

Securitization

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9.1 INTRODUCTION

In this chapter we consider the role of securitization in banking and we concentrate on the economics of the process rather than the precise administrative detail. It is first of all necessary to distinguish between securitization *per se* and asset-backed securitization (ABS). Cumming (1987) defines securitization as the process of 'matching up of borrowers and savers wholly or partly by way of financial markets'. This definition includes: (i) the issuing of financial securities by firms as opposed to raising loans from banks; (ii) deposits with non-bank financial intermediaries who themselves hold financial securities; (iii) asset-backed securities – i.e. sales of financial securities – which are themselves backed by other financial assets. In Section 9.2 we consider sales of securities through financial markets, which involves a measure of disintermediation, and in Section 9.3 we consider asset-backed securitization. The process of ABS is discussed in Section 9.4 and the gains from the process are considered in Section 9.5. Our conclusions are presented in Section 9.6.

First of all it is useful to consider intermediation as a bundle of separate services, namely:

1. Location of a creditworthy borrower, i.e. *loan origination*.
2. Funds secured through designing securities that are attractive to savers, in the case of bank deposits, i.e. *loan finding*.

3. Administering and enforcing loan conditions, i.e. *loan servicing*.
4. Holding the loan in the lender's portfolio of assets, i.e. *loan warehousing*.

These services can easily be unbundled into their separate components. For example, a bank can check out the creditworthiness of a prospective borrower (loan origination) and pass on the debt by selling it to another institution. This is the process of ABS discussed in Section 9.3. Alternatively, the whole process can be bypassed by selling securities directly on the capital market and we discuss this process in Section 9.2.

As a prerequisite to the study of securitization, it is instructive to describe the cost to the bank of holding loans on the balance sheet and the cost to the borrower of the loan. As a prerequisite to the study of securitization, it is also instructive to set up a simple model of bank lending describing the cost of holding loans (CHL) on a bank's balance sheet and the cost to the borrower of the loan. For a loan to be profitable to the bank, the lending rate must cover the sum of (i) the deposit rate plus any insurance premium, (ii) the return on the capital required by that loan, and administrative costs involved in making and monitoring the loan, (iii) regulatory costs and (iv) the expected default rate on loans.¹ This is captured in equation (9.1) and derived from Box 9.1, where the CHL represents the cost to the bank of holding loans on its books:

$$CHL = r_E + \left(\frac{1 - \epsilon}{1 - k} \right) (r_D + g) + C_L + \rho \quad (9.1)$$

where ϵ is the capital-to-asset ratio, k is the required reserve ratio, r_E is the required rate of return on equity, C_L is the marginal administrative and servicing costs, ρ is the expected rate of loan default, r_D is the deposit rate and g represents the regulatory costs including deposit insurance.

Assuming that the bank is a price taker (i.e. the market is competitive), the price, the loan rate (r_L), will equal the marginal cost of attracting funds, so

$$r_L = r_E + \left(\frac{1 - \epsilon}{1 - k} \right) (r_D + g) + C_L + \rho \quad (9.2)$$

Thus, the spread (S) between the loan rate and the deposit rate is given by

$$S_L = r_E + \left(\frac{1 - \epsilon}{1 - k} \right) (r_D + g) + C_L + \rho - r_D \quad (9.3)$$

Hence, S_L will rise with a rise in r_E ,² (provided $r_E > r_D/(1 - k)$), k and g .

From the above expression we can see that more onerous capital requirements (ϵ) and regulatory costs (g) would have tended to raise S_L in the absence of a fall in marginal operating costs (C_L) as discussed in Chapter 1. The influence of these increased costs on firms' borrowing from banks is discussed in Chapter 9, Section 9.2.2.

We now turn to an examination of the sales of securities through financial markets.

¹ For the sake of ease of exposition, (i) we assume the expected loss rate is constant across loans at any point of time and (ii) we ignore income taxes and loan fees.

BOX 9.1 Cost to the bank of holding loans on its balance sheet

The balance sheet of the representative bank is given by

$$L + R = D + E \quad (9.1.1)$$

where L is loans, R is reserves, D is deposits and E is equity capital.

