

Appendix 37B

Valuation of the Reattributed 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

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1.00 Introduction

This appendix has been prepared by LECG Ltd. for the policyholder advocate, and is a response to Aviva's appendix on the same topic. While care has been taken to explain the technical terms and concepts contained in this appendix, the complex issues involved will be better understood by readers with some familiarity of the concepts involved.

A specific issue that arises in a reattribution is that, because of the FSA rule that allows inherited estate capital to be used to support new with-profits business, the estate that would otherwise go to future policyholders may instead be transferred to shareholders. The FSA has said that in a reattribution, compensation to eligible policyholders for giving up their rights to future special distributions from the inherited estate should include payment for any estate that, without a reattribution, would have been distributed to future policyholders. The policyholder advocate and her advisers have therefore estimated the 'residual value' of future policyholders' share of the inherited estates, which represents the portion of the inherited estate that may have been distributed to future policyholders, less relevant costs and risks associated with the reattribution.

This appendix introduces the approach and considerations taken into account by LECG and the policyholder advocate when valuing the residual inherited estate in the context of the proposed reattribution of the CGNU Life and CULAC funds. In calculating the residual value of the CGNU Life and CULAC inherited estates for the purposes of the reattribution, the policyholder advocate has agreed with Aviva that it would be appropriate to deduct amounts from the value of the inherited estates estimated by KPMG, to reflect costs and risks that are currently charged to the inherited estates under current FSA rules and which, following the reattribution, will instead be borne by shareholders. Allowance also needs to be made for the one-off costs associated with the reattribution. To assess the Aviva offer, LECG has considered it against what eligible policyholders and shareholders might have expected to receive without a reattribution, and then taken into account the costs, risks and other changes in cash flows that result from the reattribution. However, the assumptions made by the policyholder advocate about the appropriate deductions to reflect the costs and risks assumed

by shareholders, or benefits forgone by shareholders, may not be the same as those made by Aviva in its own calculations.

The policyholder advocate's approach to valuing the inherited estates is set out in Section 2.

Based on this approach to valuing the inherited estates, the considerations taken into account by LECG and the policyholder advocate when estimating the residual value of the inherited estates are discussed in Section 3.. It is this residual value of the inherited estates which, in line with FSA guidance, should be shared between eligible policyholders and shareholders in Aviva's proposed reattribution offer to CGNU Life and CULAC eligible policyholders.

The content of this appendix is based on a series of papers by third party advisers to the policyholder advocate, as well as on LECG's own approach to the valuation. The analysis in this appendix builds on *Appendix 35: Size of the Inherited Estates*, which sets out KPMG's estimate of the total size of the inherited estates at 31 December 2008

2.00 Approach to valuing the inherited estates

In simple terms, the reattribution transaction consists of a one-off payment from Aviva to individual policyholders in exchange for the transfer of their interest in potential future special distributions of excess surplus from the inherited estates to a sub-fund owned by the company. In other words, to the extent that eligible policyholders accept Aviva's PIP offer, the assets of the existing 90/10 inherited estates which represent the interests of the electing policyholders will be transferred to a 0/100 fund in which the ultimate interest is held exclusively for the benefit of the company. The remainder of the inherited estates' assets, i.e. the proportion associated with the interests of non-electing policyholders, will be transferred to a new 90/10 fund intended to preserve the position that non-electors' would have had in the absence of the reattribution.

Conceptually, the reattribution transaction is similar to a takeover offer. In a takeover, shareholders are offered a consideration by the acquirer in exchange for giving up their shares, which represent a claim on the productive assets of the target. Such an offer is similar in nature to that made by shareholders to policyholders in the context of a reattribution.

In practice, however, the reattribution offer is quite distinct from a takeover because Aviva is not offering to purchase a business productive enterprise or real assets that have no established market price. Rather, it is purchasing a collection of financial assets, such as equities, bonds and property interests, many of which have transparent market values. Aviva's best estimate of the average pre-tax rate of return on the assets of the inherited estates is 6.60%, equivalent to 6.15% post-tax. The value of the inherited estates' assets to Aviva and its shareholders should only differ from their fair market value if it can be shown that Aviva's ownership of policyholders' interest in those assets gives rise to a different set of future cash flows than would accrue to a typical "market" investor, in other words, a different rate of return from the market. It should also be noted that, unlike in a takeover offer, there can only be one possible buyer of the inherited estates of the with-profits funds.

In standard financial theory the price of an asset to an investor is a function of two factors:

- the after-tax income and terminal capital value the asset is expected to generate; and
- the investor's required after-tax return, which depends on the risk-free rate of interest plus a margin that reflects the risk associated with the asset's cash flows.¹

In general, the value of an asset is positively associated with the magnitude of the cash flows it is expected to generate and inversely related to the risks and taxes associated with those cash flows. Professor Brealey's² paper, *Criterion for judging Aviva's offer for the inherited estate*, attached as Annexe B, considers these aspects of the reattribution and draws the following conclusions:

- in a competitive market, the traded prices of securities (whether individually or as part of a portfolio) reflect the market's consensus opinion of the securities'

¹ Financial theory most commonly uses the variance or standard deviation of the cash flows as the measure of risk. In other words, an asset that in any given year has a 50:50 chance of generating a cash flow of £100 or a cash flow of £0 is considered riskier than one that offers a certain cash flow of £50.

² Emeritus Professor of Finance at The London Business School.

value and such an opinion represents the ‘best estimate’ value of those securities at any given point in time;

- the market price is jointly determined by the asset’s expected cash flows and the investor’s required rate of return;
- companies, including financial institutions, may invest in a number of activities or assets with different risks and rates of return. Their average cost of capital is equal to the overall required return on those investments; and
- it is the risk associated with an individual asset, rather than the company’s average cost of capital, which should be used to determine the present value of that asset’s cash flows (and so its price). In other words, it is the market’s cost of capital that should be used to discount the cash flows of an asset, rather than the cost of capital of the company or individual investing in the asset. In this case it is the expected return on the assets in the fund and not the company’s average cost of capital.

One of the primary purposes of the current inherited estates, and of the Reattributed Inherited Estate External Support Account (RIEESA) post-retribution, is to protect the security of policyholder benefits by providing a cushion against adverse investment experience. In the event, for instance, of a severe market downturn, the inherited estates or RIEESA can be called on to meet the cost of policyholder guarantees if the reserves provided within Aviva’s calculation of realistic liabilities prove inadequate. Such possibilities are referred to as “tail risks” because they lie in the “tail” of the expected distribution of potential outcomes. Aviva has undertaken a de-risking programme for the cost of policy guarantees that is intended to reduce the inherited estates’ exposure to risk in the event of such extreme outcomes. Nevertheless, it remains possible (if unlikely) that the inherited estates will be called upon to top up policies that are “under water” at the date of their maturity.

Professor Brealey has pointed out that if tail-event outcomes are expected to be symmetrically distributed, they will not affect the value of the securities held within the inherited estates’ value either way. In other words, there is no need to adjust the value of the inherited estates if

the probability of extreme loss is balanced by an equal probability of extreme gain. The policyholder advocate has been assured by Aviva that there is no asymmetry of expected outcomes for the assets backing the funds and has therefore concluded that no allowance need be made for tail risk.

