prudence where we believe necessary. These are covered in section 5 below.

## **5.00 KPMG’s best estimate of the size of the inherited estates**

This section sets out the detail of our proposed adjustments to determine a more appropriate value for the inherited estate for the starting position for the projections of possible future experience be used to determine the benefits which might be forgone by electing policyholders. We also respond here to Aviva’s comments on our adjustments as set out in their “Size of inherited estates” appendix 35 A.

## 5.01 The adjusted value of the inherited estate

The table<sup>6</sup> below summarises the published value of the inherited estate and the changes we proposed at the half year and the changes we are proposing for the year end:

**Table 5.1: Adjusting the combined inherited estate to 30 June 2008 and 31 December 2008**

Item (£millions)	June 2008	December 2008
Published value of the inherited estate	2,115	1,529
Estimated post year end adjustment	0	41
Total value of published inherited estate	0	1,570
Add back 2007 new business subsidy	■	■
Deduct pension scheme deficit	-8	0
Convert Mortgage Endowment Promise reserve to swaps	20	0
Adjust mortgage endowment mis-selling reserve	20	10
Adjust non-profit annuity value of in-force business (VIF)	■	■
Adjust UWP VIF	20	0
Adjust with-profits benefit reserve (WPBR)	17	0
Convert guaranteed liabilities to swaps	103	-30
Add back assurance mortality assumptions	45	0
Add back contingency prudence	75	33
Add back heritage expenses	29	0
Adjust Persistency assumptions to fully realistic	■	■
<b>Total adjustments</b>	<b>517</b>	<b>177</b>
<b>Revised inherited estate at half year 2008</b>	<b>2632</b>	<b>1,747</b>

*Source: KPMG Analysis*

## 5.02 Adjustments made

### Estimated post year end adjustment

We note here that there is a process followed by Aviva, following the finalisation of results, which makes post year end adjustments to reflect items which were not available at the time

<sup>6</sup> Aviva has required that certain figures in the table be blanked out on the basis that the figures for the 2007 new business subsidy are commercially sensitive. If only the 2007 new business subsidy figures were blanked, it would still be possible to derive them from the table. Accordingly, other figures in the table have also been blanked out even though Aviva does not claim that they are of themselves commercially sensitive. The policyholder advocate believes the 2007 new business subsidy figures are not commercially sensitive and that they should be disclosed

of publication, but which if they had been available would have impacted the published figures. At the date of finalising the figures for the purposes of the policyholder advocate's calculations, the total of all the adjustments was £41m addition to the estate (We are aware that this has since been updated.) The policyholder advocate has therefore used an inherited estate value of £1,529m + £41m = £1,570m as at 31 December 2008 in her figures. The up-to-date post year end adjustments will be allowed for in the calculation of the inherited estate for the purposes of determining the aggregate amount of the PIP.

### **2007 new business subsidy**

The figure was agreed by Aviva and is in respect of expenses incurred and guarantees given on the sale of new business in 2007, which will not be recovered from the asset shares of this business. We note that Aviva updated the 2007 figure to allow for investment returns achieved in 2008.

### **Pension Scheme Deficit**

In 2006, Aviva estimated that there is an £8m deficit in the pension scheme arising in respect of service prior to the effective date of the MSA (for which CGNU Life and CULAC are liable). This figure was not updated and it is felt that the figure is now both too out-of-date and too immaterial to make any allowance for at 31 December 2008.

### **Mortgage Endowment Promise**

For the 2006 RBS, we worked with Aviva to establish the extent of the prudence in this reserve. At the end of 2007, Aviva improved the calculation to allow for the correct starting shortfalls and the impact of the special distribution, and so the key area of prudence was in the discount rate being assumed (gilts plus ten), and an estimate was made to assess the impact of changing this assumption to swap yields.

At the end of 2008, the relationship between the gilt and swap curve meant that prudence inherent in the half year figures was no longer relevant.

### **Mortgage endowment mis-selling reserve**

We understand that Aviva has reviewed its assumptions around time-barring (the period within which policyholders can ask for their policy to be reviewed), and it has now assumed that claims could extend out till 2015. The amount of the reserve held at 30 June 2008 was highly judgmental, since it could not be based on recent claims as these have been small. We added back a high level 30 per cent of this reserve to allow for inherent uncertainty and prudence. This 30 per cent corresponds to the £20 million at the half year. At the year end the full reserve was reduced to £32 million and the year end adjustment reflects this reduction in reserve.

