

(1) Explain the main risks to which banking activity is subject and outline the steps which banks can take to minimise these risks?

There are many types of risk that banks are vulnerable to but there are three main types.

Payment risk, this obviously peculiar to banking and arises from the possibility that the instruction to a bank to make payment, may occur before the funds arise with which to make the payment. Arises specifically from banks role in the payments mechanism. The obvious case is where someone presents a cheque drawn on another bank and asks for immediate payment. It could take up to five working days for the collecting bank to discover that the cheque has been dishonoured, so it pays immediately it risks not receiving payment. This risk is endemic in my system of 'deferred net settlement'. For cheques the solution is for the collecting bank to refuse to pay until the funds are received. But the biggest risk used to arise from the 'CHAPS' it day payment system. CHAPS allow the payee to receive funds the moment the instruction to pay is issued while the funds followed usually at the end of the day. Some of these payments (especially in the forex market) were larger than a bank's whole capital. But CHAPS has a problem to with risk, receiver risk arises. This arises when a system member provides funds to its customers, having received a payment instruction from another member but before final settlement. The receiving bank that has offered irrevocable funds to its customers is exposed to the sending bank until final settlement occurs at the end of the day. Those customers receiving funds before settlement may then initiate further transfers, creating additional obligations for their settlement banks. This may be repeated several times during a day, building up large exposures. If one the settlement banks were to fail before final settlement the other members would be deprived of the money needed to fund their own payments. Thus a failure at one bank may lead to a settlement failures at other banks and create a systemic crisis.

The solution to this problem is to move from end-of-day net settlement to real-time gross settlement (RTGS). This requires that all interbank transactions be recorded in the accounts of the central bank as they occur. It is then possible to structure the system so that a settlement bank receives an incoming payment instruction only after the payment has been settled by the central bank. Thus there is little scope for them to pass funds to their customers before final settlement. All payment systems are now changing to this.

Liquidity risk refers to the possibility that a bank may not have the funds with which to meet the demand for payment when it falls due. It arises from banks involvement in maturity transformation. Many liabilities are liable to payment on demand while the assets backing them cannot be liquidated for months or longer. The risk that the demand for payment may exceed the available supply of liquid assets can occur, even if a bank is perfectly solvent. Solvency requires that total assets exceed liabilities.

Liquidity risk involves the matching of a subset of assets/liabilities.

One obvious solution would be to hold liquid assets exactly equal to these demand liabilities. In practice this would mean holding a matching quantity of notes and coin, or notes and coin combined with deposits at the central bank, which banks can exchange for notes and coin instantly. The problem with this solution is that such

liquid assets yield no interest. These are no earning assets and as such act as a tax on banking activity.

In the early years of banking, when banks were small and confidence in the convertibility of deposits into cash was less well established than it is today, it was found necessary for the system to have a 'lender of last resort', a role assumed by the central bank. This meant that if the system were faced with an unexpected demand for convertibility, banks which had insufficient reserves but were otherwise solvent and well managed, would be guaranteed adequate liquidity by being able to borrow from the central bank. Instead of helping banks in occasional crises, central banks now typically provide liquidity on a day-to-day basis in order to smooth out fluctuations in bank reserves that arise from payments between public and private sectors, and to ensure that banks always have funds available to meet the demand for loans, which grows with the level of economic activity.

Holding sufficient notes and coin and other assets, like deposits at the central bank that are virtually cash assets, is an obvious way of dealing with the liquidity risk that arises from the possibility that holders of sight deposits may demand instant withdrawal. This is why, compared to other intermediaries, banks tend to hold a large quantity of short-term, money market, assets like bills and short-dated government bonds. These can be sold quickly, with little risk to their value in the event of a liquidity shortage and yet they still yield positive return. In most countries, recent years have seen the rapid growth of the 'interbank' market as one of the wider group of money markets. The interbank market allows banks with surplus funds to deposit them with other banks, at interest, for very short periods, often overnight. This is another source of liquidity, which banks short of reserves can tap. It reduces their need to hold surplus reserves against possibly foreseen events. In doing this, the interbank market spreads the existing stock of liquidity across the system as a whole more closely according to need. Banks with a surplus of reserves can lend to banks that are short and would otherwise be constrained in their lending/deposit-taking. This in turn helps the system as a whole to create a quantity of loans and deposits closer to the limits set by the availability of aggregate reserves.

Asset risk refers to the probability that the value of assets may differ from what is expected. This can happen because borrowers default, or because a change in interest rates causes the value of assets to change. Notice that a change in interest rates also affects the income received from assets. Some assets and liabilities will pay a variable interest rate. If these are equal in value, then a rise in interest rates will have no effect on banks net income. But if, say a bank has more variable rate liabilities than assets then a rise in interest rates produces a fall in net income, while a fall in rates produces a rise in net income.

Diversification does nothing to reduce the risk associated with individual assets, but it assumes that assets are always held in combination and diversification can reduce the risk of the portfolio by exploiting the fact that asset returns are to some extent independent of each other. At any time, some assets may be under performing their long-run average while other will be over performing. Given some degree of independence, these differences will cancel each other out.

Holding short-dated assets exploits the fact that the value of assets with a short period to maturity is less affected by a change in interest rates than assets with a long maturity.

A bank can minimise the risk of default on an individual advance by, e.g. considering the use of the loaned funds and the financial circumstances of the borrower. Credit

scoring plays an increasing role in selecting good risks in consumer lending. Under credit scoring a potential borrower is asked a standard set of questions relating to factors such as age, assets held, financial commitments, and on the basis of the answer a score is calculated reflecting the credit risk of the person. The use of credit scoring has largely replaced judgement in determining whether to grant a loan and can easily be automated, so reducing the costs of acquiring information to judge a borrower's suitability. Another method of reducing risk for the lender is to require the borrower to provide security over the borrower's assets. In the event of the borrower defaulting the bank can sell the secured assets and recover part or the entire loan. A well-known type of secured lending is mortgage lending, where the property is used as security. Second, a bank can increase the predictability of default by spreading its loan portfolio over many borrowers. This is known as pooling risks and requires the bank to make a large number of small loans rather than a small number of large loans. The bank then can rely on the law of large numbers to achieve a smaller variation in loan loss experience so that the actual loan loss will be very close to the average loan loss experience for that type of business. This outcome depends critically on the default risks across the loan portfolio being independent. To achieve this the bank needs to diversify its loans over different types of borrower. International diversification of loans may help to reduce this problem.

In addition, banks are subject to many risks, which all firms face to a greater, or lesser extent these are foreign exchange risk, sovereign risk, political risk and operation risk.