In summary, the inherited estates are composed of a portfolio of financial assets, and thus the return that shareholders could expect from their investment is the expected rate of return of the assets. However, in order to provide a commercial return to shareholders, the value paid by Aviva for the inherited estates must be lower than the market value of those assets. The policyholder advocate believes that shareholders' valuation of that portfolio should be equal to the market value of those assets less any allowance for specific non-market risks, costs, and a value to reflect the likely tax benefits that keeping capital in the estate provides shareholders.³

2.01 Summary of deductions made by the policyholder advocate

Based on the approach outlined above, in calculating the value of the inherited estates for the purpose of the reattribution transaction, and in accordance with the guidance provided by the FSA on the application of its rules, the policyholder advocate has deducted amounts from the value of the inherited estates to reflect the estimated value of certain costs and risks that shareholders will bear or benefits forgone by them. The deductions have been made on the understanding that the financial impact of these costs, risks, or benefits forgone would be borne by the inherited estates themselves, absent a reattribution, but will instead be borne by shareholders following a reattribution. The policyholder advocate's analysis is based on the assumption that 100% of policyholders will vote in favour of the reattribution (in other words, the analysis assumes that all eligible policyholders accept their offered incentive payment).

To work out what the value of the potential future special distributions from the estates might be to eligible policyholders without a reattribution, the first exercise is to understand what the estates are permitted to be used for by the FSA. The FSA has confirmed that the estates can be used for various purposes which have the effect of eroding the value of the estates to

³ Tax payable by shareholders on income or releases from the inherited estates is discussed in more detail in section 3.06

eligible policyholders. Some of these allowances directly benefit shareholders whilst others directly benefit future policyholders (in the absence of a reattribution). There are also other items that are legitimate expenses of the funds which could be charged to asset shares, but traditionally have been charged to the estates and will continue to be charged to the RIEESA after the reattribution. These issues are discussed in more detail in *Appendix 39: The Impact of FSA Guidance on Policyholders*. Some of these permitted uses have already been taken into account in the regulatory valuation of the estate.

There are also a series of costs which are a direct result of the reattribution. When shareholders assess the benefits of the reattribution, they take into account the costs they will incur as a result of the transaction taking place. Such costs would not be incurred absent a reattribution, and the policyholder advocate recognises that it is appropriate to take them into account in evaluating Aviva's reattribution offer. Reattribution costs have therefore been deducted from the value of the estates.

All of these costs and charges reduce the residual value of the estates which is available to split between eligible policyholders and shareholders in a reattribution; for each item LECG has calculated their net present values and then deducted these values from the estates. The remainder of this appendix discusses all of the deductions made and their impact on the residual value of the inherited estates.

A summary of the deductions that the policyholder advocate has made to the value of the inherited estates is shown in Table 1 below and described in section 3.0. The table first displays the adjusted combined CGNU Life and CULAC estate value as estimated by KPMG in *Appendix 35: Size of the Inherited Estates*, before deducting the various costs and risks to determine the residual value of the estate which will be split between eligible policyholders

and shareholders in a reattribution. The summary is based on unadjusted estate values⁴ of £1,200 million (the lowest value at which the reattribution will proceed) and £1,570 million (the actual end-2008 value of the estate, consisting of the £1,529 million published figure plus a £41m post year-end adjustment) at 1 October 2009 and Aviva new business assumptions. Calculations for a range of estate values and the policyholder advocate's two alternative new business assumptions are contained in Annexe A. Full details on the deductions in respect of FSA guidance can be found in *Appendix 39: The Impact of FSA Guidance on Policyholders*.

⁴ LECG has modelled potential future special distributions based on KPMG's assessment of the inherited estates found in Appendix 35: *Size of the Inherited Estates*, which entails adjusting the inherited estates upwards by £177 million at 31 December 2008 (equivalent to £185 million at 1 October 2009, the Effective Date of the reattribution). However, the PIP is calculated on the Reattribution Estate as valued by Aviva during the months leading up to the Effective Date. The estate values quoted in this appendix therefore refer to the Reattribution Estate value, or the "unadjusted estate value" upon which the PIP is calculated, while the special distributions to which the PIP offer is compared have been calculated after adding KPMG's advised adjustments. For example, at a Reattribution Estate of £1,200 million the aggregate PIP offer is £500 million; when calculating special distributions for comparison against that PIP offer, LECG has added £185 million at 1 October 2009, for a total estate value of £1,385 million at the Effective Date.

Table 1 Summary of policyholder advocate deductions, unadjusted estates of £1,200 million and £1,570 million, Aviva new business assumptions, assuming 100% take-up, values at 1 October 2009*

Item	Value (£m)		Explanation
Value of the Inherited Estate	1,200	1,570	Aviva's end-2008 published value of £1,529 million plus a £41 million post year-end adjustment.
KPMG adjustments rolled forward to 1 October 2009	185	185	See chapter 23. KPMG's year-end 2008 adjustments of £177 million are rolled forward at the fund rate to reach £185 million at 1 October 2009.
Adjusted inherited estate	1,385	1,755	
Existing business non-market risk	(31)	(31)	Deductions deemed appropriate by KPMG to reflect non-market risks (e.g. pricing errors, system errors, site disasters).
New business non-market risk	(21)	(21)	
Value available for distribution	1,333	1,703	
Lock-in transaction cost (at 3.5% of the PIP)	(18)	(25)	3.5% of the PIP, deducted to reflect an estimate of the cost of raising the equivalent amount of capital, as advised by Professor Brealey.
Frictional tax	(51)	(65)	3.7% of the adjusted inherited estate to reflect tax costs not captured in the calculation of the estate value; estimated by Aviva and applied to the inherited estate by KPMG.
Shareholder exit tax post-retribution @ 15%	(199)	(254)	15% of the 'value available for distribution', to cover tax payments for withdrawing capital from the estate, calculated by LECG.
Shareholder tax on new business	(15)	(15)	Estimate of value of shareholder tax on new business profits that would be paid by the estate in the absence of a retribution.
Project costs	(147)	(147)	Based on LECG's analysis of Aviva's project cost figures.
Shareholders' future distributions from whole estate	(130)	(167)	Estimated value of shareholders' 10% of future special distributions, calculated by LECG.
Eligible policyholders' expected future special distributions	(83)	(197)	Estimated value of eligible policyholders' share of policyholders' 90% of future special distributions, calculated by LECG.
Residual value after all interests, costs & allowances	690	834	Value to be split between eligible policyholders and shareholders in the retribution.

*Values are as at 1 October 2009 and have been rolled forward from 31 December 2008 at the fund rate where applicable.

3.00 Deductions made in the valuation of the reattributed estates

This section details the deductions made by LECG to determine the residual value of the reattributed estates, as outlined in Table 1 above.

The loss of value, cost and risks deducted from the inherited estates broadly fall into five categories:

- deductions for FSA guidance which allow the inherited estates to be used to cover costs which shareholders would normally have to bear. These are specifically considered in Appendix 35 and Appendix 39, and are included in the published value of the inherited estates;
- non-market risks which are not permitted to be charged to asset shares for existing policyholders, but have an expected real cost which will be borne by shareholders. Examples of such risks include pricing errors, system errors or site disasters, for which it is difficult, individually, to estimate accurately either their probability or their cost;
- transaction costs of raising new finance that could be used to substitute for any capital locked into the funds after the reattribution;
- tax impacts, arising from discounting of the inherited estates, shareholders' withdrawal of capital from the inherited estates, and corporation tax in respect of new business; and
- costs of the reattribution project, known as "Project Wagner costs".

Each of these items affects the residual value of the inherited estates and, therefore, the value of the aggregate PIP that Aviva is willing to offer to policyholders.

3.01 Deductions in respect of FSA guidance

There are a number of uses for the inherited estate permitted by the FSA under its regulations. The inherited estate incurs the cost of these uses prior to any distributions being made, meaning that they fall outside the normal 90:10 terms of the fund. Most of the benefits from these uses accrue to shareholders in addition to their 10 per cent of special distributions. Aviva makes deductions for these uses in its calculation of the value of the CGNU Life and CULAC inherited estates.

Since the FSA does not permit these costs to be charged to asset shares, the policyholder advocate does not believe the FSA should permit these costs to be charged to the estate. Following a reattribution, these costs will be charged to the reattributed inherited estate and the inherited estate of the Old WPSF. Shareholders will own the reattributed inherited estate and will therefore bear these costs themselves, as they will no longer be able to be paid out of the estate (in which case policyholders would ultimately bear 90 per cent of the costs).

