

Action Group for Banking – Comparing Bank & Life Insurer Risks

Background

The growth in bancassurance over the last two decades has increased the interaction between actuaries, other life insurance professionals and bankers, a trend which has further increased with the convergence in regulatory approaches. While there has been a fruitful exchange of ideas between both, practitioners often find that this exchange is hampered by the lack of understanding of the different risks faced by the other. This article seeks to address this gap by considering the similarities and differences in the risks faced by a typical UK bank (ABC Banking Corporation) and life insurer (XYZ Life Insurance).

The core business of both is in essence very similar: taking funds in from clients (depositors and policyholders respectively), investing these (by lending in the case of ABC) and making a spread (interest margin or annual management charge) on the return earned and that credited back to clients. However there are a number of important differences.

Firstly, ABC and XYZ serve different purposes. The primary focus of XYZ is to act as a vehicle for long-term saving. By contrast, ABC's primary focus is on lending, allowing individuals and companies to crystallise future earnings, thereby providing much needed liquidity to the economy.

Secondly ABC maintains an extensive branch network across the UK for distributing and servicing its products. By contrast, XYZ has no high-street presence, instead distributing its products through IFAs and other intermediaries.

Finally, while ABC's accounts generally seek to spread income over the lifetime of the business, XYZ's accounts include supplementary embedded value reporting. This discounts all future cash-flows arising from its in-force portfolio, effectively recognising expected future margins up-front. The resulting "value in force" (VIF) is treated as an asset on the embedded value balance sheet and changes in this are brought through the embedded value P&L.

Market Risk

Most of ABC's cashflows are matched as the cost of its funds and the rate it charges on loans are variable i.e. a rise in the former can be passed on to borrowers. It has some loans which are fixed rate which can be redeemed at par, thereby exposing ABC to interest rate risk. However rates are generally fixed for less than 5 years which together with redemption penalties and hedging strategies help to mitigate this risk.

ABC has a treasury function which is involved in hedging interest rate risk for the various business units of ABC but which also accepts market risk in respect of swaps and other derivative transactions. While its portfolio is extensive, it has systems and controls capable of daily valuation of positions and assessment of value at risk (VaR) against set limits. This is overlaid with a hedging program to manage exposures, and the function could close out its positions within a fortnight if it so desired.

By contrast, XYZ has considerable unhedged market risk exposure. It has a large with-profits portfolio which contains valuable guarantees, yet these contracts are invested in volatile assets such as equities and property to meet policyholder's expectations. Worse, these expectations extend to bonus additions to guarantees when investment conditions are favourable. In mitigation, XYZ can vary the asset mix backing these contracts within limits of policyholder expectations, selling equities when markets are falling in a similar manner to that used in portfolio insurance.

These guarantees can be viewed as exotic, path-dependent put options. Valuing these is complicated by the fact that guarantee increments and asset mix are set at an aggregate level across all contracts. Therefore, while ABC's treasury function can value each derivative contract on its own, XYZ must value all contracts with guarantees simultaneously i.e. its valuation systems must process each contract in parallel rather than sequentially.

Moreover, valuation must be by Monte-Carlo sampling as the nature of the guarantees means these are not tractable by formulaic means. Consequently the time taken to run models, value the guarantees and assess VaR can be measured in days and weeks rather than hours. Hedging out such a complex position could take up to a year or more, particularly as the FSA would need to be satisfied that any hedged investment strategy would not prejudice policyholder expectations.

Additionally, for unit-linked business the annual management charge XYZ levies will be affected by market returns. Falling markets impact not only on the charge income arising in an accounting year, but may also impair the VIF of this business on the embedded value balance sheet, exacerbating losses.

XYZ could hedge some of this VIF risk using futures and forwards. However the scope for doing this is limited by the fact that the management charges relate to a diverse and ever-changing mix of assets. Furthermore, there are regulatory constraints to the use of derivatives in life funds, as well as the residual liquidity risk arising from having to meet margin calls when any gain is in an illiquid VIF asset.