### **Value of the non-profit business of the funds**

As already discussed, at the half year the adjustment reflected an estimate of a move from using a discount rate of gilts plus ten basis points to swap yields, and this was on all the non-profit business. At the year end, due to the relationship between the gilt and swap curve, the impact on the non-annuity business was immaterial.

For the year end, the RBS uses a discount rate of gilts plus 110 basis points for the annuity business, and Aviva has informed us that the move from gilts plus ten to gilts plus 110 increased the estate by [REDACTED]<sup>7</sup>. For MCEV, the annuities written by Aviva Annuity UK Limited incorporated a liquidity premium assumption at year end 2008 of around 150 basis points over swaps.

We have used these figures to derive an adjustment to reflect the fact that Aviva could use a liquidity premium of around 175 basis points over gilts for their annuity business which added a further [REDACTED]<sup>7</sup> to the estate. Aviva has since provided us with a more accurate figure for the effect of the difference between the yields on gilts and swaps taking the term structure of the annuity business into account and this would suggest that the above figure may be

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<sup>7</sup> Certain information in this appendix has been redacted (ie blanked out). This has been a requirement of Aviva, in order to prevent the public disclosure of information which Aviva believes is commercially sensitive. In some cases figures or words which are not deemed by Aviva to be commercially sensitive have been redacted in order to prevent the reader from deriving the nature of the information which Aviva deems to be commercially sensitive. The policyholder advocate does not agree that this information is commercially sensitive and believes that the redactions are inappropriate and unnecessary.

overestimated by around █████<sup>8</sup> to █████<sup>8</sup>. We would not however make any retrospective adjustment to our figure because we could offset this with the margins allowed for in the discount rate applied to the margins projected to emerge on this business. In addition we have seen other companies adopting yields in excess of those available on gilts which are higher than those assumed above.

### **UWP VIF**

We calculated a figure for the 2006 data based on assumptions from Aviva. We were not able to get any more up-to-date information and as the 2006 adjustment was relatively small for mid 2008 we retained the original figure of £20m to allow for the move to a discount rate based upon yields of swaps at the 2008 half year. For the 2008 year end, Aviva has informed us that the effect of moving the discount rate from gilts plus ten to swaps on this business was immaterial and so we made no allowance subject to the materiality being confirmed. We were later informed that the difference was of the order of £2m and we have therefore not made any adjustment for this.

### **With profits benefit reserve**

The with-profits benefit reserve for some products is calculated using a methodology which projects expected payouts into the future, rather than using asset shares. These products are comprised mainly of conventional with-profits whole life and paid up policies. The whole life policies are likely to have been in force for a relatively long time. Paid up policies can have a variety of outstanding terms.

An estimate of the move to swaps was made at the half year, but we have since been informed that any change in the discount rate is likely to be negated by a change in assumed bonus rates and so no adjustment was made at the year end.

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<sup>8</sup> Certain information in this appendix has been redacted (ie blanked out). This has been a requirement of Aviva, in order to prevent the public disclosure of information which Aviva believes is commercially sensitive. In some cases figures or words which are not deemed by Aviva to be commercially sensitive have been redacted in order to prevent the reader from deriving the nature of the information which Aviva deems to be commercially sensitive. The policyholder advocate does not agree that this information is commercially sensitive and believes that the redactions are inappropriate and unnecessary.

### **Cost of guarantees**

The adjustments made are estimates of moving the risk-free rate from gilts plus ten basis points to swaps for calculating the stochastically generated cost of guarantees. Swaps are used both by companies when determining their market consistent embedded values and by investment banks to calculate market traded options. Usually, swaps yields are higher than gilt yields plus ten, but the year end 2008 showed a very unusual relationship between the two rates, with swaps being lower than gilts at longer durations. The half year adjustment served to increase the value of the estate, but at the year end a small reduction was made. Although we could argue that the market is unusual at end 2008 and that no adjustment should be made, this argument would have appeared biased and a small negative adjustment (which serves to reduce the inherited estate) was made. The figure was provided by Aviva.