Assume that the bank faces a required reserve ratio $k = R/D$ and a capital-asset ratio $\epsilon = E/L$. Then the balance sheet can be written as

$$L(1 - \phi) = D(1 - k) \quad (9.1.2)$$

or

$$D = \frac{(1 - \epsilon)L}{(1 - k)}$$

Let the required return on equity be denoted by r_E , the expected rate of loan default by ρ , the loan rate by r_L , the deposit rate by r_D , the regulatory costs including insurance by g and the administrative cost function by the function $C(L)$, with $C_L > 0$. The objective of the bank is to maximize expected profit subject to the balance sheet constraint

$$E(\pi) = r_L L - r_D D - r_E E - \rho L - C(L) - gD \quad (9.1.3)$$

Substituting from (9.1.2) above yields

$$E(\pi) = r_L L - r_D \left(\frac{1 - \epsilon}{1 - k} \right) L - r_E \epsilon L - \rho L - C(L) - g \left(\frac{1 - \epsilon}{1 - k} \right) L$$

Optimizing with respect to L and taking the first-order conditions gives

$$\frac{dE(\pi)}{dL} = r_L - r_D \left(\frac{1 - \epsilon}{1 - k} \right) - r_E \epsilon - \rho - C_L - g \left(\frac{1 - \epsilon}{1 - k} \right) = 0$$

Rearranging this expression, we have equation (9.2) in the text.

$$r_L = r_E + \left(\frac{1 - \epsilon}{1 - k} \right) (r_D + g) + C_L + \rho$$

9.2 SALES OF SECURITIES THROUGH FINANCIAL MARKETS

This type of securitization can be considered as involving three categories, namely direct replacement of debt claims (Section 9.2.1), direct placement of debt claims underwritten in the financial markets (Section 9.2.2) and holdings of securities by non-banks through deposit replacement (Section 9.2.3). One of the main reasons for this type of securitization is that many large borrowers have had a higher credit rating than the lending banks themselves and can therefore finance by tapping financial markets at a lower cost than by borrowing from banks. Secondly, regulator costs have risen. There are two components to this cost: (1) the cost external to the banks, namely that of the regulator; (2) the costs incurred directly by banks in providing the administrative detail necessary for prudential control and also deposit insurance. It is this latter cost that is represented by g in equation (9.1), and it is argued that this has increased over recent years. This raises the spread between loan and deposit rates, as shown in equation (9.2), and provides an impetus for sales of securities through financial markets. Thirdly, there has been a considerable growth in technologies which permits the development of more sophisticated financial instruments.

9.2.1 Direct Replacement

Direct replacement requires the replacement of bank loans with the sale of securities such as bonds or equity on the financial markets. Most sales of such securities are underwritten by financial institutions, so the banks and other institutions are involved.

9.2.2 Underwritten Replacement

As noted above, most issues of long-term securities, such as bonds and new issues of equity, are underwritten. This involves a financial institution agreeing to buy up any of the securities that are not taken up by the market. Both parties to the agreement benefit. The issuer is guaranteed that the whole issue is taken up and, therefore, certainty regarding the volume of funds raised. From its viewpoint, the financial institution receives a fee for providing the guarantee.

The same is true for short-term lending by way of commercial paper and quasi-short-term lending, such as more issuance facilities (NIFs) and floating-rate notes (FRNs). In the case of NIFs, borrowers issue a stream of short-term notes for a given period underwritten by financial institutions on a rollover basis of 1–6 months, whereby the interest rate is automatically adjusted at each rollover date in accordance with a reference rate, such as the London interbank offer rate (LIBOR). At each stage the underwriter guarantees the issue so that the issue is guaranteed funds for the medium term. FRNs are similar, with maturities of between 5 and 15 years, but are mainly issued by financial institutions.

It can be seen, therefore, that alternatives to bank loans exist. Commercial paper has partially replaced bank loans at the short end of the market, and NIFs have tended to replace bank lending, particularly syndicated lending, for longer-term loans. Nevertheless, banks are involved in view of their underwriting of issues of securities, so that securitization has only partially replaced the role of banks in financial intermediation.