As shareholders currently benefit from these uses of the inherited estate but will no longer do so after a reattribution, they will require compensation for these benefits that they are expected to lose, on the presumption that the current FSA rules will continue. LECG and the policyholder advocate have therefore taken Aviva's deductions into account, and have added back some amounts according to KPMG's adjustments for levels of prudence. These deductions are not discussed in detail in this appendix. Further details can be found in *Appendix 35: Size of the Inherited Estates* and *Appendix 39: The Impact of FSA Guidance on Policyholders*.

The policyholder advocate has challenged the FSA vigorously on its rules. The FSA has considered these challenges, but has confirmed that its current rules will not be changed in any significant way for the foreseeable future. However, the FSA said that the amount which would go to future policyholders without a reattribution should be shared with current policyholders as part of the firm's reattribution offer. The policyholder advocate has therefore assessed Aviva's aggregate PIP offer to determine the extent to which it exceeds the potential of the special distributions which eligible policyholders might expect to receive and thereby

shares with eligible policyholders the ‘residual value’ of the potential special distributions to future policyholders, in the absence of a reattribution.

3.02 Non-market risk on existing business

Non-market risks are risks – both within Aviva’s control and outside it – that are unrelated to the investment returns on the assets in which the funds are invested. Non-market risks within the control of the company include the risk that operational failings cause increased future expenses, or that future expenses (such as for investment projects) are higher than anticipated. Non-market risks outside the control of the company include factors such as taxation, legal, or regulatory risks.

With respect to non-market risk, the policyholder advocate and her advisers believe that it would only be appropriate to allow a deduction if:

- shareholders relieve policyholders of such risks and costs in full;
- the risks are not taken into account elsewhere (e.g. in discount rates);
- the risks are ones to which shareholders (as opposed to the estate) are not normally exposed; and
- the estate is exposed to the risk.

The policyholder advocate understands that certain non-market risks do indeed meet these four criteria, and would therefore erode the value of the estates to shareholders following a reattribution.

Based on information provided by Aviva in respect of the allowance for non-market risk allowed for in Aviva’s market consistent embedded value, KPMG’s view was that an appropriate deduction for non-market risk on existing business was £30 million as at 31 December 2008 (£31 million at 1 October 2009). This cost was originally calculated based on an annual percentage of the fund which resulted in a much higher figure. This approach, although not particularly detailed, is used by many companies in the industry. However, subsequent analysis of the total allowance for non-market risk in Aviva’s embedded value led

KPMG to revise the figure downwards. The figure assumed became immaterial in the context of the negotiations and a simple fixed figure of £30 million was assumed to be adequate by KPMG. This allowance has been spread over future years in line with existing business liabilities. After reattribution, the Scheme does not allow most forms of non-market risk to be charged to existing policyholders.

3.03 Non-market risk on new business

The policyholder advocate believes that after a reattribution, shareholders have every incentive to charge future policyholders for non-market risk, rather than bear it themselves. However the FSA permits, and has confirmed that it is content to continue to permit the cost of non-market risk to fall on the estates in the absence of a reattribution. This is a benefit that shareholders will no longer have following a reattribution. Accordingly, the policyholder advocate has deducted an amount for non-market risk on new, as well as existing business. The deduction made for non-market risk in respect of new business is £20 million as at 31 December 2008 (£21 million at 1 October 2009). This figure was calculated by KPMG based on a high level estimate of the additional length of time the funds would be at risk due to new business. The figure is far lower than Aviva's original estimates. It is taken to be fixed across all values of the inherited estates and across different assumptions as to the level of new with-profits business written by Aviva in the future.

3.04 Transaction costs

Aviva has said that shareholders should be compensated for a range of costs incurred as a result of shareholder-owned capital being "locked in" to the RIEESA following a reattribution. Professor Booth⁵ has reviewed Aviva's assumptions and calculations in respect of lock-in costs and has concluded that any charge for lock-in depends on the company being capital constrained. To the extent that Aviva is not capital constrained i.e. it has sufficient capital to carry out all its Net Present Value (NPV) positive projects, there is no lock-in cost as Aviva suffers no disadvantage from holding the capital inside the funds.

⁵ Professor of Insurance and Risk Management at the Sir John Cass Business School, City University.

In Professor Booth's view, if Aviva is capital constrained then the cost of locking-in the capital is the transaction cost of raising fresh, alternative capital to pay the PIP (or to fund other NPV-positive projects), a point echoed by Professor Franks⁶ in his comments on Professor Booth's note. Therefore, the cost of "lock-in" is the transaction cost of raising new finance that could be used to substitute for the capital locked into the funds, not the opportunity cost of forgoing new business opportunities. In standard financial theory, companies are assumed to pursue all projects that yield a positive risk adjusted return above their cost of capital. In principle, a company may raise capital internally (from retained earnings) or externally (from issuing debt or equity).

The policyholder advocate, therefore, has allowed a deduction from the inherited estates of 3.5% of the value of the aggregate PIP to reflect an estimate of the cost that Aviva might incur to raise project capital externally of a value equivalent to the PIP.⁷

3.05 Frictional tax

Frictional tax is a term used to describe tax payments which arise because funds remain in the long term business fund and different discount rates are used in the valuation of it. In the case of the CGNU Life and CULAC funds, frictional tax arises because the funds are projected by Aviva to earn an annual return of 6.60%, on average, but are discounted at a post-tax average rate of 6.15% (equivalent to 6.60% less 6.9% tax on investment returns). Aviva, however, will be required to pay tax of 6.9% on investment returns of 6.60% in the funds.

This effect is lost in the calculation of the size of the inherited estates because cash flows in the funds are discounted at a lower rate than the one earned and on which shareholders will have to pay tax. The present value of frictional tax that Aviva will have to pay was estimated by Aviva and KPMG applied this estimate to the adjusted inherited estates. Based on an adjusted combined estate value of £1,385 million at 1 October 2009 (an unadjusted estate value of £1,200 million plus £177 million in KPMG adjustments rolled forward to £185 million at 1 October 2009), the deduction for frictional tax would be £51 million on Aviva's new business assumptions, or £38 million on the policyholder advocate's lowest assumption

⁶ Professor of Finance at The London Business School.

⁷ As advised by Professor Brealey in his paper "*Issue Costs*", attached as Annex C to this appendix.

of a 15% annual decline in new business from 2011 onwards. At an adjusted estate value of £1,755 million (an unadjusted estate value of £1,570 million), the deductions are £65 million and £48 million, respectively. As discussed in 3.06 below, LECG has not added back a benefit for any potential tax shelter that the estate enjoys.

3.06 Tax payable by shareholders on income or releases from the inherited estate

Shareholders will assess their returns from the reattribution transaction, as they would from any other project, on an after-tax basis. The policyholder advocate has therefore agreed that, in calculating the residual value of the estates, a deduction needs to be made from the value of the estates to reflect the costs of taxation that shareholders may incur.

There are two potentially relevant rates of taxation Aviva may incur on the assets contained in the inherited estates in the event of a reattribution:

- a rate of 6.9% which is payable on the returns earned by the funds' assets while the assets remain held within the life funds; and
- a rate of between 15% and 17.5% that is charged on capital amounts when they are released from the RIEESA by shareholders.⁸

The Deloitte paper *Appendix 34: Tax Matters in relation to the Reattribution* considers in detail the tax position of the funds both before and after reattribution. Following a reattribution, a portion of the inherited estates will be transferred to the RIE, where it will be wholly-owned by shareholders in a long-term fund. Table 2 below summarises the tax treatment that Aviva may expect, with and without a reattribution, on assets of the inherited estates that are currently held within the long-term funds, assuming 100% of policyholders vote in favour of the reattribution.

