TOXIC ASSETS

RELEVANT TO ACCA QUALIFICATION PAPER P4

Assets are the good guys on the balance sheet? Well only when they are not toxic. 'Toxic asset' is the term the international media is using to describe the range of financial products traded by banks and other financial institutions in order to earn income and lay off risk. So what are toxic assets and how are they implicated in the financial crisis that swept the world in October 2008?

THE ROOTS OF THE BANKING CRISIS

To understand the roots of this crisis we need to look back at the various attempts made by successive US administrations to enhance the availability of credit for home loans across all levels of income, geographical locations, and social groups.

Since the 1970s, the Community Reinvestment Act (CRA) (and the various amendments made to it) attempted to break down what were believed to be the discriminatory lending practices of US banks. The CRA gave the federal authorities the power to pursue financial institutions that 'red lined' neighbourhoods in the poorer inner city areas. Banks, and other 'depository institutions', came under close scrutiny to ensure that they acted to make credit available to all sectors of society. The two great US mortgage providers, the Federal Home Loan Mortgage Corporation and Federal National Mortgage Association (nicknamed 'Freddie Mac' and 'Fannie Mae' respectively), and other banks started to grant mortgages to people who, under normal banking criteria, presented a very high risk of default. These were the so called 'sub-prime mortgages'.

There has been considerable debate about the influence of the CRA in creating what subsequently became the sub-prime crisis. However, there is a view that many banks were forced to enter a high-risk section of the credit market which they would not have considered had they used normal commercial criteria. As a result, since the 1990s there has been a wave of aggressive selling of sub-prime mortgages, often to individuals who had no realistic prospect of ever repaying their debt.

SECURITISATION THROUGH COLLATERALISED DEBT OBLIGATIONS (CDOs)

When banks lend through mortgages, credit cards, car loans or other forms of credit, they invariably move to 'lay off' their risk by a process of securitisation. Such loans are an asset on the balance sheet, representing cash flow to the bank in future years through interest payments and eventual repayment of the principal sum involved. By securitising the loans, the bank removes the risk attached to its future cash receipts and converts the loan back into cash which it can lend again, and so on, in an expanding cycle of credit formation.

Securitisation is achieved by transferring the lending to specifically created companies called 'special purpose vehicles' (SPVs). In the case of conventional mortgages, the SPV effectively purchases a bank's mortgage book for cash which is raised through the issue of bonds backed by the income stream flowing from the mortgage holder. In the case of sub-prime mortgages, the high levels of risk called for a different type of securitisation, achieved by the creation of derivative-style instruments known as 'collateralised debt obligations' or CDOs.

CDOs are a way of repackaging the risk of a large number of risky assets such as sub-prime mortgages. Unlike a bond issue, where the risk is spread thinly between all the bond holders, CDOs concentrate the risk into investment layers or 'tranches', so that some investors take proportionately more of the risk for a bigger return and others take little or no risk for a much lower return.

Each tranche of CDOs is securitised and 'priced' on issue to give the appropriate yield to the investors. The investment grade tranche of CDOs will be the most highly priced, giving a low yield but with low risk attached. At the other end, the 'equity' tranche carries the bulk of the risk – it will be very lowly priced but with a high potential, but very risky, yield. There is more detail on this in the next section.

CDOs are, therefore, a mechanism whereby losses are transferred to investors with the highest appetite for risk (such as hedge funds), leaving the bulk of CDOs' investors (mainly other banks) with a low risk source of cash flow.

THE STRUCTURE OF CDOs

The typical structure of CDOs is as follows.

For each pool of mortgages taken over by the SPV, three tranches of CDOs are created:

- **Tranche 1** (highest risk) known as the 'equity' tranche and normally comprising 5–10% of the value of the mortgages in the pool. Throughout the CDOs' life, the equity tranche will absorb any losses brought about by default on the part of mortgage holders, up to the point that the principal underpinning the tranche is exhausted. At this point the investment is worthless.
- **Tranche 2** (intermediate risk or 'mezzanine' tranche) consists of around 10% of the principal and will absorb any losses not absorbed by the equity tranche until the point at which its principal is also exhausted.
- **Tranche 3** (AAA or 'senior' tranche) consists of the balance of the pool value and will absorb any residual losses.

The proportion of the principal held in each tranche is known as the CDO 'structure', and if there is perceived to be little risk of default then the percentage of value in the mortgage pool forming the equity and mezzanine tranches will be quite small. However, if the risk is high then CDOs will be created with a greater proportion of the principal in the equity and mezzanine tranches and a relatively smaller proportion in the senior tranche.

When cash flows are received from borrowers in the form of interest payments and loan repayments, these payments are paid to tranche 3 first until their obligation is fulfilled, then tranche 2, and anything left over is paid to the equity tranche. Any defaults hit tranche 1 first, then tranche 2 and so on. The repayments represent a 'waterfall' of cash with the investors holding the tranches like buckets. The senior tranches get filled first, the mezzanine holders get filled next and anything left falls into the equity pools at the bottom.