In one area of market risk ABC and XYZ are very similar. Both have final salary schemes which, while closed, continue to expose their balance sheets to falls in scheme assets and the impact of bond yields on the value of liabilities.

Credit Risk

ABC's core business involves making loans to retail and corporate clients. Such loans cannot be readily traded and could potentially expose ABC to the risk of counterparty failure for terms of up to 25 years or more. ABC has extensive systems and controls to mitigate this risk, and regards its ability to assess such credit risk as a core competence.

At the heart of its systems and controls are detailed lending policies covering topics as diverse as the environmental risks associated with collateral to lending to hedge funds. This is supplemented by detailed exposure limits for different types of risk, including limits on term (or "tenor") and sector limits as well as credit scoring models which are increasing in importance with the Basel II regime.

ABC has the option to increase the spread on its loans to reflect credit losses. However the scope to do this is limited by competition. Also, an increasing number of its loans are tracker mortgages where, while rates are variable, they explicitly track the Bank of England base rate and so the spread can be said to be fixed. Similarly, spreads cannot be varied on hedged fixed rate mortgages during the fixed rate period.

XYZ invests in corporate bonds on behalf of its investors, and uses these to back guaranteed liabilities it faces. Such bonds are listed on securities exchanges and exposure can be readily traded. XYZ limits itself to investment grade bonds and while it has criteria related to the credit rating of these issues, neither its limit structure nor its credit risk policy is as comprehensive as ABC's. Given the transient nature of exposures, the emphasis is more on managing credit events such as downgrades, takeovers etc. than the long term risk of default.

XYZ is also exposed to credit risk in respect of cash deposits; to the tenants of its property holdings and in respect of over-the-counter derivatives it enters into from time to time for hedging or efficient portfolio management purposes. It also has considerable exposure to reinsurance counterparties. As for bonds, the limits on exposure and policies governing these credit risks are not as detailed as ABC's.

The credit risk of ABC and XYZ overlap in two areas: firstly ABC has a program of securitising its loans in which XYZ may sometimes invest. Secondly, both are increasingly involved in credit derivatives. XYZ is interested in the enhanced yields offered by Collateralised Debt Obligations, while ABC is interested in the income for accepting risk from the credit default swaps which underpin these, as well as the ability to hedge credit risk through these swaps.

Finally it is worth noting that recent market concerns over credit risk, which have increased the spread of LIBOR over base rate, and lead to many corporate loan issues being withdrawn, has also adversely affected life offices' corporate bond portfolios, highlighting the link between corporate banking and life insurance credit risk exposures.

Insurance Risk

XYZ will obviously be affected by insurance risk such as increased mortality rates leading to losses on assurances, and the longevity risk of increased life expectancy on annuities.

ABC may be thought to be unaffected by insurance risk, but death and disability will affect the ability of individual borrowers to repay loans, though this is mitigated if the borrower takes out payment protection or other insurance.

More significantly, ABC is involved in equity release mortgages, lending over the lifetime of the borrower with no repayments during time and interest rolling up. Like other such lenders it guarantees that on death or entry to long term care, the accumulated loan will not be greater than the value of the underlying property. This "no negative equity" guarantee is effectively a put option on the value of the property and as well as the market risk (relating to house price inflation) involved, there is a longevity risk as the exercise price of the option and its value will increase the longer the borrower lives.

ABC also has a distribution deal with a general insurance company to sell personal lines insurance to its customers which includes a profit share arrangement. This exposes ABC's P&L result to variations in claims on these products which is a form of insurance risk.

Finally, both ABC and XYZ are exposed to the longevity risk associated with their final salary schemes. Recently, the Pensions Regulator questioned the strength of longevity assumptions used by final salary schemes, and the management of both institutions are considering strengthening assumptions in light of this, with negative implications for the balance sheet value of the schemes under IAS19.