The cost of raising funds in the capital market is defined by

$$r_p = r_f + u \quad (9.4)$$

where r_p is the cost of funds raised in the capital market, r_f is the return to the investor and u represents issue costs including any credit rating fees expressed as a spread. As shown earlier, the cost of funds raised by deposits (r_d – see equation (9.3)) equals $r_D + S_D$. Firms will be indifferent to raising funds through the capital market and deposits when $r_p = r_d$ or when

$$r_f + u = r_D + S_D \quad (9.5)$$

This implies that, as the spread rises on bank lending, the cost to firms of raising funds through banks becomes higher and there will be increased recourse to the capital markets. In other words, the total cost of obtaining funds from the capital markets, including underwriting and rating fees (where appropriate), must be less than the costs of borrowing from banks. As we have already stated, this might be the case because of increased costs for banks owing to regulatory factors (g), the development of liability management and higher deposit rates due to competition biting into the 'endowment effect' and also due to a lower credit rating for some banks.²

9.2.3 Deposit Replacement

Deposits can be characterized by nominal value certainty and a high degree of liquidity. Certificates of deposit (CDs)³ do not quite fit this characterization because they are subject to variation, albeit quite small, in nominal value until their maturity. Nevertheless, it seems reasonable to class CDs as a type of deposit in spite of this caveat. Retail savers tend to hold claims on banks in the form of deposits and institutional savers in a wide range of bank claims including subordinated debt and equity as well as deposits. Recently, there has been a marked tendency to hold security claims via other non-bank financial intermediaries. This can be illustrated by the figures shown in Table 9.1, which indicate faster rates of growth of UK non-bank financial intermediaries as compared with the banks themselves, although the absolute value of the outstanding liabilities of the banks (including building societies) is still larger than that of any of the other individual groups of institutions.

A characteristic of the non-bank institutions is that they accept funds and then use these funds to purchase both real and financial securities. Hence, the public is indirectly holding securities, thus bypassing the intermediation role of the banks. It must be admitted that pension fund and life assurance company liabilities are long-term and, therefore, not close substitutes for bank deposits. This is, however, not so for the last category of financial institutions in this table, which are in reality cooperative holders of equity and other financial securities. Furthermore, holders of their liabilities can liquidate their holdings quickly.

² A good example of a bank with a poor credit rating was BCCI. Because of its low credit standing, BCCI had to have a higher rate of interest in the money market for any funds raised. This enabled institutions with a better credit standing to undertake arbitrage by borrowing funds in the market and on-lending them to BCCI at a higher rate. Obviously a loss was involved in this arbitrage when BCCI was closed and became bankrupt.

³ CDs are discussed in Box 4.1.

TABLE 9.1 Liability growth of UK financial institutions, 1987–2006

	Percentage growth
Banks and building societies	266
Pension funds	366
Life assurance companies	561
Unit trusts, OEICs ^a and investment trusts	659

^a Open-ended investment companies

Source: Financial Statistics, Office for National Statistics online database.

What has led to the faster rate of growth of the non-bank financial intermediaries? One reason is that, while bank deposits are fixed in nominal terms, their real value and their real return vary with inflation if the rate of interest does not fully compensate for inflation. In contrast, the real return on the liabilities of non-bank financial institutions over the medium term has been higher than that for bank deposits. Secondly, there is probably a wealth effect present with the growth in wealth-favouring securities, which offer long-term benefits in the form of pensions and life insurance.

We now move on to the second broad category of securitization, i.e. asset-backed securitization.

9.3 ASSET-BACKED SECURITIZATION (ABS)

This is a process whereby illiquid assets are pooled together and sold off to investors as a composite financial security that includes the future cash proceeds. The essence of this type of securitization is a present payment in return for future streams of income. The purchaser of the composite financial security finances the purchase through the issue of other financial securities which are termed asset-backed securities.

The types of asset that are securitized are varied, but the concept of securitization can be applied to any asset that has readily ascertainable future streams of income. A wide range of assets meet this criterion and, therefore, have been sold as ABS, particularly by banks but also by other financial institutions and private individuals. One example of this latter category was by David Bowie who raised \$55m through the issue of bonds backed by future royalties on previously issued albums. The categories of assets more usually securitized include collateralized debt obligations (CDOs), which include collateralized loan obligations (CLOs) and collateralized bond obligations (CBOs), credit card obligations, auto loans, loans and mortgages. The split-up between the European issues of these various categories for the year 2006 is shown in Table 9.2, from which it can be seen that by far the largest component was mortgage-backed securities (MBSs), roughly 66% (of which roughly 80% consisted of residential mortgages), followed by CLOs⁴ at roughly 21%. Residential mortgages are a particularly

⁴ Collateralized debt obligations (CDOs) are packages of securitized loans issued by banks and other financial institutions.

