Assignment X1 Solutions

Solution X1.1

Comment

Guaranteed equity products are covered in Chapter 2.

(i) ***Advantages and reasons for the launch***

Company

The company will be hoping to write the business on profitable terms and thereby make money for its shareholders. [½]

If there are with-profits policyholders who will participate in profits from this business, then the company might be able to boost with-profits maturity payouts … [½]

… possibly leading to improved retention. [½]

This bond will extend the range of products on offer and so might make the company appear more attractive to investors. [½]

The company might be trying to match the product range of its competitors. [½]

Alternatively, it might be losing market share elsewhere and be hoping to make up for that with the new product. [½]

This product might help the company break into a new target market that was previously untapped. [½]

This will expand its client base and so the company will in future be able to send mailshots about other products to these new investors. [1]

This product might help the company improve its image as an investment product specialist. [½]

Market research might have highlighted a demand for this type of product. [½]

Policyholders

Bond policyholders will have a chance to share in the potential growth of the stockmarket … [½]

… whilst being protected from the downside, due to the guarantees. [½]

Diversification across the stockmarket is obtained without having to invest in many separate stocks oneself. [½]

The return on death will not be less than the premium paid. [½]

Existing with-profits policyholders might participate in the profits from writing the bond. [½]

[Maximum 6]

(ii) ***Asset backing***

The two combinations are:

- zero-coupon bond plus a call option [1]
- shares (or units in a tracker fund) plus a put option. [1]

(iii) ***Risks***

The ultimate aim of writing any product will be to make profit for the shareholders (and possibly with-profits policyholders if there are any), so the overall risk is that the profit made is below target, or even worse, that a loss is made on the contracts. [1]

There are lots of things that can contribute to this overall risk:

Counterparties under derivative contracts

The contracts will almost certainly be backed with derivative contracts. [½]

These will be tailor-made for the company to meet their specific risk profile and so will be over-the-counter contracts, rather than exchange-traded. [½]

This means there will be no clearinghouse to guarantee the contract, so the company is at risk of loss from default of the counterparty. [½]

Marketing

There is a risk that investors do not fully appreciate the risks they are taking on and that they are subsequently unhappy with the final payout of their policy. [½]

This risk can be reduced by fully explaining the risks in the marketing literature. [½]

Mix of new business

Although there is an allocation rate structure, there will still be cross-subsidies between different sizes of policy, due to the mismatch of charges with expenses. [½]

An average premium size (and distribution around this) will have been assumed when setting the product terms. [½]

There is a risk that the mix of business by size is different from that assumed, leading to insufficient charges to meet expenses. [½]

The terms are independent of age and there is a death strain at least for early durations … [½]

… therefore there is a risk that the average age of investors is higher than that assumed when pricing. [½]

Volume of new business

The higher the volumes of new business, the greater the new business strain. Therefore there is a risk that the statutory solvency position is reduced to an undesirable extent. [½]

To prevent this happening, there is likely to be a cap on the volume of new business that will be accepted. In this case, there is still a risk that "pipeline" cases will cause the cap to be breached once the product has been closed. [1]

There is a risk that insufficient volumes will be sold to recoup the development costs. [½]

If the company agrees to purchase a specific volume of some derivative from the investment bank, there is a risk that volumes are lower than expected, resulting in the purchase of a now unneeded asset or possibly a penalty payment. [1]

If the price of the derivatives depends on the volume required, then low volumes of business might increase the unit cost of the derivative, reducing product profitability. [½]

Data

This is a totally new product so the company has no directly relevant experience on which to base any of its pricing assumptions. There is therefore a risk of loss due to using inappropriate assumptions. [½]

Mortality

The death benefit is guaranteed to be at least the original amount allocated. Therefore there is a greater risk of loss on death at early durations, due to initial expenses not having been recouped. [1]

This risk is greater for larger policies, which have a higher allocation rate. [½]

Investment performance

If the benefit profile can be closely replicated by a combination of bonds, equities and derivatives, then the investment risk is largely passed to the policyholders and investment bank once these replicating assets have been bought. [½]

However, there is still the period between the product terms being signed off and the investment of the monies, during which the price of the derivatives could move against the company. [½]