Persistency Risk

Most of XYZ's contracts contain the option to terminate the contract early and withdraw funds. As noted, XYZ distributes through intermediaries who are usually remunerated by an initial commission payment. There is a risk that this and other costs incurred on setting up a policy may not be recouped on early withdrawal, although commission may be partially clawed back.

In the past, XYZ had either discretion as to the terms it offered to those withdrawing from its with-profit policies; or the contract design allowed for withdrawal penalties; or charges were "front end" loaded i.e. with higher charges levied in early years to recoup initial costs. This allowed initial costs to be recouped, and in some cases, early withdrawals could be a source of profit. However regulatory and competitive pressures have limited the scope for discretion and deterred surrender penalties for new contracts. This has increased the risk that initial costs are not recovered on early withdrawals.

There is also the loss of future profit margins on withdrawal. This is significant as such margins have been incorporated in the VIF asset on its embedded value balance sheet. While the VIF calculation will allow for early withdrawals, higher than expected withdrawals will impair this VIF asset, particularly if these trigger a wider revision of withdrawal assumptions. This has happened of late, as pensions simplification has led to higher withdrawals on pension contracts. The resulting charges to accounts have attracted considerable negative comment on XYZ from analysts.

By contrast, ABC's withdrawal levels draw less comment, despite having higher levels on mortgages than XYZ usually suffers on its products. Withdrawals affect both the assets and liabilities of ABC. On the liability side, withdrawals of funds need to be replaced by attracting fresh funds. This can be significant if retail funds have to be replaced by more expensive wholesale funds from other financial institutions, reducing spreads.

On the asset side, withdrawals take the form of early loan redemptions. When a loan is redeemed early, an income stream relating to excess of loan interest over the cost of funds ceases. To maintain profitability another income stream needs to be found i.e. ABC needs to make another loan to replace any going off its books. To do so, it will incur further costs, often having to offer temporary discounts to its rates to attract new custom. It then has the same issue as in recouping costs.

So early loan redemptions will impair the economic value of ABC's in-force loan book. However, unlike XYZ with its embedded value reporting, such value in-force is not recognised on ABC's balance sheet.

Therefore withdrawals will not directly affect ABC's balance sheet, nor usually its share price, in the same way as life companies, though the indirect impacts on the cost of funds and interest rate spreads will affect stockmarket valuations

One aspect of persistency risk that does directly affect ABC's balance sheet directly is early redemptions on fixed rate loans, as these are redeemed at par but the value of the loan may be greater than par when interest rates are low. This prepayment risk is closely monitored, but fixed rate terms are generally short and redemption penalties may partially recoup some of the loss.

Note that the UK with its variable rate mortgages is different from the US and the continent, where mortgages are mostly fixed. In the US in particular, prepayment experience analysis is very sophisticated partly due to the involvement of investment banks in trading mortgage securities such as Collateralised Mortgage Obligations.

Expense Risk

XYZ enters into long-term contracts and there is a risk that the charges arising on these may not cover the ongoing cost of servicing the contracts, investing funds and meeting overheads. Historically this risk was mitigated as contracts either allowed costs to be implicitly charged back to investors in returns credited (with-profits), or had explicit service charges which could be varied in line with costs inflation (unit-linked).

However, regulatory pressure has limited the scope to reflect costs implicitly in returns for the former type of contract. Moreover the Unfair Terms in Consumer Contracts Regulations 1995 (UTCCR) have restricted the ability to vary service charges and other contract terms. In effect, increasing service charges by more than earnings inflation is difficult if not impossible. This represents a significant expense risk to XYZ as per contract costs may rise at a faster rate if XYZ's portfolio were to shrink and each contract has to bear a higher share of overheads.

This expense risk has become more acute on XYZ's newer contracts. The UK government's "Stakeholder" product regulations have led to XYZ writing business where the only charge levied is an annual management charge. This means charge income is "back-end" loaded to the latter stages of the contract's term, and as well as making this income stream more vulnerable to withdrawals, also increases the risk that charges in the early years are not sufficient to cover costs. Furthermore, where XYZ writes Stakeholder policies, the charge itself is capped.