⁸ The policyholder advocate's analysis, as advised by Deloitte, assumes a rate of 15%; Aviva's analysis assumes a rate of 17.5%.

Table 2 Policyholder advocate assessment of the tax treatment of assets, as advised by Deloitte

	Without a reattribution	With a reattribution
Assets remaining in the fund	Fund pays tax on the earnings from assets at a rate which depends on the assets and the proportion of life and pension business in that particular with-profit sub fund. The tax is borne by the asset share and the balance borne by the estate.	Fund pays tax on the earnings from assets at 6.9%, 100% borne by shareholders.
Assets distributed to shareholders from the funds	Currently, over the course of time, 10% of assets are distributed from the funds to shareholders in the ordinary course of business. If a distribution of assets were made to shareholders, however, an exit tax, the rate of which depends on the balance of the business at the time of the distribution, would be payable by the inherited estate.	Shareholders pay tax of around 15% on distributions of surplus capital to shareholders.
Assets owned by Aviva after release from the funds	Shareholders pay corporation tax at the standard rate, less any deductions for which Aviva is eligible.	Shareholders pay corporation tax at the standard rate, less any deductions for which Aviva is eligible.

As may be seen from the table, while the assets remain in the funds the funds are liable to pay tax on any earnings from the assets; the tax rate would depend on whether or not there had been a reattribution. Implicitly, most of this tax is currently paid by policyholders from the inherited estates but would be paid by shareholders following a reattribution. Following a reattribution, if Aviva withdraws assets from the funds, it becomes liable for an exit tax in the region of 15% of the assets' value.⁹ Once the assets have been released from the funds, however, there is no difference in their tax treatment, irrespective of whether there is a reattribution or not: Aviva will pay tax on them as it does on its other assets and the income and/or profits generated from them.

The key point to note in respect of the tax treatment of the inherited estates' assets is that income earned by Aviva on assets in the RIEESA incurs a lower rate of tax than income earned on its shareholders' funds; however assets transferred from its long term fund to its shareholders' fund will suffer a significant exit tax. In turn, that highlights a key issue

⁹ Aviva says that the exit tax would be 17.5%, rather than 15%.

following a reattribution, which is whether it would be disadvantageous, from a taxation perspective, for Aviva's shareholders to be required to retain assets in its long-term fund.

In their paper “*Tax rate on the value of the reattributed estate*” (attached as Annexe D), Professors Brealey and Franks have considered the principles underpinning the impact of taxation on the value that accrues to shareholders following a reattribution. The conclusions of the paper are that:

- Aviva itself suffers no tax disadvantage in relation to assets “locked up” in its long-term fund. In fact, at current rates the long term fund has the benefit of a relatively low rate of tax on investment income compared to the tax liability the assets would incur if held in shareholders’ funds, notwithstanding the exit tax which must be assumed eventually to be payable when assets are released from the funds. Therefore, it is more tax efficient for shareholders to keep capital in the fund; and
- shareholders’ decision to hold the securities in the estate or to release them into shareholders’ funds is unaffected by the existence of the exit tax as the present value of the tax is unaffected by the decision to hold them in the estate for some period of time or to distribute them today.¹⁰

It is recognised that the estate’s assets suffer the burden of the 15% exit tax on distribution to shareholders. So long as the assets are held within the funds, however, they attract the relatively low rate of 6.9% on any investment income that they generate.

In the view of Professors Brealey and Franks, Aviva could only fairly claim that the estate is tax-disadvantaged (i.e. suffering from “double taxation”) compared with other holders of the same securities if the estate earns a lower post-tax return on the securities than a holder of those securities who paid tax at the average rate for the market as a whole. In those circumstances, it could be argued that the estate is worth less to Aviva shareholders than its market value. The calculations in the Brealey and Franks paper suggest, however, that unless the marginal investor (or shareholder) has a very low rate of tax, retaining the assets in the

¹⁰ Assuming that the discount rate applied to the funds is equal to their expected growth rate.

long term fund is liable to produce a better ultimate return even after the exit tax is applied. That conclusion is supported by the analysis and calculations contained in *Appendix 34: Tax Matters in relation to the Reattribution*, which considers Aviva's specific tax position and the question of whether Aviva should retain the securities in the estate or not.

The only situation where shareholders would prefer the estate to be distributed immediately, therefore, would be one in which the shareholders pay a lower rate of tax on income than the 6.9% rate that the funds do. It seems unlikely that Aviva could maintain a long-run effective tax rate below 6.9% suggesting that shareholders will have a preference for holding the assets in the fund.

In light of the theory and evidence presented above, there would seem to be no good reason for Aviva (or its shareholders) to claim that retention of assets in the funds causes a tax disadvantage. In fact, based on the calculations provided in *Appendix 34: Tax Matters in relation to the Reattribution*, Deloitte estimates that the corporation tax on the reattributed estate investment returns in the event that the reattributed assets are removed from the AVLAP long term fund could be in the region of 23%. This tax replaces the lower frictional tax of 6.9% in effect suggesting there is a tax shelter benefit for Aviva by maintaining reattributed inherited estate assets in the AVLAP long term fund. However this effect is difficult to put a value on empirically and so LECG have not added back a value to the calculations to cover this potential benefit to shareholders. This does not mean that there is not a tax shelter benefit, but that it was not possible to justify the effect robustly enough in practice to merit including a value for it in the calculations.

The policyholder advocate has therefore chosen to reflect Aviva's tax position through an explicit reduction to the value of the estates that takes account only of the eventual payment of exit tax by shareholders on releases of capital from the RIE at a rate of 15%, since it is the net returns to shareholders that are relevant when assessing the reattribution offer. The value of the allowance for exit tax (based on an unadjusted estate of £1,200 million at 1 October 2009) amounts to between £199 million on Aviva's new business assumptions and £202 million on the policyholder advocate's lowest alternative assumption that new business

declines by 15%; at an unadjusted estate of £1,570 million, this allowance amounts to £254 million and £257 million, respectively.

3.07 Project costs

The FSA permits Aviva to take account of the costs of the reattribution in the value of the PIP it is willing to offer policyholders for their interest in the inherited estate. The FSA has advised that costs of the reattribution project (known internally by Aviva as “Project Wagner”) may be charged if they were incurred after 1 January 2005. LECG has analysed cost data relating to Project Wagner that has been supplied by Aviva. Broadly speaking, the cost data can be split into two categories – reattribution costs (including the cost of the Office of the Policyholder Advocate) and other costs that would be associated with any fund merger. In addition, LECG has analysed the cost data in two periods: the first from 1 January 2005 to the date of the appointment of the policyholder advocate on 21 November 2006, and the second from the date of the appointment of the policyholder advocate to the beginning of 2008.

Aviva takes all costs incurred since the outset of Project Wagner, and all projected costs, into account in determining the value of the reattribution to shareholders and, therefore, the quantum of the aggregate PIP that it is willing to offer to policyholders. All costs incurred by Aviva since 1 January 2005 are therefore deducted from Aviva’s calculation of the value that shareholders may expect to receive.

LECG has conducted an analysis of data provided by Aviva in February 2008 on the total estimated costs of Project Wagner. The policyholder advocate has only considered costs incurred after 1 January 2005 as allowable. Additionally, the policyholder advocate has not allowed costs related to merging the funds, as she believes the benefits of merging the funds accrue primarily to shareholders and, therefore, that shareholders should bear these costs. It would be possible to revisit and refine the assumptions used by LECG in its calculations should Aviva provide further data, such as the actual project spend for 2007, revised forecasts of project costs, or its business case papers for the merger.