TABLE 9.2 Composition of European securitization in 2006

Category	Percentage of total
Auto loans	2.5
Credit card	0.7
Loans	3.4
CDOs	19.2
Receivables [*]	1.3
Other	6.4
MBSs	66.5
Total	100

^{*} Includes lease, phone bills, healthcare, train and project receivables.

Source: ESF Securitisation Data Report, Winter 2007.

attractive type of asset to securitize given the large number of different borrowers contained in such an ABS. This spreads the risk if they are genuinely different.⁵

In the case of issues of ABS by banks, their role in the process of intermediation is not eliminated but changed. In other words, some of the bundle of separate activities discussed above are sold separately while still retaining the overall function of intermediation. In particular, ABS removes the fourth function from the banks but still leaves the function of originating the loan with them.

The first issue of an ABS occurred in the US during the 1970s, whereas the first issue in the UK was in 1985. Securitization issues in Europe for 1996 were just short of €40bn but had risen to a total issue during 2006 of €458.9bn, an increase of 580.6% or an average of 28.8% per annum over the whole period. This growth is depicted in Figure 9.1. Note that the European market is dwarfed by that in the USA – comparative figures for 2005 were

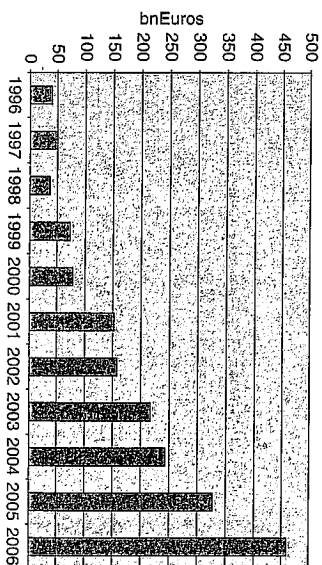


FIGURE 9.1 European Securitization 1996–2006.

⁵ The problem in 2007 with subprime mortgages was that they were not intrinsically different and the risk was cumulative rather than diversified.

€327bn as against \$3,077bn. The premier European market for ABS was the UK, which accounted for some 54% of the total issues, in 2006, with the next highest being Spain and Germany with 11.9 and 10.2% of the total issues.

In Section 9.4 we will look at the process of issuing ABS.

9.4 THE PROCESS OF ASSET-BACKED SECURITIZATION

As we have noted above, the process of securitization involves the issuer pooling together a large number of typically 100-150 securities into a single asset with a large denomination. For example, the total value of a CDO known as Tillas was \$304m, of which the securities of the banknote held in a trust of amount of \$17m (*Financial Times*, 16/12/2004). The securities forming the ABS are grouped together by the source bank (termed the originator) in a range of tranches that is likely to prove acceptable to the ultimate buyers.

A special entity is set up specifically for the transaction. This vehicle is known as a special-purpose vehicle (SPV) or special-purpose entity (SPE) or, if the special entity is a company, a special-purpose company (SPC). This entity is completely separate from the bank and is what is called 'bankrupt remote': in other words, if the originator becomes bankrupt, no claims can be made against the SPV. Often the form of organization is a trust. The SPV then buys the asset tranche from the originator and finances its purchase by borrowing in the markets against the asset purchased (hence the term asset-backed securities), which it holds in trust on their behalf. Frequently the bank continues to service the loan and passes any receipts on to the SPV.

These securities receive credit enhancement in the form of a guarantee from a bank (this may be the originator) or insurance company. This permits the securities to be rated by a credit agency and then sold on the market in tranches, the composition of which is designed to meet customers' preferences (Box 9.2 illustrates). This part of the process is essential as the key to the whole process is the marketability of the financial claims issued by the SPV. If the claims are not marketable, the whole process fails as the banks will not be able to remove the assets from their balance sheet. In fact, in some cases the asset-backed securities sold may have a higher rating than the originator owing to the credit enhancement process.⁶ In contrast, bonds issued by a bank and with a pool of assets acting as collateral would be subject to the credit rating of the originating bank.

This process is illustrated in Figure 9.2.

We now move on to consider the gains from ABS from the banks' point of view.