By virtue of distributing through brokers, XYZ at least does not need to maintain an expensive branch network like that of ABC. The costs of this are effectively fixed in the short- to medium-term, and ABC is faced with the challenge of meeting these fixed costs out of its interest spread and other charge income.

Unlike XYZ however, ABC does have considerable freedom in its ability to vary the spread and other charges under its products. The interest rate on most loans can be varied where necessary to widen the spread. This is tempered by the competitive implications and the risk that any rate increase will trigger early redemptions. Furthermore this flexibility is not present on tracker or fixed rate mortgages. Of increasing importance to ABC are the other charges that it can levy. While increased competition has reduced the interest rate spread, ABC has made good the difference by increasing other charges by rates well in excess of inflation. For example, like other lenders, it has increased some loan redemption penalties by over 100% in recent years.

Thus despite a large fixed cost base, ABC does not face the same level of expense risk as XYZ because of the flexibility of its charging structure. However this flexibility is currently under threat as consumers challenge the scale of charges and increases in these on UTCCR grounds. ABC has recently ceded on some such challenges and while it hopes to recoup the lost income by increasing other charges, such regulatory pressure may mean that in future the ability to pass on increased costs will be restricted and that expense risk will become a greater issue for institutions like ABC.

Liquidity Risk

ABC raises predominantly short-term funds to make medium- to long-term loans which are not readily realisable. This exposes it to liquidity risk of being unable to repay the former as they falls due, particularly as these funds can be called in at short notice. A surge in such calls has led to bank insolvencies in the past.

ABC pays considerable attention to its liquidity position and regularly conducts stress and scenario tests to ensure it can withstand surges in withdrawals. This also helps it to demonstrate that it meets the Bank of England's Stock Liquidity Requirement (SLR) of liquid resources under stress situations. It is also adept at securitisation, packaging its illiquid loans into tradable instruments to enhance liquidity.

By contrast, XYZ obtains funds on a long-term basis and invests the bulk of these in readily realisable assets (with the notable exception of property). Also, until recently, premium inflows have exceeded claim outgoings. Therefore liquidity risk has not been a significant issue for XYZ.

However, the position is changing as XYZ's investment contract portfolio matures. Claims now frequently exceed premium inflows. Moreover, most investors have the option to terminate contracts and withdraw funds. XYZ could face a similar run as that faced by ABC. The nature of its business means it is not set up to process such mass withdrawals which may limit the impact on liquid resources in the short term, but this means that any liquidity crisis will be more protracted than that faced by ABC as well as posing considerable operational challenges. Spurred on by regulatory requirements, XYZ is now devoting more time to monitoring and stress testing liquidity risk.

While most of XYZ's assets are readily realisable, this is not the case with the VIF asset on its embedded value balance sheet. Therefore XYZ is considering monetising this asset through securitisation or reinsurance financing to enhance its liquidity, following the paths of banks in this regard.

Operational Risk

Both institutions share a wide range of operational risks, from employee relations to processing failures.

One particular risk is misselling. XYZ distributes mainly through brokers, but it has a small direct sales force for which it is responsible. In common with other life companies, this responsibility led to pensions and mortgage endowment misselling claims from the late 1990s to the present date. Chastened by this experience, it has strengthened its compliance function to prevent further recurrence, but the risk from direct selling is still there.

Meanwhile, ABC used to act as an appointed representative of a life company who bore the cost of the pensions and mortgage endowment misselling by ABC sales staff. Now however ABC is directly responsible for its sales and for misselling risk. As well as long-term investments, ABC is also faced with increasing obligations in relation to its sales of mortgages and of general insurance products under the FSA's new conduct of business regime for these.

In general there has been a shift in misselling risk from life companies to banks, with the former no longer accepting the latter's exposure as an appointed representative, while banks face stricter regulation of sales of non-life insurance products.