The make-up of the maturity value is quite complicated (involving X, Y and Z) and it is not obvious that this can be replicated using the basic derivatives on offer. [½]

For some combinations of X, Y and Z the company might have to accept some investment risk itself or negotiate for the construction of more complicated derivative instruments. [½]

There is also a risk that the interest on the sterling reserves is lower than allowed for in the pricing model. [½]

Expenses

The terms of the contract are guaranteed and so there is no scope to increase charges once a contract has started. [½]

The company is therefore at risk that expenses turn out to be higher than assumed in the pricing basis. [½]

Higher than expected inflation will increase the above risk … [½]

… but since the term of the contracts is only five years, this is unlikely to have a significant impact. [½]

Development costs are very uncertain, since new systems are likely to be required. [½]

Also, the new systems might not be ready on time or might not deliver the full functionality from launch. [½]

Withdrawals

The surrender value is not guaranteed in advance, so the risk of loss on withdrawal is much reduced. [½]

However, the initial expenses will cause the asset share to be below the premium paid and there might be some pressure not to pay out surrender values much below the premiums paid. [½]

This would result in losses on early withdrawals … [½]

… but the company could aim to subsidise these from lower payouts in respect of later withdrawals, so that overall, withdrawals are either cost-neutral, or perhaps make a contribution to profit. [½]

Since surrender terms are discretionary, the exact payouts for later withdrawals could be determined after analysing the withdrawals at early durations. [½]

Competition

There is a risk that another competitor will launch a similar product at the same time, or slightly earlier, capturing a significant proportion of the market premium invested during our offer period. [½]

If the competitor's terms are more attractive than ours, then we are unlikely to sell much business … [½]

… unless the competitor reaches their limit very quickly, leaving our product as the only one still open for investment. [½]

Operational risk

The company might have no previous experience of specialised over-the-counter derivatives. [½]

This might lead to inappropriate derivative contracts being entered into or inappropriate monitoring being put in place. [½]

[Maximum 18]

(iv) ***Modifications***

(a) *Link to a European index*

If the equivalent derivatives are cheaper, then it is true that we could reflect this in better terms for policyholders. [½]

This might result in higher expected sales if the values for Y and Z are all important. [½]

However, if X is the key variable and the potential for equity growth is a relatively minor aspect of the product, then the change in Y and Z might not make much difference. [½]

For the majority of investors, having exposure to a foreign (rather than domestic) stockmarket will seem much more risky, due to the extra currency risk … [½]

… and different economic situation. [½]

The effect of this modification on sales will therefore depend on the target market and their level of financial sophistication. [½]

We would want to know the price difference between the two sets of derivatives, to see exactly what difference it would make to the terms we could offer. [½]

If the difference is small, the improvement in terms is likely to be more than offset by the reduction in marketability associated with the less familiar stock index. [½]

We would also want to know the volatility of this price differential, to see if it is likely to persist until the derivatives are purchased. [½]

It would be far from ideal if the situation reversed just before we bought the derivatives from the investment bank. [½]

If the company purchases the derivatives in advance it will need to estimate the total sales volume. If it gets this wrong it will be left with exposure that it hadn't wanted. [½]

This modification might make it harder to predict the demand for the product and so increase the risk of being left with this unwanted exposure. [½]

However, if it waits until sales volumes are known, then there is a risk that the price of the derivatives will move against the company, resulting in a certain loss. [½]

An alternative to offering policyholders better terms would be to take the difference as additional profit for the suppliers of capital. [½]

This might be considered inequitable … [½]

… unless the risk associated with these profits was considered higher … [½]

… possibly due to more uncertainty over sales volumes. [½]

(b) *Guaranteed partial surrenders*

It is quite common for investment products to consist of clusters of identical policies and so this modification might be necessary in order to achieve the desired level of sales. [½]

Clustering improves the attractiveness of the product by allowing much more flexibility over when policyholders can access their money. [½]

Having 100 identical policies, rather than ten would improve the flexibility still further. [½]

An amount up to 5% of the original investment can be surrendered each year without incurring a tax charge … [½]