### **Assurance mortality**

On reviewing the change in the amount of the inherited estate at the 2008 half year, we noted that assumed assurance mortality rates had been increased, which had the effect of increasing liabilities and reducing the inherited estates. Since this change was not based on the actual mortality experience of CGNU Life or CULAC, we made an adjustment to negate the majority of the resulting decrease in the inherited estates. At the year end, the assumed increase that had been taken was reversed, and so our adjustment was removed.

### **Other long term liabilities**

At the half year 2008, there was a £100m reserve for unknowns. We believe that the majority of this will not be required to meet additional liabilities. We added back 75% of this reserve (equals £75m) at the half year. The £75m was based on taking 50% of the reserve as at the end of 2007 plus 100% of the additional allowance set up at the half year. At the year end 2008, the total reserve had reduced to £33m. We have added all of this back as we believe that the majority of this will not be required to meet additional liabilities.

A provision for expenses to update the administration system for all business was set up at the half year (£19m for with-profits business and £10m for unit linked business). We added the full provision back (£29m) at the 2008 half year. However, at the year end, we were told that most of these expenses incurred in respect of the administration systems for with-profits

policies will be charged to asset shares and an allowance is made for these in ‘planned reductions’, which increases the inherited estate, broadly offsetting the reduction due to the liability set up. Also, the total provision for expenses to update the administration system solely in respect of non-profit business remained at £10m at the end of 2008, and at the 2008 year end, an allowance was made for the reduction in expenses in the value of this non-profit business which also broadly offset the reserve. We have not therefore made an adjustment at the year end.

### **Persistency assumptions**

We have made an adjustment for the following:

- differences in the persistency assumptions for business to which GAOs do not apply which was adopted for MCEV purposes compared to the corresponding assumptions adopted for RBS purposes;
- approximations made due to a lack of data.

## **6.00 Size of the inherited estates for use in the PIP calculations**

In response to the continued market volatility, the negotiated offer has been restructured so that the inherited estate valuation can be based on the size of the inherited estate close to the Effective Date.

### **6.01 Valuation of the inherited estate for calculation of the PIP Payment**

The valuation of the inherited estate on which payment of the PIP is made to policyholders who elect to accept the offer will be calculated using an unweighted average valuation of the CGNU Life and CULAC inherited estates across three consecutive months prior to the effective date (as detailed in the Actuarial Function Holder’s report).

The values of the combined inherited estates of the CGNU Life and CULAC With-Profits Funds will be determined using the process adopted for interim RBS reporting as follows:

- the three values will be derived from the most recent “hard close” valuation which precedes (or falls on) the earliest of the three consecutive valuation dates. The

“hard close” valuation will represent a full valuation based on the in force policy data, accounting data and asset values on the date of such a valuation. Hard close valuations are undertaken as at 31 May, 30 September and 31 December in each calendar year;

- the inherited estates will be calculated as the excess of the realistic value of the assets over the realistic liabilities, consistent with the principles required to be used in Form 19 of the most recently prepared FSA Returns and using economic assumptions based on financial conditions on the date of the hard close;
- the three valuations of the combined inherited estates above will be obtained from the hard close valuation using a roll-forward approach where the values of the assets and asset shares at the date of the hard close are rolled forward by accumulating those values using suitable investment returns. The guarantee costs (including other future policy related liabilities) are revalued so as to allow for the rolled forward asset shares and the risk free rates and volatility assumptions at the relevant monthly valuation date. No allowance is made for policy movements (consisting of new business and claims) between the hard close date and the relevant monthly valuation date. The non-economic assumptions used will be the same as those used for the purpose of the “hard close” valuation.

If the Effective Date is 1 October 2009, the RBS will be rolled forward from 31 May 2009 to 30 June 2009, 31 July 2009 and 28 August 2009. The average of the three rolled forward figures calculated at those dates for the inherited estate will be increased by two months interest using 2-month London Interbank Offered rate (LIBOR) applying on the date as at which the middle of the three inherited estate values is determined in order to calculate the “Reattribution Estate”. The incentive payments made to holders of Elected Policies will depend upon the value of the Reattribution Estate.