Another area of concern is the risk of external fraud. This has been an ever present problem for banks like ABC, who have introduced "chip and PIN" to combat fraud. However, fraudsters have become more sophisticated, and banks continue to suffer external fraud losses, while fraudsters have also turned their attention to life companies like XYZ.

Both ABC and XYZ are vulnerable to regulatory risk such as FSA challenges to practice on Treating Customers Fairly grounds and further challenges under UTCCR. As noted, the latter could limit ABC's charge income but could also affect XYZ's ability to review premiums e.g. on protection products.

A key difference in the operational risk exposure of ABC and XYZ is its impact on their P&L accounts and balance sheets. For the former, an adverse UTCCR ruling will have a modest in-period impact on income, but the full economic loss of any restriction on charges will not come through immediately unless a provision is required. For XYZ however, such a reduction in future charge income would be crystallised in full in a write down of VIF in embedded value balance sheets.

Another difference is the regulatory capital requirements for operational risk. For ABC, operational risk will form part of its Pillar I regulatory requirement from 2008, and it has spent considerable resources on its operational risk control framework, in gathering operational loss data and on modelling operational risk in advance of this date. It also is seeking to differentiate between expected – high frequency, typically low impact losses – and unexpected components, with the former assumed to be covered by future profits arising and with capital only required for the latter.

For XYZ, operational risk is not currently part of its Pillar I requirement and it has hitherto not devoted the same level of resources as ABC on framework, loss capture and operational risk modelling. However, the FSA expect operational risk to be covered in its Pillar II Individual Capital Assessment (ICA), and operational risk is a key reason why the FSA may require additional capital on top of that assessed as part of its Individual Capital Guidance. Therefore XYZ and other life offices are increasing their efforts on operational risk loss modelling. Note that the distinction between expected and unexpected components is less relevant to a life office as the ICA will already take into account future profits arising as the VIF is generally allowed for in ICA capital. There may however be a need to allow for some level of expected losses beyond the one year time horizon typically used for ICA, reflecting operational loss exposure over the remaining lifetime of contracts.

Aggregation and Diversification

Both XYZ and ABC face similar risks. However the importance of each risk type differs. For ABC, the largest risk is credit risk, though arguably persistency risk can be just as significant if the impact of withdrawals on economic value is considered. Market risk is modest due to extensive hedging operations, while operational risk, though significant, is assumed to be substantially uncorrelated with other risks.

For XYZ, credit risk is not as important as it is with banks. The largest risk is market risk due to the guarantees on legacy contracts and the impact of market risk on VIF. This is followed by persistency and insurance risk. The latter is not strongly correlated with market risk, and substantial diversification is available. Operational risk is significant, and may be assumed to be correlated to market risk, due to the impact of market falls on the likelihood and impact of misselling claims.

Conclusion

Both ABC and XYZ have more in common than they think, and both can learn from the other in the management of different risks. Life insurance companies like XYZ could learn from bank's management of credit risk, as well their systems and controls for monitoring and hedging market risk and their work on liquidity risk.

Meanwhile, banks could make use of life company techniques for quantifying and monitoring the economic value lost on early withdrawals to supplement their own work on customer relationship management. In addition, they could benefit from life companies' work on longevity risk in assessing the risks associated with equity release mortgages and their own pension scheme liabilities.

Life offices also offer banks an uncomfortable example of how UTCCR and other regulatory factors may restrict their freedom to vary charges. While the outcome of current challenges is uncertain, banks may have to learn life office techniques in managing expense risks on long-term products within a restricted charging structure.

Finally, both banks and life insurance companies have a lot to learn from each on operational risk. While banks are more advanced in modelling this risk, life companies have possibly more experience of the regulatory challenges to operational risk models by virtue of the FSA's current reviews of ICA. Banks may also learn from life office's experience of misselling, if only to avoid repeating the mistakes life offices made in selling personal pensions and mortgage endowments.