… so having just ten identical policies wouldn't allow higher-rate tax payers to take maximum advantage of this. [½]

This issue would be more important if the product were to run for 10 years, say. [½]

A fair value to give policyholders on partial early surrender will be closely related to the value of derivatives (and possibly shares) held by the company in respect of the contract(s) being surrendered. [1]

The value of these will be quite volatile and will not be known in advance … [½]

… so any guaranteed surrender terms could lead to a large gain or loss, depending on the timing of the surrender. [½]

This allows scope for anti-selective surrenders, which means policyholders are far more likely to surrender when the assets backing the contract are worth less than the surrender value, than the other way round. [½]

Since all money will be invested on the same date, the risk of a large loss on mass surrender would be very high. [½]

The suppliers of capital would demand a very high risk margin within the risk discount rate to allow for this, making the product terms unmarketable. [½]

Therefore, the surrender terms should not be guaranteed. [½]

(c) *Choice of X, Y and Z*

Offering a choice to potential investors might well increase the attractiveness of the product and therefore boost sales. [½]

However, it might also put people off, if they felt unable to make an educated decision. [½]

Offering a choice would cater for those who want a higher guaranteed return (high X) … [½]

… for those wanting more exposure to the stockmarket (high Y, low Z) … [½]

… and also for those wanting a highly geared equity exposure (very high Y). [½]

However, the company might decide that its purpose isn't to provide a highly geared exposure and that such options are not consistent with the philosophy behind its existing product range. [½]

The risk being accepted by policyholders could be limited by narrowing the range available for X, Y and Z … [½]

… or offering just two or three set combinations, which the company would choose after careful market research. [½]

The company should investigate the extent of choice available from other companies in the market. [½]

Offering a choice will add complexity to the required systems and the new business administration process. [½]

There is a risk that policyholders would not fully understand the implications for risk of each of the available options … [½]

… so the company should ensure the risks are fully explained in its marketing literature. [½]

If there is more than one product version, people will be able to compare the returns from each, retrospectively. [½]

With hindsight, everyone will be able to see what the best option was, and is likely to feel they have received poor value for money if they chose a different option. [½]

Whilst not a fair reflection of the company's performance, it might hinder future sales to these same policyholders. [½]

Each option will require a different set of derivatives, so it will be important to estimate sales volumes split down by the various options … [½]

… this will obviously be much harder than if there were just one version. [½]

If a smaller amount of each type of derivative is required, the investment bank might charge more per unit, making the product more expensive. [½]

(d) *Extend offer period*

Due to the new business strain and risks associated with this product, we are likely to have a cap on the amount of business we are prepared to write. [½]

If we expect to achieve this cap within a one-month offer period, there is no need to extend it to two months. [½]

However, if this is not the case, then a longer offer period might indeed increase sales. [½]

The relatively high rate of interest compared to current cash returns may also be attractive, but its cost will need to be priced for. [½]

If no interest is given during this period, then investors are likely to wait until the end of the period before committing themselves, making final sales volumes harder to predict. [½]

Specifying in advance the fixed rate of interest to give is a source of risk, since short-term interest rates may drop during the period. [½]

To reduce this risk, a very low rate could be offered … [½]

… or a variable rate, *eg* LIBOR – ½%, could be specified. [½]

An alternative to paying interest would be to offer a slightly enhanced allocation rate in the first month of the offer period. [½]

Lengthening the offer period allows competitors more time to examine our terms, negotiate with investment banks and come to the market with a rival product. [½]

It also increases the chance of derivative prices moving against us, after the terms have been set and before the money is invested. [½]

[Maximum 25]

(v) ***RDR requirements***

The RDR changed the way in which life insurance investment products are sold … [½]

… and the way in which financial advisers are established and remunerated. [½]

The proposed new product is an investment product and so is affected by these changes. [½]

The RDR requirements included more stringent qualifications required from financial advisers. [½]

The changes also increased levels of capital adequacy required by adviser firms. [½]

In particular, they have to hold three months of expenditure in realisable assets such as cash. [½]

Post-RDR, commission payments (from the insurance company to the adviser) are no longer permitted on investment products. [1]