The company’s external auditors will conduct a reasonable assurance review of the “hard close” valuation. This review will be more rigorous than the normal review performed for

half year interim reporting purposes. The roll-forward calculations used for the purpose of determining the Estate Value will be reviewed by the external auditors.

We have considered the approach proposed and, provided that no unjustified changes to the methodology or assumptions are made between the 2008 year end and the “hard close”, and provided that any changes we would expect to see, for example due to changes in the economic environment or equity backing ratio are made, we are comfortable with the approach. Our review of the assumptions and methodologies used in Aviva’s calculation of the Reattribution Estate, compared with those used for the RBS figures for December 2008 will be detailed in our supplementary report which will be published on the policyholder advocate's web-site in due course.

If the Effective Date is 1 October 2009, then for the purpose of allocating the inherited estate between the OWPSF and RIEESA, the inherited estate will be calculated using a “hard close” valuation at 30 September 2009. We do not disagree with this approach.

## **7.00 Annex: General background: the structure of the RBS**

To help interpret the results set out above, as well as our findings in Section 5 above, we have set out in this section an overview of the conceptual framework under which the RBS is calculated for FSA solvency purposes.

### **The RBS framework**

The FSA has adopted a two-pillar framework under which firms are required to demonstrate solvency. For solvency purposes companies are expected to hold sufficient capital to ensure solvency under whichever of these two calculations is the more onerous. The Pillar 1 results are available to the general public and published in a standardised set of annual returns, and it is these figures which drive the value of the inherited estate. The Pillar 2 results by contrast are kept confidential between the company and the FSA. Pillar 2 sets out how the company should hold sufficient capital (the ICA) to be able to remain solvent in extreme scenarios and therefore it is likely that the additional capital over and above the Pillar 1 capital would be released over time.

The focus here is on the published Pillar 1 figures and the associated size of the inherited estate.

Under the FSA rules, large with-profits offices are required to carry out their Pillar 1 valuations using the “twin peaks” approach.

The first peak, sometimes referred to as Peak 1 or the Regulatory Peak, prescribes in detail a conservative methodology for valuing the fund’s assets and its guaranteed liabilities. The key points to note are that the assumptions are prudent (they incorporate what is termed prudential margins), and for with-profits business they value only the guarantees attaching to the with-profits contracts and make no allowance for terminal bonus or other non guaranteed bonuses which might be allocated to policies. The calculation is usually performed prospectively by taking the present value of the expected future guaranteed payouts. The second peak, referred to as Peak 2 or the Realistic Peak, allows firms more leeway to tailor their calculations to fit their own individual circumstances. For example, firms are able to take credit for the

expected future profits on non-profit business they have written in the fund, and they can reflect in their liabilities for options and guarantees their discretion to alter future bonus rates, as well as any other actions that management may need to take to ensure the continued solvency of the fund. To balance this flexibility, firms must however undertake a far more objective and potentially onerous assessment of their guarantees, and they must also take into account any non-guaranteed bonuses expected to be payable. This ability to reflect the specific management practices of the fund, along with the allowance for all expected future bonuses, including terminal bonuses is the reason for the term “realistic.”

For realistic reporters under Peak 2, the liability is based on asset shares (explained in more detail below), which includes allowance for accrued terminal bonus. The guarantees of the fund need to be valued on a prospective, market-consistent basis allowing for future guaranteed bonuses. Theoretically, this requires companies to identify a portfolio of market traded assets and derivatives which could be used to replicate (or hedge) their guarantees. The calculations are often complicated and can take a considerable amount of time and computing resources to carry out. Their key feature is that they reference the prices of traded securities reducing the discretion that the firm has to set its own economic assumptions. Hence the approach also reduces the subjectivity of the valuation basis. The cost of the replicating (or hedging) portfolio is taken to be the same as the cost of guarantees. Note that in practice it is not usually possible to find a suitable set of tradable assets to use in valuing the liabilities and so complex stochastic models are developed which take market-implied volatilities as one of the parameter inputs. For example, this may involve projecting forward thousands of different economic scenarios and modelling what happens to the policyholder guarantees and asset shares in these scenarios. In every scenario where the guarantees at the “end” of each policy are higher than the asset share, this is a cost over and above the asset share. The average of all present values of these costs is taken and this forms part of the liabilities in the RBS.