9.5 THE GAINS FROM ASSET-BACKED SECURITIZATION

Banks gain a number of benefits from ABS. Firstly, issuing ABS is equivalent to raising additional funds since the securitized loans are removed from the balance sheet and are replaced with cash. The decision to engage in ABS by a bank will depend on the cost for the bank

⁶ For example, in January 2002, Ford Motor Company's credit rating was downgraded but ABS issued by Ford Motor Credit continued to attract a Triple A status.

BOX 9.2 Tranching

The SPV produces the tranches of ABSs by obtaining credit enhancements that raise the ratings granted it by the credit rating agencies. These enhancements are typically provided by the originating bank and can take the form of standby letters of credit to the SPV right through to repurchase agreements of the most junior securities issued by the SPV. The securities issued by the SPV are rated from AAA to unrated debt securities. The bulk of an issue is senior rated debt and is AAA. Unrated debt is often referred to as the 'equity tranche'. It is not equity but, because of its high-risk status, it is thought of as equity because effectively all of the default risk in a particular issue is concentrated in this bottom tranche. An example of a securitization issued in tranches is the Bristol and West issue in 1994 of a £150m securitization of commercial loans on investment property (example taken from an MIMF workshop held at the University of Essex on 9 November 2007 - Wolfe (2007)). The issue was through an SPV that issued 15-year floating-rate euro notes in four tranches. Credit rating was provided by Standard and Poor Table 9.3 provides the details.

TABLE 9.3 Bristol and West Securitization 1994

Tranche	Amount	Spread	Rating
Senior class A	£123.75m	LIBOR + 28 bp	AAA
Class M1	£16.5m	LIBOR + 110 bp	A
Class M2	£5.25m	LIBOR + 130 bp	BBB
Class B	£4.5m	LIBOR + 425 bp	Unrated

Source: Wolfe (2007).

The unrated tranche was not sold and was retained by the originator on its balance sheet. During the mid-1990s the equity tranche retained by the originating bank was of the order of 7% of its capital. However, as investor appetite grew during the late 1990s and into the new century, approximately 1% of the capital structure of the originating banks was assigned to the equity tranche. Much of the unrated debt was taken up by hedge funds.

The unrated debt held by the originating bank attracts a high capital charge (this is examined in Chapter 12) and banks have typically undertaken complex financial transactions to return the debt to the balance sheet disguised as another instrument that attracts a lower capital charge (see Wolfe 2004).

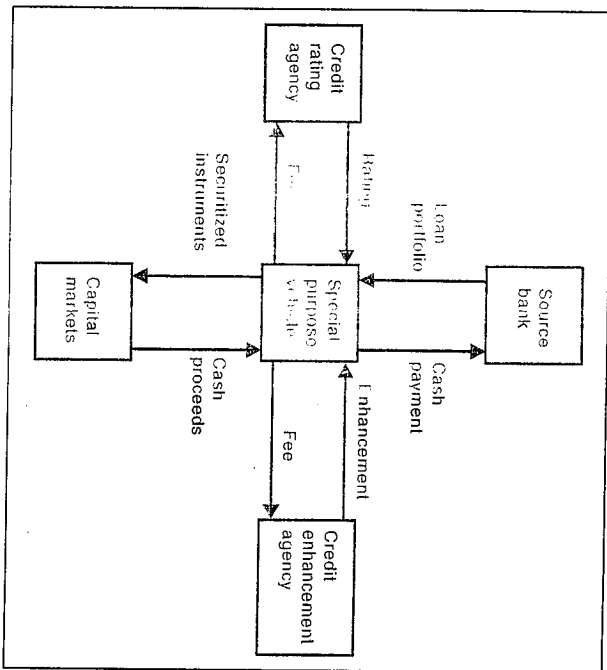


FIGURE 9.2 The Process of Securitization.

of raising funds in this manner being lower than attracting deposits or issuing bonds. The condition necessary for this is:

$$C_p + C_{II} + C_R < \min(r_D, r_B) \tag{9.6}$$

where C_p are cash proceeds from ABS, C_{II} are credit enhancement costs, C_R are credit rating agency fees, r_D is the cost of attracting deposits and r_B is the cost of raising finance through bond issues.