Taking into account the above noted factors, the policyholder advocate has allowed £117.4 million of reattribution costs to be offset against the value of the inherited estate for the purpose of calculating its value in the context of a reattribution. Additionally, Aviva has advised it will incur a further £30m of reattribution costs as a result of shifting the reattribution date to 1 October 2009. Consequently, reattribution costs of £147.4 million have been deducted in the policyholder advocate’s analyses.

Table 3 Breakdown of costs attributable to the reattribution based on the policyholder advocate’s preferred allocation¹¹

Category	Costs pre 21 November 2006 (£m)	Costs post 21 November 2006 (£m)	Overall costs (£m)
Predominantly reattribution ¹²	■	■	147.4

Note: Rounded to the nearest £0.1m. Source: LECG assessment of Aviva data.

3.08 Shareholder tax in respect of new business

As previously noted, the FSA currently permits corporation tax to be paid by the inherited estate. As this is not already reflected in Aviva’s assessment of the value of the estate, a deduction has been made in recognition of shareholders’ corporation tax in respect of new business that would be paid by the estate absent a reattribution; this amounts to £14 million at 31 December 2008, under Aviva new business assumptions.

The cost of shareholder tax on existing business is deducted before the value of the estate is calculated. Therefore, the value of shareholder tax payments in respect of existing business is not taken into account in the deductions here, but is included in the impact of FSA guidance as described in *Appendix 39: The Impact of FSA guidance on Policyholders*.

¹¹ Aviva has required that these figures be blanked out on the basis that they are commercially sensitive. The policyholder advocate believes these figures are not commercially sensitive and should be disclosed.

¹² Aviva 15 February 2008 estimate for specific Policyholder Advocate Office costs is £■m. Aviva has required that this figure be blanked out on the basis that it is commercially sensitive. The policyholder advocate believes this figures is not commercially sensitive and should be disclosed.

3.09 Value of shareholder and policyholder potential future special distributions from the inherited estates

In addition to all of the deductions for risks, costs and allowances, the calculation of the residual estate of the potential future distributions that would be paid to future policyholders without a reattribution and which is available for division between eligible policyholders and shareholders in a reattribution needs to recognise the potential future special distributions that eligible policyholders and shareholders would, in any event, have obtained from the inherited estates without a reattribution. This issue is discussed more fully in *Appendix 40: Analysis of Potential Future Special Distributions for Policyholders and Shareholders*. The amounts are summarised below for unadjusted estate values of £1,200 million and £1,570 million at 1 October 2009, with details for all estate values shown in Annexe A.

Table 4 Present value of potential future distributions of excess surplus to eligible policyholders and shareholders at 1 October 2009, £1,200 million unadjusted estate, £ million

Scenario	Eligible policyholders	Shareholders
Aviva new with-profits business assumptions: +5% p.a.	83	130
Policyholder advocate alternative new with-profits business assumption: -5% p.a.	292	131
Policyholder advocate alternative new with-profits business assumption: -15% p.a.	431	132

Table 5 Present value of potential future distributions of excess surplus to eligible policyholders and shareholders at 1 October 2009, £1,570 million unadjusted estate, £ million

Scenario	Eligible policyholders	Shareholders
Aviva new with-profits business assumptions: +5% p.a.	197	167
Policyholder advocate alternative new with-profits business assumption: -5% p.a.	448	168
Policyholder advocate alternative new with-profits business assumption: -15% p.a.	605	168

4.00 Conclusion

In this paper, LECG has set out the approach and considerations taken into account by LECG and the policyholder advocate when estimating the residual value of the inherited estates. It is this residual value of the inherited estates which, in line with FSA guidance, should be shared between eligible policyholders and shareholders in Aviva's proposed reattribution offer to CGNU Life and CULAC eligible policyholders.

In summary, the inherited estates are composed of a portfolio of financial assets, and thus the return that shareholders could expect from their investment is the expected rate of return of the assets. However, in order to provide a commercial return to shareholders, the value paid by Aviva for the inherited estates must be lower than the market value of those assets. The policyholder advocate believes that shareholders' valuation of that portfolio should be equal to the market value of those assets less any allowance for specific non-market risks, costs, plus a value to reflect the likely tax benefits that keeping capital in the estate provides shareholders¹³.

Based on the evidence presented in this paper, and the approach laid out in Section 2, the policyholder advocate has elected to use the following parameters (all values are as at the proposed effective date of 1 October 2009) in determining the allowances for specific non-market risks, costs and tax borne by Aviva and so estimating the residual value of the CGNU Life and CULAC inherited estates:

- **a range of deductions to reflect the impact of FSA guidance**, which are considered in depth in *Appendix 39: The Impact of FSA Guidance on Policyholders*. A number of those deductions are already captured within Aviva's calculation of the inherited estates;
- **an allowance of £31 million for non-market risk on existing business plus £21 million for non-market risk on new business**. The FSA continues to permit the cost of non-market risk to be borne by the estates going forward,

¹³ As noted in Section 3.06, while there may be a tax shelter benefit to shareholders, it was not considered possible to justify the effect robustly enough in practice to merit including a value for it in the calculations.

and after a reattribution shareholders will lose the ability for the estates to pick up these costs, although they will be free to charge new policyholders, but not existing policyholders, for such costs. The latter is a shareholder benefit which will be lost, and the former is a cost that shareholders will have to bear, and so both have been deducted from the value of the estates;

- **an allowance of 3.5% of the aggregate PIP for an estimate of the transaction costs that might be incurred by shareholders if funding for the PIP was raised externally.** On the assumption that the Aviva group lacks sufficient internally generated funds to finance the reattribution and other projects which appear potentially profitable, shareholders would need to raise funds externally equivalent to the PIP, resulting in a cost that would not be incurred without a reattribution;
- **an allowance of up to 3.7% of the adjusted estate value for frictional taxation.** The policyholder advocate accepts that there are transaction costs not captured in the calculation of the size of the inherited estates as a function of the discount rates used to render future amounts into present value terms;
- **an allowance for the full value of tax on shareholder transfers being met by the estates.** The FSA has confirmed that it continues to view this as an allowable deduction from the inherited estates in the absence of a reattribution, and the policyholder advocate has therefore made allowance for the benefit that shareholders will lose after a reattribution in her calculations. The policyholder advocate has therefore allowed a deduction of between £199 million and £202 million for exit tax (based on an unadjusted estate of £1,200 million at 1 October 2009);
- **no allowance for perceived double taxation effects.** The policyholder advocate has concluded that there is no need to make any special allowance for potential double taxation effects identified by Aviva. In principle, such effects arise from holding the portfolio of assets inside the reattributed estate, attracting tax on earnings, prior to attracting tax upon their release to

shareholders. The policyholder advocate's view is that the life funds are the most favourable location for the assets of the inherited estates, suggesting that leaving the assets in the funds creates, rather than destroys, value for shareholders compared to alternative courses of action. Furthermore, the life fund is likely to receive a higher after-tax return on these securities than would be achieved by other groups of investors who are nevertheless content to hold them and trade them at the market price.

- **an allowance of between £11 million and £15 million for taxation in respect of new business written from the inherited estates;**
- **an allowance of £147m for allowable project costs.** LECG's analysis of Project Wagner costs has calculated that this amount of reattribution costs should be regarded as allowable and should be taken into account in the determination of benefits to shareholders;
- **an allowance to reflect the 10% of special distributions to shareholders and 90% of special distributions to eligible policyholders** that they would in any event expect to receive from the inherited estates.

The policyholder advocate has considered these costs, risks, eligible policyholder and shareholder benefits forgone and other changes in cash flows introduced by the reattribution in order to estimate the 'residual value' of the inherited estates. This residual value, which represents the portion of the inherited estates that may have been distributed to future policyholders (less these costs and risks), will be shared between eligible policyholders and shareholders in a reattribution. The FSA has confirmed that eligible policyholders' compensation for giving up their rights to future special distributions from the inherited estates should include payment for future policyholders' share of the estates. Therefore the policyholder advocate has assessed the basis on which the residual value of the CGNU Life and CULAC inherited estates has been divided between eligible policyholders and shareholders when evaluating Aviva's aggregate offer, as outlined in Appendix 42:

Evaluation of the Aggregate PIP Offer.