One of the key differences between the Peak 1 and Peak 2 approach is that for Peak 2 some of the value of any margins within the liabilities held for non-profit business is released and forms an additional asset on the balance sheet. .

The Peak 2 results are reported on Form 19 of the annual FSA solvency return. This is sometimes referred to as the RBS. The RBS also shows the effect of a certain series of stress tests, this being known as the risk capital margin (RCM). A fund needs to have sufficient working capital (that is, an excess of assets over liabilities) to cover its RCM. It is worth noting therefore that this balance sheet is still a method used to demonstrate solvency. As such, where there are areas in the valuation basis and method that require judgment the approach usually taken is likely to be conservative understating the value of the inherited estate calculated.

### **The components of the realistic balance sheet**

Like all balance sheets, the RBS is a snapshot of the firm's assets and liabilities at a specific date. As the primary purpose of this balance sheet is to demonstrate solvency, it will be important for firms to show that their assets exceed their liabilities by a reasonable margin, and that their liabilities are calculated in such a way as to ensure they would meet policyholder benefits as they fall due. Since there is a level of judgment in setting the future assumptions, and in some cases there may be areas where approximations are made, then firms complying with the FSA regulations would usually want to ensure that their assumptions and methodologies err on the prudent side of best estimate.

The FSA defines the difference between the realistic assets and the realistic liabilities as the working capital of the fund. We note that this is synonymous with Aviva's definition of the inherited estate. As a result any prudence in the valuation basis and methodology would be expected to reduce the estimate of the inherited estate.

### **The realistic value of the assets of the fund**

In the table below we have set out a breakdown of the calculation of the realistic assets of the fund. Each item corresponds to a specific line on Form 19 of the FSA returns. The table also shows the impact that each item has on the size of the inherited estate. For example, where something has a positive impact a larger value will increase the size of the inherited estate. By contrast increases to items with a negative impact will reduce the value of the inherited estate. As a result, prudence would tend to understate those items with a positive impact while overstating those with a negative impact.

**Table 7.1: Illustration of the impact of asset holdings on the inherited estate**

Form 19 reference	Description	Impact on the estate
L11	Assets available to back with-profits liabilities	Positive
L12	Allowance for implicit items or “hidden margins”	Negative
L13	The value of any life insurance subsidiaries on a regulatory basis	Negative
L21	Admissible assets exceeding percentage limits	Positive
L22	The present value of future profits (PVFP) on non-profit business	Positive
L23	Market value of derivatives	Positive
L24	Value to bring line 3 onto a realistic basis for life subsidiaries	Positive
L25	Amounts of prepayments from the fund	Positive
L27	Any other support capital (with FSA prior agreement)	Positive
	Total (L11 + L21 + L22 + L23 + L24 + L25 + L27 – (L12 + L13))	Positive

Source: KPMG Analysis

Note:

- The Form 19 reference shown above is the relevant row within the published FSA Form 19. The description is our summary of what is shown in each of the lines in Form 19.
- RBSs are focused only on with-profits business. To calculate the assets available to back with-profit liabilities the value of the non-profit mathematical reserves together with any solvency capital requirements must first be deducted from the total assets of the fund. This item gives item L11 in the above table.
- We have shown each item in the asset calculation for completeness. The line above which is of particular interest to the reattribution of the inherited estates is L22 and this is covered further in sections 3 and 4.

### **The realistic value of the liabilities of the fund**

The table below sets out the calculation of the realistic liabilities of the fund. As before, each item corresponds to a specific line on Form 19. Again we have also tried to indicate what impact an increase or decrease in these items would have on the size of the inherited estate – increases to items with a positive impact will increase the size of the inherited estate while increases to items with a negative impact will act to reduce the inherited estate. Here, prudence will also tend to overstate those items with a negative impact. While we have

shown each item for completeness, neither CGNU Life nor CULAC have any items in their published inherited estate which have a “positive” impact on the size of the inherited estate.