WHAT WENT WRONG?

When the sub-prime mortgages were issued no one knew which ones would eventually default,

but the issuers recognised (or, in the case of the US market, presumed) that the overwhelming majority of borrowers would repay their interest and their debt on the due date. When the sub-prime mortgages were issued, the perception was that with high employment in the US, and rising property prices, most of the CDOs' principal could be safely located in the senior tranche, with relatively smaller amounts allocated to the mezzanine and equity tranches. The rating agencies had a critical role to play, in that they validated the construction of the sub-prime CDOs and graded the tranches. Up until 2005, many CDOs were constructed with very optimistic structures so that when the defaults started to occur it was not just the equity tranches that were left unfulfilled, but also the mezzanine and then progressively the previously AAA-rated senior grade tranches.

Under US Securities Exchange Commission rules, CDOs could only be traded between banks and other financial institutions. So at the start of the credit crisis, given that CDOs and other mortgage-backed assets had been traded bank to bank, a trillion dollars of sub-prime debt was sitting on bank balance sheets in the form of what they believed to be very low risk, investment grade securities. With plummeting property values, many sub-prime borrowers found themselves in negative equity; rising unemployment resulted in a significant increase in the number of defaults and a 'drying up' of the liquidity that the CDOs required to satisfy their investors. Indeed, the drying up of the cash flow from mortgage holders meant that not only the equity but also the higher tranches in the CDO structures became unfunded. It was when the effect was felt on the slice of mortgage value held in the senior tranche that banks began to worry.

The banks also faced another problem – how to value CDOs. There were models of varying degrees of complexity, but there was no effective market from which a price could be taken. The CDOs could not be 'marked to market' but had to be 'marked to model' in the bank's balance sheets. Suspicion grew across the financial markets that some bank balance sheets were carrying large amounts of CDOs which were not worth what they appeared to be. Banks and other institutions with funds to lend took the view that quite possibly other banks were carrying assets which on a true market value might be worth less than the value of the bank's liabilities. In other words the banks would be in negative equity.

Unlike most other commercial enterprises, banks are very highly geared with typically less than 10% of their asset value covered by equity. A drastic loss of asset value can soon wipe out a bank's equity account and it was this risk which led some banks to start unloading their asset-backed securities on to the market. But the sellers in this restricted market could not find buyers; as a result, the values at which these assets could be sold went into freefall and the banking system entered into what many considered to be a death spiral.

The problem was that the trillions of dollars of sub-prime debt issued in the US had become distributed across the global markets and indeed, smaller sub-prime problems began to occur in other countries where banks (such as Northern Rock, a British bank) had issued asset-backed securities to refinance the issue of further sub-prime mortgages in burgeoning property markets. Banks that had stayed free of the problem began to suspect the credit worthiness of other banks and, as a result, became reluctant to lend on the interbank market. LIBOR, the rate at which banks lend short term, began to rise, thereby threatening the liquidity of banking operations and so a credit squeeze became a crunch.

The danger with a situation such as this is that the fundamental vulnerability of banks to risk soon feeds through into the real economy, as credit begins to dry up and borrowing rates rise because of the scarcity of supply of willing lenders. Home buyers cannot raise mortgages and, as a result, property prices fall, further exacerbating the crisis. A recession in the real economy, with job losses and insolvencies, means that more people default on their home loans. Consumer confidence begins to deteriorate and, as a result, previously strong economies begin to slow down.

IS THERE A SOLUTION?

There are a number of ways out of this crisis – but all are painful. The US solution is for the federal government to buy up the so-called toxic assets from banks, and up to $850bn has been set aside for that purpose. The UK solution is for the government to inject new capital into banks through preference shares, and to support the operation of the money markets by offering loan guarantees and by lending to troubled banks. There is a serious risk that no amount of government intervention will restore confidence, with the result that the banking sector is no longer able to service the money markets. In this situation, the government investment will incur significant losses. However, the other side of the coin is that the banks recover – something akin to normal business resumes – and the governments concerned walk away with large capital gains. Only one problem remains: what to do about the toxic assets.

Part of the problem is that there is no market for securities of this type apart from the financial institutions. This means that the market value CDOs and similar instruments is far lower than the intrinsic value of the underlying pool of mortgages (the present value of their associated income stream and repayments). Ultimately, if held long enough, at least some of the underlying mortgages will be redeemed. However, that is beyond the time horizon of any government, so they will need to create a new market where investors looking for a speculative investment can freely trade this debt out of the tight circle of financial institutions and governments that hold it. Indeed, the creation of such a market could be the missing piece of the jigsaw required to restore confidence and get the financial world working again.

Bob Ryan is examiner for Paper P4