Annexe A: Summary of deductions from the inherited estate

The following tables summarise the policyholder advocate's deductions from the inherited estate in the context of assessing the merits of the Aviva reattribution transaction. Each table shows the deduction for a particular unadjusted value of the estate across three new business scenarios. Full details on the deductions in respect of FSA guidance can be found in *Appendix 39: The Impact of FSA guidance on Policyholders*.

Table 6 Summary of policyholder advocate deductions, unadjusted estate value of £1,200 million, 1 October 2009, £m

Item	New business growth at:		
	+5% p.a.	-5% p.a.	-15%p.a.
Value of the Inherited Estate	1,200	1,200	1,200
KPMG adjustments rolled forward to 1 October 2009	185	185	185
Adjusted inherited estate	1,385	1,385	1,385
Existing business non-market risk	(31)	(31)	(31)
New business non-market risk	(21)	(21)	(21)
Value available for distribution	1,333	1,333	1,333
Lock-in transaction cost (at 3.5% of the PIP)	(18)	(18)	(18)
Frictional tax	(51)	(43)	(38)
Shareholder exit tax post-RA @ 15%	(199)	(201)	(202)
Shareholder tax on new business	(15)	(12)	(11)
Project costs	(147)	(147)	(147)
Value after reattribution costs, taxes & allowances	904	912	918
Shareholders' future distributions from whole estate	(130)	(131)	(132)
Eligible policyholders' expected future special distributions	(83)	(292)	(431)
Residual value after all interests, costs & allowances	690	488	356

* Values are as at 1 October 2009, and have been rolled forward from end 2008 figures at the 2009 fund rate

Table 7 Summary of policyholder advocate deductions, unadjusted estate value of £1,570 million, 1 October 2009, £m

Item	New business growth at:		
	+5% p.a.	-5% p.a.	-15% p.a.
Value of the Inherited Estate	1,570	1,570	1,570
KPMG adjustments rolled forward to 1 October 2009	185	185	185
Adjusted inherited estate	1,755	1,755	1,755
Existing business non-market risk	(31)	(31)	(31)
New business non-market risk	(21)	(21)	(21)
Value available for distribution	1,703	1,703	1,703
Lock-in transaction cost (at 3.5% of the PIP)	(25)	(25)	(25)
Frictional tax	(65)	(55)	(48)
Shareholder exit tax post-RA @ 15%	(254)	(256)	(257)
Shareholder tax on new business	(15)	(12)	(11)
Project costs	(147)	(147)	(147)
Value after reattribution costs, taxes & allowances	1,197	1,208	1,215
Shareholders' future distributions from whole estate	(167)	(168)	(168)
Eligible policyholders' expected future special distributions	(197)	(448)	(605)
Residual value after all interests, costs & allowances	834	592	443

* Values are as at 1 October 2009, and have been rolled forward from end 2008 figures at the 2009 fund rate

Table 8 Summary of policyholder advocate deductions, unadjusted estate value of £1,800 million, 1 October 2009

Item	New business growth at:		
	+5% p.a.	-5% p.a.	-15%p.a.
Value of the Inherited Estate	1,800	1,800	1,800
KPMG adjustments rolled forward to 1 October 2009	185	185	185
Adjusted inherited estate	1,985	1,985	1,985
Existing business non-market risk	(31)	(31)	(31)
New business non-market risk	(21)	(21)	(21)
Value available for distribution	1,933	1,933	1,933
Lock-in transaction cost (at 3.5% of the PIP)	(29)	(29)	(29)
Frictional tax	(73)	(62)	(54)
Shareholder exit tax post-RA @ 15%	(289)	(291)	(292)
Shareholder tax on new business	(15)	(12)	(11)
Project costs	(147)	(147)	(147)
Value after reattribution costs, taxes & allowances	1,380	1,392	1,400
Shareholders' future distributions from whole estate	(189)	(190)	(191)
Eligible policyholders' expected future special distributions	(292)	(557)	(721)
Residual value after all interests, costs & allowances	899	644	488

* Values are as at 1 October 2009, and have been rolled forward from end 2008 figures at the 2009 fund rate

Table 9 Summary of policyholder advocate deductions, unadjusted estate value of £2,100 million, 1 October 2009

Item	New business growth at:		
	+5% p.a.	-5% p.a.	-15%p.a.
Value of the Inherited Estate	2,100	2,100	2,100
KPMG adjustments rolled forward to 1 October 2009	185	185	185
Adjusted inherited estate	2,285	2,285	2,285
Existing business non-market risk	(31)	(31)	(31)
New business non-market risk	(21)	(21)	(21)
Value available for distribution	2,233	2,233	2,233
Lock-in transaction cost (at 3.5% of the PIP)	(35)	(35)	(35)
Frictional tax	(85)	(71)	(63)
Shareholder exit tax post-RA @ 15%	(334)	(336)	(337)
Shareholder tax on new business	(15)	(12)	(11)
Project costs	(147)	(147)	(147)
Value after reattribution costs, taxes & allowances	1,618	1,632	1,641
Shareholders' future distributions from whole estate	(219)	(220)	(220)
Eligible policyholders' expected future special distributions	(440)	(716)	(885)
Residual value after all interests, costs & allowances	960	696	536

* Values are as at 1 October 2009, and have been rolled forward from end 2008 figures at the 2009 fund rate

Table 10 Summary of policyholder advocate deductions, unadjusted estate value of £2,500 million, 1 October 2009

Item	New business growth at:		
	+5% p.a.	-5% p.a.	-15%p.a.
Value of the Inherited Estate	2,500	2,500	2,500
KPMG adjustments rolled forward to 1 October 2009	185	185	185
Adjusted inherited estate	2,685	2,685	2,685
Existing business non-market risk	(31)	(31)	(31)
New business non-market risk	(21)	(21)	(21)
Value available for distribution	2,633	2,633	2,633
Lock-in transaction cost (at 3.5% of the PIP)	(43)	(43)	(43)
Frictional tax	(99)	(83)	(74)
Shareholder exit tax post-RA @ 15%	(394)	(395)	(396)
Shareholder tax on new business	(15)	(12)	(11)
Project costs	(147)	(147)	(147)
Value after reattribution costs, taxes & allowances	1,936	1,952	1,962
Shareholders' future distributions from whole estate	(258)	(259)	(260)
Eligible policyholders' expected future special distributions	(679)	(958)	(1,128)
Residual value after all interests, costs & allowances	999	735	575

* Values are as at 1 October 2009, and have been rolled forward from end 2008 figures at the 2009 fund rate

Annexe B: Criterion for judging Aviva's offer for the inherited estate

By Professor Richard Brealey

The policyholder advocate has requested my opinion as to the proper criterion for judging whether Aviva's offer for the inherited estate is appropriate. As I explain below, the appropriate criterion is the opportunity cost of capital for Aviva's investment in the estate and this is equal to the return that investors require from investing in the financial markets in comparable securities to those held in the estate. I will then explain why Aviva's company cost of capital does not provide the correct benchmark for judging whether the return to shareholders is fair. I will also show that the interest rate on possible securities that Aviva or Aviva may issue to fund the investment is likewise not a relevant measure of the cost of the capital invested in the estate. My arguments and conclusions on these matters rest on the fundamental principles of corporate finance. By contrast, estimation of the return that investors require from particular classes of security often requires a strong dose of judgment.