**Table 7.2: Illustration of the impact of liabilities on the inherited estate**

Form 19 reference	Description	Impact on the Estate
L31	Asset shares	Negative
L32	Past surpluses to be added onto asset shares in future	Negative
L33	Past deficits to be deducted from asset shares in future	Positive
L34	Planned enhancements to asset shares	Negative
L35	Present value of charges for guarantees and smoothing	Positive
L36	Present value of any other planned charges	Positive
L41	Present value of the cost of contractual guarantees	Negative
L42	Present value of any non-contractual commitments	Negative
L43	Present value of the cost of financial options	Negative
L44	Present value of the cost of smoothing	Negative
L45	Financing costs	Negative
L46	Other liabilities to treat customers fairly	Negative
L47	Other long term insurance liabilities	Negative
L51	Current liabilities	Negative
	<i>Total (L31 +L32 +L34 +L41 + L42 +L43 + L44 + L45 + L46 + L47+L51 – (L33 + L35 + L36))</i>	

*Source: KPMG Analysis*

Note:

The Form 19 reference shown above is the relevant row within the published FSA Form 19.

The description is our summary of what is shown in each of the lines in Form 19.

- L31: The asset shares are the main part of the liabilities. They are effectively the premiums rolled up with investment returns less the cost of life cover and other items which may include:
  - Past miscellaneous surpluses / deficits (e.g. profits from non-profit business or surrenders)
  - Past charges for guarantees

- Tax on shareholder transfers<sup>9</sup>
- Development costs
- Full expenses or charges to asset shares
- L32&33: Past surplus (or deficit) planned to be attributed to the asset shares. These refer to past miscellaneous surpluses or deficits which will be attributed to asset shares and have not already been permanently credited to asset shares.
- L34: Planned enhancements to asset shares include future bonus entitlements which have already been decided upon or any payments planned which are over and above the asset shares. For Aviva this includes the PRD.
- L35: Charges for guarantees and smoothing refers to the value of any charges the company expects to deduct from asset shares going forward.
- L36: the value of other planned charges refers to any other charges the company plans to deduct from the asset shares which are not included in L35.
- L41: The cost of contractual guarantees might allow for:
  - (for conventional with-profits contracts) guaranteed sums assured and bonuses on death, maturity or retirement
  - (for accumulating with-profits contracts) guarantees at a point in time or guaranteed minimum bonus rates
  - Management and policyholder actions
  - Market Value Adjustment (MVA) free dates
- L42: Non-contractual commitments refer to the obligations of the fund under the Treating Customers Fairly (TCF) regulations. They might include:
  - Statements by the firm regarding the ability of policies to cover defined amounts such as the repayment of a mortgage
  - Statements by the firm regarding regular withdrawals from a policy being without penalty

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<sup>9</sup> The roll-up here is intended to provide a generic description of the process. We note at this point that not every cashflow will necessarily be appropriate for every fund. For example, the practice in CGNU and CULAC has been to deduct tax on shareholder transfers from the estate and not the asset shares.

- L43: There are two key types of financial options:
  - Options to convert policies funding for cash to annuities on guaranteed terms (often referred to as a guaranteed annuity option or GAO)
  - Options to convert policies funding for annuity to cash on guaranteed terms, i.e. a product which guarantees an annuity can be converted on retirement to cash on terms which do not vary (often referred to as a guaranteed cash option or GCO)
- L44: The cost of smoothing may be positive or negative and could allow for management actions. The future smoothing costs are usually valued stochastically and capture instances where the company expects that the claims paid will vary from the asset share (unless the guarantees are higher, in which case it is measured against the guarantee).
- L45: Financing costs include reinsurance and non-reinsurance financing arrangements such as contingent loans, securitisations and any other arrangements giving rise to charges on future surpluses.
- L46: This covers any other areas where there are liabilities in relation to treating customers fairly.
- L47: Other long term insurance liabilities refer to any other fund liabilities not included in the asset shares or cost of guarantees. Typically these include:
  - Pensions and other mis-selling reserves
  - Provisions for tax
  - Provisions for future shareholder transfers
- L51: The current liabilities reported on the balance sheet should be the firm's best estimate provision and include tax and any other costs arising either in respect of excess admissible assets or on the recognition of future shareholder transfers.