Instead, a more transparent method of allowing policyholders to pay explicit amounts from their policies is required. [½]

The RDR introduced two different types of remuneration for investment-based products:

- adviser charging (which would be used for this product) [½]
- consultancy charging (used for group pensions). [½]

Adviser charging is used in cases where an adviser has a face-to-face relationship with a policyholder … [½]

… which will typically be for individual investment business. [½]

The level of remuneration (or fee) taken under adviser charging is agreed between advisers and their clients. [½]

It is not therefore a decision for the insurance company in launching this product. [½]

However, the company may set up an arrangement with advisers whereby the fee is carved out of the premium. [½]

Also, the company's charging structure for the product will reflect the fact that the customer directly pays the adviser, *eg* there will be no need to use high initial charges to cover commission. [½]

Under the RDR "factoring", *ie* where commission is paid as a lump sum in lieu of future payments from a policyholder, is no longer permitted. [½]

As this was mainly employed for regular premium policies, this is unlikely to have any effect on the proposed new product. [½]

Post-RDR, advisers are able to offer four types of advice.

- Basic advice – this is a very simple level of financial advice which uses a set of standard pre-scripted questions. [½]

  Basic advice only applies to stakeholder pension sales, so cannot be used for the proposed product. [½]

- Simplified advice – this is delivered through a decision tree process with a limited range of products. [½]

  The proposed product is quite complex and would need careful explanation by the adviser, so simplified advise would not be suitable. [½]

- Restricted advice – this covers advisers who give fuller advice, but who only recommend products from a limited number of firms, products or funds. [½]

  Restricted advice could give the policyholder the full detailed understanding of the product that they need, but would not provide comparisons with the full range of similar products from competitors. [½]

- Independent advice – this is full advice where an adviser can recommend products from the whole market. [½]

  The advice must be based on a comprehensive and fair analysis of the relevant market, and must be unbiased and unrestricted. [½]

Independent advice may be most suitable for the policyholder as it would allow them to choose the guaranteed equity product that best suited their needs and risk appetite from across the whole market. [½]

Customers must be told which level of advice they are being given by a financial adviser. [½]

Financial advisers may offer different levels of advice to different clients. [½]

Many smaller financial advisers have become members of "network" organisations that exist to support the advisers in terms of, *eg* technical help, training, compliance and product comparisons. [½]

It is likely to help the company to successfully launch the product if it was on the "panel" of a major such financial advisor network. [½]

[Maximum 12]

Solution X1.2

Comment

Taxation is covered in Chapters 5, 6 and 7.

(i) ***Policyholder taxation***

Whether a benefit is taxable depends on whether the policy is qualifying or non-qualifying. [½]

To be qualifying a contract must satisfy certain rules, which cover such things as the following:

- the term of the contract
- the premium paying term
- the frequency of payment of premiums
- the relationship between the premiums payable in different 12-month periods
- the benefit on death in relation to the total premiums payable. [1½]

A tax charge on the policy benefits received by the policyholder (or the policyholder's estate) may apply:

- at maturity or on death, surrender, part surrender or sale, if the contract is non-qualifying [½]

- on surrender, part surrender or sale within 10 years or three-quarters of the term if less, if the contract is qualifying. [½]

Where tax is payable, it is paid on the excess, if any, of the benefits received over the total amount paid in premiums. This excess is referred to as a "chargeable gain". [½]

Tax is paid on any amount liable to tax at a rate equal to the policyholder's marginal tax rate less the lower rate (charged on savings) of tax (as at April 2016 the lower rate is 20%). [½]

Usually tax on chargeable gains is payable only by higher-rate tax payers whose marginal rate of tax is 40% (April 2016) giving a tax rate on chargeable gains of 20% (those whose earnings are in excess of £150,000 are subject to the additional rate tax band, which is 45% as at April 2016). Basic-rate tax payers are not charged. [1]

Where the tax charge arises on death, it is assumed for calculating the amount of tax that the benefit received is the surrender value of the contract immediately prior to death. [½]

In the case of a part surrender, the tax charge only applies to the excess of the amount received over 5% per annum in respect of each premium paid. [½]