The benchmark for judging whether the return to Aviva is appropriate is the return that shareholders expect if they invested directly in a portfolio of similar assets. Corporations face a trade-off between investing in a project and paying out the cash to shareholders, who can invest for themselves in the financial markets. Thus capital invested by the corporation in any project has an opportunity cost which is set by the prospective rates of return from comparable investments in financial markets. An investment by a corporation increases shareholder wealth if (and only if) it offers a return that is greater than the return offered in the financial markets by comparable securities. The opportunity cost of capital for Aviva's purchase of the inherited estate is the return that shareholders could expect to earn if they purchased a portfolio of similar securities for themselves. Determining the cost of capital for investment in the estate (and thus the minimum acceptable return for Aviva's shareholders) therefore boils down to the problem of estimating the expected return from the assets in the estate.

I understand that Aviva has forecast the return from the securities contained in the inherited estate as 6.15% after-tax, equivalent to 6.60% before tax. If this indeed represents the return that is expected from the package of assets, then it is also the opportunity cost of capital for Aviva's investment in the estate. In other words, after making any deductions for lock-in or other costs that are specific to this transaction, Aviva needs to earn at a minimum a similar return from its investment.

The benchmark for judging whether the return to Aviva is appropriate is not the company cost of capital.

Companies generally hold a package of assets with different risks and therefore different required returns. The company cost of capital represents the return required on this package. For an insurance company the company cost of capital may measure the return that shareholders require for investing in a mixture of life and general branch business in a variety of countries. The company cost of capital, therefore, does not measure the cost of capital for each part of the package, and is irrelevant for judging the correct discount rate to be used for any single investment. The true cost of capital depends on the use to which that capital is put. For example, the required return on relatively safe investments (e.g. a Treasury bill or government bond) will typically be lower than the company cost of capital. If the company makes a large investment in a safe asset, the risk of the company as a whole will decline and so will the company cost of capital. Thus there will be a fall in both the return that the company generates and in the return that its investors require. As long as the Treasury bill or bond is fairly priced, shareholder wealth will not be affected by their purchase even though they offer relatively low rates of return.

The benchmark for judging whether the return to Aviva is appropriate is not the return that the company's security holders require from a particular new issue of securities.

The cost of any particular issue of securities is not a measure of the opportunity cost of capital employed in a particular project. Instead it depends on at least two factors – the contractual nature of the security and the prospects of the issuing company. For example, a company may choose to fund a particular investment by an issue of equity or debt. The return that

investors will demand is higher for equity than for debt. Also the required return depends not on the riskiness of the particular investment being undertaken but on the riskiness of the company as a whole. For example, the interest rate that Aviva would need to pay on a bond issue depends on investors' assessment of the prospects for the life insurance business and the amount of outstanding company debt. These are irrelevant to the required return on the assets that Aviva is proposing to buy.

Conclusion

To summarise, when judging whether the return to Aviva on the reattribution is appropriate, the correct benchmark is the return that shareholders would expect to earn if they invested directly in a portfolio of similar assets. It is not Aviva's cost of capital. Nor is it the interest rate on a particular issue of securities. While there is plenty of room for difference in views over the expected return on assets held in the estate and on the costs that Aviva may fairly deduct, the underlying principles for judging whether the return on an investment is more or less than shareholders require are well established.

Richard Brealey

Emeritus Professor of Finance

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Annexe C: Issue Costs

By Professor Richard Brealey

This note provides some recent evidence on the cost of new debt and equity issues. The costs that I consider are the incremental costs of financing an expenditure by means of an issue of securities rather than by retained earnings. Thus I focus on the direct costs, including underwriting, legal and accounting costs, printing costs, and so on. It is arguable that the sub-underwriting costs of a rights issue are not a deadweight cost since the shareholder receives in exchange a valuable put option. However, since there is reason to suspect that the value of this option is small relative to the sub-underwriting fee, I have included this fee in my measure of direct costs. The result, however, may be a slight over-estimate of the direct costs of rights issues. That said, there are other internal costs, such as the cost of management time, that are not included in the data.

The most comprehensive recent evidence on issue costs covers all US public issues of bonds and seasoned equity during the past five years. These costs are summarized in the following table:¹⁴

Direct Costs of Raising Capital in the United States (2004-2008)			
Issue Proceeds (\$ million)	Costs as percent of issue proceeds:		
	Bonds	Seasoned Equity	Convertibles
less than 250	0.90	4.41	3.79
250-600	0.62	4.37	2.83
600-1000	0.62	4.42	2.65
1,000-1,500	0.53	4.21	2.43
1,500-2,000	0.58	4.34	2.47
2,000-2,500	0.62	4.48	2.45
2,500-3,000	0.53	4.68	2.43
3,000 and up	0.52	4.59	2.77
Number of Issues (2004-2008)	3379	1523	112

¹⁴ Source: R.A. Brealey, S.C. Myers, and F.A. Allen, *Principles of Corporate Finance*, 10th ed, forthcoming 2009.

Note that there are economies of scale in security issues, though these seem to fall off for issues of \$1 billion or more. The table suggests that in the case of these larger offerings the direct costs are between .5 and .6% for bond issues, between 4.2 and 4.7% for equity issues, and between 2.4 and 2.8% for convertible issues.¹⁵

In the case of bond issues the figures in the above table are probably a reasonable indication of the costs of international bond issues for UK companies. This is less likely to be so true for equity issues where registration expenses push up issue costs in the United States. During much of the second half of 2008 equity issues in the UK were largely confined to banks. However, January 2009 saw a surge in the volume of new rights issues with a number of other major offerings reportedly in the pipeline. I have examined the issue costs for a sample of 13 UK rights issues since April 2008. The individual issues are set out in the Appendix to this note, but the following table summarizes the costs of the 13 issues in declining order of issue size:

Issue size (£ million)	Direct costs %
12,000	2.0
4,900	1.9
4,100	3.1
4,100	3.8
2,200	2.9
1,800	3.0
740	3.5
584	4.0
400	4.7
241	5.5
77	11.8
47	6.9
30	10.5

¹⁵ Registration costs are likely to be less relevant in the case of debt issues, many of which use shelf-registration.

As in the United States, percentage costs decline with issue size. For equity issues in excess of £1 billion costs are typically between 2 and 3% with a mean of 2.8%, a somewhat lower figure than in the United States.¹⁶ There is no evidence that the fall in equity prices and high volatility have increased the costs of rights issues (though they have resulted in deeply discounted issues).

In summary, the direct issue costs are the costs of financing by an issue of securities rather than by retained earnings. For large bond issues a reasonable mid-estimate would be about .55%. The cost of equity issues is larger with greater variation between issues. A reasonable estimate for a large rights issue is 3% and is unlikely to be more than 4%.

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Feb 16, 2009

Appendix: Sample UK companies with rights offerings 2008-2009

HBOS In April 2008 HBOS announced a £4.1 billion rights issue.¹⁷ The offer price was set 36% below the theoretical ex-rights price. The *total* estimated expenses were £160 million, or 3.76%.

Royal Bank of Scotland In April 2008 RBS announced a £12 billion rights issue. The offer price was set 35% below the theoretical ex-rights price. The underwriting fee was 1.75% and the *total* estimated expenses were £246 million, or 2.01%.

¹⁶ The HBOS issue is an outlier with issue expenses of 3.8%.

¹⁷ Amounts of rights issues are shown net of expenses.

Bradford and Bingley In May 2008 Bradford and Bingley announced a £400 million rights issue. The offer price was set 36% below the theoretical ex-rights price. The underwriting fee was reported to be 3% of the amount raised and *total* expenses were reported to be 4.65%.

Imperial Tobacco In May 2008 Imperial Tobacco announced a £4.9 billion rights issue. The offer price was set 34% below the theoretical ex-rights price. The *total* estimated expenses were £93 million, or 1.86%.

UTV Media In June 2008 UTV Media announced a relatively small £46.7 million rights issue. The offer price was set 28% below the theoretical ex-rights price. The *total* estimated expenses were £3.2 million, or 6.85%.