For general annuity contracts, the annuitant is liable to tax on the amount of each annuity payment that exceeds the capital content. [½]

The capital content for an immediate annuity is obtained by dividing the premium by an expectation of life at the commencement of the annuity, based on a mortality table specified by HMRC. [½]

[Maximum 6]

(ii) ***Minimum profit***

(a) ***Definition of minimum profit***

The minimum profit is effectively the accounting profit … [½]

… arising from BLAGAB (including BLAGAB share of non-taxable dividends) … [½]

… after a deduction for policyholder bonuses … [½]

… and adjustment for current and deferred tax on policyholder *I–E* items. [½]

If the result of the above calculation is negative the minimum profit is taken as zero and a loss can be carried forward to the following year. [½]

[Maximum 2]

(b) ***Tax calculation***

We will work in millions of pounds throughout the solution.

X

The taxable income from the non-BLAGAB fund is set to zero. [½]

There are no non-BLAGAB losses brought forward from year X–1. Therefore a loss of 350 is carried forward to year X+1. [½]

As the company receives no dividends, the adjusted BLAGAB *I–E* computation refers to income less expenses in the BLAGAB fund. There are no unrelieved expenses brought forward from year X–1. [½]

Year X BLAGAB *I–E* = 1500 – 800 = 700 [½]

The minimum profit is used to split the total taxable income in the *I–E* computation between shareholders and policyholders. [½]

The minimum profit is the surplus arising from the BLAGAB fund, so:

Year X minimum profit = 400 [½]

The minimum profit is taxable at the corporation tax rate, while any excess of the *I–E* computation over the minimum profit is taxed at the policyholder rate. [½]

So:

BLAGAB tax paid in year X = 21% on 400 + 20% on 300 = 84 + 60 = 144 [½]

A loss in one fund cannot be used to offset a profit in the other. So, adding together the BLAGAB and non-BLAGAB tax gives total tax paid of: [½]

Year X total tax paid = 144 + 0 = 144 [½]

X+1

The non-BLAGAB loss of 350 brought forward from year X is subtracted from the year X+1 non-BLAGAB profit.

Year X+1 non-BLAGAB trading profit = 450 – 350 = 100 [½]

The non-BLAGAB trading profit is then taxed at the corporation rate:

Non-BLAGAB tax paid in year X+1 = 21% on 100 = 21 [½]

The adjusted BLAGAB *I–E* computation gives:

Year X+1 BLAGAB *I-E* = 1300 – 1000 = 300 [½]

We then compare this with the minimum profit as follows:

Year X+1 minimum profit = 350 [½]

The minimum profit is larger than the *I–E* computation. Therefore the allowable expenses in the *I–E* computation are restricted and the insurer becomes XSE. Expenses of 50 from the BLAGAB fund are carried forward to year X+2. [1]

In this case all the minimum profit is taxable at the corporation tax rate. So:

BLAGAB tax paid in year X+1 = 21% on 350 = 73.5 [½]

Adding together the BLAGAB and non-BLAGAB tax gives:

Year X+1 total tax = 21 + 73.5 = 94.5 [½]

[Maximum 8]

(iii) ***Implications of taxation change***

The old taxation basis

A brief description of the current tax basis of the BLAGAB fund is a good place to start. However, the detail should be restricted to the level needed to allow subsequent comments on the implications of the proposal to be placed in context.

Currently the BLAGAB fund suffers tax, in broad terms, on its investment income including realised capital gains. [½]

We can offset against this, again in broad terms, the expenses relating to the business. [½]

The amount of tax paid then depends on the relative size of the investment income and the expenses. [½]

If the expenses exceed the investment income in a year, the excess, known as "Excess *E*", is carried forward to the following year. [½]

The new taxation basis

The consultation document is silent on certain points that could have a bearing on the implications of the proposal. The most important of these are:

- whether there will continue to be special rules relating to proprietary life insurance companies. [½]

  At the moment such companies have to pay a minimum amount of tax based on what is known as the "minimum profits test". [½]

  In what follows we have assumed that this will no longer be the case.