AEA Technology In June 2008 AEA announced a £29.8 million rights issue. The offer price was set at 50% below the cum-rights price. The *total* estimated expenses were £3.5 million, or 10.51%.

Centrica In November 2008 Centrica announced a £2.2 billion rights issue. The offer price was set 39% below the theoretical ex-rights price. The *total* estimated expenses were £65 million, or 2.87%.

Standard Chartered In November 2008 Standard Chartered announced a £1.83 billion rights issue. The offer price was set 42% below the theoretical ex-rights price. The *total* estimated expenses were £54 million, or 2.95%.

Xstrata In January 2009 Xstrata announced a \$4.1 billion rights issue. The offer price was set 42.5% below the cum-rights price. The total issue expenses were \$126 million, or 3.07%.

Cookson Group In January 2009 Cookson announced a £241 million rights issue. The offer price was set at 37% below the theoretical ex-rights price. The *total* estimated expenses were £14 million, or 5.49%.

Workspace Group In January 2009 Workspace announced a £76.9 million rights issue. The offer price was set at 69% below the cum-rights price. The *total* estimated expenses were £14 million, or 11.81%.

British Land In February 2009 British Land announced a £740 million rights issue. The offer price was set at 40% below the theoretical ex-rights price. The *total* estimated expenses were £27.0 million, or 3.52%.

Hammerson In February 2009 Hammerson announced a £584.2 million rights issue. The offer price was set at 39% below the theoretical ex-rights price. The *total* estimated expenses were £24.5 million, or 4.02%.

There is no evidence that the fall in equity prices and high volatility have increased the costs of rights issues (though, as I have noted, they have resulted in deeply discounted issues). The costs for the rights issues that are listed above, range from 1.86% to 6.85%. For the larger issues (those greater than £400 million) the range is 1.86% to 3.76% with a mean of 2.63%.

Bond markets that were virtually closed following Lehman Brothers' collapse have become much more liquid in 2009 with the number of global issues recovering from 133 in October to 315 in January 2009. In the UK also the volume of bond placements in January was the highest for three years, with £15.7bn placed across 15 issues. Similarly, January saw a sharp increase in European equity issues with the FT forecasting that new equity issues in 2009 will reach their highest level since 2001.

Annexe D: Tax rate on the value of the reattributed estate

By Professor Richard Brealey and Professor Julian Franks

We provide below a view of taxes on the reattributed estate. We understand that when the reattributed investment estate is terminated, the estate will incur a 15% tax that is levied on the value of the estate. We also understand that until that date any income generated by the estate attracts a tax of 6.9%.

We ask two distinct questions. First we ask whether Aviva can best help its shareholders by keeping the securities in the estate or by terminating the estate and distributing the proceeds for shareholders to invest for themselves. Then we ask whether, because of the 15% exit tax, Aviva is likely to earn a lower net return than other holders of the same securities or whether the effect of that tax is more than offset by the relatively low rate of tax that the estate pays on income.

Question 1: Can Aviva best help its shareholders by keeping the securities in the estate or by terminating the estate and distributing the proceeds for shareholders to invest for themselves?

When the reattributed investment estate is terminated, Aviva will incur a 15% exit tax. The present value of this exit tax is independent of the date of exit. If exit is postponed, payment of the tax is also postponed. On the other hand, the value of the estate and therefore the amount of the tax will be increased by the return on the investments. These two effects exactly cancel each other out. The reason that they cancel is that the exit tax is a constant proportion of the value of the estate, so that any uncertainty about the investment returns applies equally to the exit tax.

To illustrate, if the estate is terminated immediately, each pound of value attracts £.15 of tax. On the other hand, if termination is postponed to year 1, the value of the estate can be expected to increase to $£1 \times (1 + r)$ and the exit tax will increase to $£.15 \times (1 + r)$. The present value of this sum is $£.15 \times (1 + r)/(1 + r) = £.15$. Thus as long as the exit tax is a constant proportion of fund value, the present value of the tax is unaffected by the date of termination.

Although the date of termination does not affect the present value of the exit tax; it does affect the present value of taxes that are levied on investment income. If the securities remain in the estate, the income will attract tax of 6.9%. If the estate is terminated and the proceeds are distributed to shareholders, income will attract tax at the shareholders' marginal rate of income tax.

We can now ask "Under what circumstances would shareholders prefer Aviva to terminate the RIE and distribute the proceeds?" To answer this question, we can ignore the exit tax, since it will need to be paid at some stage and we have already seen that the present value of the tax is the same regardless of when the estate is terminated. The only question we need to worry about is whether the shareholder's tax rate on income is higher or lower than that of the estate. If an Aviva shareholder has a tax rate of greater than 6.9% then the shareholder is better off if the securities are left in the estate. If it is less than 6.9%, then the shareholder would prefer immediate distribution. In effect only shareholders who are completely tax exempt will prefer an immediate distribution.

Question 2: Is Aviva likely to earn a higher or lower net return on the estate than other holders of the same securities?

Aviva may wish to argue that the 15% exit tax on the estate places it at a disadvantage compared with other holders of the same securities and that the effect of this disadvantage is to make the securities held in the estate worth less to Aviva than their market price. However, the disadvantage of the exit tax needs to be weighed against the advantage of a relatively low rate of tax on income generated within the estate. This is the issue that we now address.

The precise question that we need to answer is whether the after-tax rate of return on the securities held in the estate is higher or lower than the after-tax rate of return to the marginal investor in these same securities. If it is higher, we can reject the suggestion that the estate is worth less to Aviva than its market value. For illustration, suppose that the securities are expected to provide a pretax return of 10%, all of which is taxable. If the securities are held

in the estate, they earn a net return of $(1 - .069) \times 10\% = 9.31\%$. Thus over 30 years each pound invested in the estate will accumulate to $\pounds 1.093130 = \pounds 14.45$. After paying the exit tax of 15%, the net value of the estate at year 30 is $.85 \times \pounds 14.45 = \pounds 12.28$. Net of both the 6.9% tax on income and the 15% exit tax, Aviva would earn over 30 years a return of $12.28(1/30) - 1 = .087$, or 8.7%. Thus Aviva would earn the same net return as an investor who was not subject to the exit tax, but who paid tax of 13% on any income (note: with a 13% tax a pre-tax return of 10% translates into a net return of 8.7%). As long as the tax rate of the marginal investor in the securities is not less than 13% (and it almost certainly is not), the securities are worth more held in the estate than they are in the hands of the marginal investor.

We can repeat this exercise with different assumptions about the expected pre-tax return on these securities. The lower the return on the securities, the less the advantage to Aviva of paying the low rate of tax on income derived in the estate. For example, if the pre-tax return on the securities is only 5%, then the break-even tax rate rises to 18%. In other words, as long as the tax rate of the marginal investor in the securities is not less than 18% (and once again it almost certainly is not), the securities are worth more held in the estate than they are in the hands of the marginal investor.

Summary

In summary, we have sought to answer two questions. The first question is whether Aviva's shareholders would prefer the company to hold the securities in the estate or to distribute them. The present value of the exit tax is unaffected by this decision. The only question therefore is whether the shareholders pay a lower rate of tax on income than the estate. Thus only shareholders paying tax of less than 6.9% on income would prefer the estate to be distributed immediately

The second question is whether Aviva can fairly claim that the estate is tax-disadvantaged compared with other holders of the same securities. If the estate earns a lower net return on the securities than the marginal holder of those securities, it could be argued that the estate is worth less to Aviva shareholders than its market value. The estate suffers the disadvantage of the 15% exit tax, but has the benefit of a relatively low rate of tax on investment income. Our

calculations suggest that, unless the marginal investor has a very low rate of tax, Aviva is likely to earn a higher net return than the marginal investor.

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