- whether the present qualifying rules will continue. [½]

  Qualifying contracts are more favourably taxed in the hands of the policyholder. [½]

  But qualifying contracts are subject to restrictions affecting their design. [½]

  We have assumed that they will be retained.

- whether it will be necessary to set up a separate fund in which to write new business. [½]

  The tax authorities may wish to "ring-fence" all the existing assets as belonging to existing business subject to the present tax regime. [½]

  Such a move may create problems in financing the writing of new business. [½]

  It should therefore be resisted strongly. [½]

Markers should give credit for alternative assumptions if appropriately explained.

General implications of the proposal

The amount of tax currently paid by a company depends on the relationship between its investment income and its expenses. [½]

This relationship depends on the relative volumes of new and existing business … [½]

… and the type of business a company writes. [½]

Companies that write relatively large amounts of new business compared with their existing business have substantial expenses relative to investment income … [½]

… so on the current basis they pay little if any tax … [½]

… but in the future they will pay more tax … [½]

… which means that companies not writing large amounts of new business will pay less tax … [½]

… which should benefit our company since its new business has been only moderate for a number of years. [½]

A further general implication is the effect of the change on single premium and regular premium contracts. On the present basis, both types of contract suffer tax throughout their lifetime … [½]

… but in the future, a single premium contract will only suffer tax at outset. [½]

The likely effect of this is that, from the policyholder's point of view, a single premium contract will produce a relatively less good return in future compared with regular premium contracts. [½]

This may lead to a move away from single premium contracts towards regular premium, although the two do meet different needs. [½]

For similar reasons, short-term contracts will be more heavily taxed now and long-term contracts less heavily taxed. [½]

Pricing

It is likely that, currently, the unit prices used allow for the tax payable on investment income. [½]

The tax relief available from the expenses is taken into account in setting the insurer's charges. [½]

Under the new system we will need different unit prices for new and old business … [½]

… since no tax will be payable on the investment income for new business. [½]

This can be done in one of two ways: we can link new contracts to our existing linked funds and have two different unit prices … [½]

… or we can set up new linked funds for new business. [½]

Both of the above methods involve extra administration. [1]

The charges under new contracts will need to be reset … [½]

… since in future they must allow for a tax payment instead of a tax relief. [1]

This will lead to a significant increase in the level of the charges … [½]

… which will need careful explanation to potential policyholders. [½]

All companies will be in the same position though … [½]

… so this should not affect the company's competitive position relative to other insurers in this country offering similar contracts. [½]

One possibility is to use a specific "government tax" charge of k% of each premium. [1]

The effect of the tax change on the return to policyholders is difficult to judge. [½]

Competitive position

It appears that the tax regime for other savings media, for example unit trusts, is remaining unchanged. [½]

This may make it harder for the insurer to compete with them since its charges will be perceived to be much higher. [½]

Under the current regime, higher rates of tax apply to proprietary companies compared with mutuals. [½]

It appears that this will no longer be the case and so this potentially improves the company's competitive position on savings business. [½]

It is unclear how the tax basis will compare with that of competitors from other EU countries, but overall there will probably be little change from the current relative position. [½]

Reserving

There will not be a significant effect on the non-unit reserves we shall need to hold for this business … [½]

… as the charges should be set to match the taxation payments. [½]

Investment

Under the present tax regime, capital appreciation is taxed differently from income, due to indexation and timing. [½]

This taxation approach favours equities and property with high capital growth. [½]

Under the proposed regime, both income and gains will be tax free. [½]

This means that it may be desirable to adopt a different investment strategy for the non-unit reserves for new business. [½]

It might also lead to a different investment strategy in any managed unit-linked funds, *eg* less equity and more bond investment. [½]

It will in any event be necessary, at least internally, to keep the assets representing new business separate because of the different tax basis. [½]

Surrender values

The values given on withdrawal will also need to be revised as part of the new charging structure. [½]

The likely effect will be to produce lower values at short durations in force and higher values later, compared with the current scale. [½]

This will not please consumer organisations and will need careful explanation. [½]

Administration

Irrespective of whether or not we are required to set up a separate fund for new business, we will need to do so internally. [½]

This will involve extra work and increase our expenses. [½]

[Maximum 21]