As we have noted, this is often likely to be the case owing to slippages in the banks' own credit rating. It may also help low-rated banks, which have to pay a relatively high rate to raise funds (a high r_D or r_B), to achieve new funds by issuing an ABS at a significantly lower cost. Box 9.3 shows a model linking the theory of bank behaviour and the decision to securitize. It demonstrates that the cost of raising finance through securitization depends positively on a weighted average of the return on reserves and that of bank equity. It also shows that an increase in capital adequacy requirements would lead to an increase in securitization. What Box 9.3 shows is that regulatory capital requirements can be a strong incentive to securitize. If capital requirements on a particular class of loans are greater than that merited by the loan, banks will have an incentive to offload or securitize the loan (see also Pennachi, 1988). This links directly to the second point listed below.

BOX 9.3 Theory of the banking firm and the decision to securitize

The start for this analysis is a simple bank balance sheet:

$$L + R = D + E \tag{9.3.1}$$

The bank securitizes some of its loan portfolio, so the balance sheet⁷ is now changed to

$$L - S + R = D + E$$

or

$$L + R = S + D + E \tag{9.3.2}$$

where S represents asset-backed securities and the other symbols are the same as in Box 9.1. The balance sheet in (9.3.2) implies that the bank can finance its assets by attracting deposits, raising new capital or through securitization.

The capital requirement is now

$$E = \alpha(L - S) \tag{9.3.3}$$

with $0 < \alpha < 1$

The bank's objective is to maximize profits given by

$$\pi = r_L R + r_I L - r_D D - r_B E - gD - r_g S \tag{9.3.4}$$

where r_B is the return on asset-backed securities. Other interest rates are the same as in Box 9.1.

The demand for bank loans and bank deposits is given by the functions

$$D^d = D(r_D), \quad D^d > 0 \tag{9.3.5}$$

$$L^d = L(r_L), \quad L^d < 0 \tag{9.3.6}$$

Additionally, the demand for asset-backed securities is given by

$$S^d = S(r_S), \quad S^d > 0 \tag{9.3.7}$$

From the balance sheet (9.3.2) we have

$$R = S + D + E - L \tag{9.3.8}$$

Substituting on the right-hand side of (9.3.8) from the definitions above gives

$$R = S(r_S) + D(r_D) + \alpha(L(r_L) - S(r_S)) - L(r_L)$$

(continued)

⁷ We recognize that the values of D and E must have altered following the securitization, but we abstract from this change for the purposes of simplicity.

or

$$R = S(R_S)(1 - e) + D(r_D) - L(r_L)(1 - e) \quad (9.3.9)$$

Substituting (9.3.5), (9.3.6), (9.3.7) and (9.3.9) into the profit function (9.3.4) gives

$$\pi = r_A[S(r_S)(1 - e) + D(r_D) - L(r_L)(1 - e)] + r_D D(r_D) - r_B L(r_L) \quad (9.3.10)$$

$$r_A e^{\delta} [1 - S(r_S)] - e L(r_L) \quad r_S S(r_S) \quad (9.3.11)$$

Maximizing with respect to r_B , r_D , r_L and r_S gives the usual optimality conditions. Taking the optimality condition with respect to r_S gives

$$\frac{\partial \pi}{\partial r_S} = r_A(1 - e)S' + r_A e S' - r_S S' - S = 0 \quad (9.3.11)$$

Solving (9.3.11) for r_S gives

$$r_S = r_A(1 - e) + r_A e - \frac{S}{S'} \quad (9.3.12)$$

The optimal interest return on ABSs is positively related to a weighted average of the return on reserves and the return on bank equity. By differentiating (9.3.12) with respect to the capital adequacy requirement δ , we can see that

$$\frac{\partial r_S}{\partial \delta} = r_A - r_A e \quad (9.3.13)$$

An increase in bank capital adequacy requirement (e) leads to a rise in the return on securitization given that the return on bank equity is above the return on reserves which from (9.3.7) leads to an increase in securitization. A rise in e increases the incentive to remove capital-intensive loans from the balance sheet. Thus, higher capital adequacy will lead to greater securitization.

Secondly, they remove assets from their balance sheet, thus easing pressure from capital regulations. According to the current regulations arising from agreement reached by the Basel Committee on Banking Supervision (1988), a bank must maintain capital equal to at least 8% of the total of its risk-adjusted assets.⁸ In this risk weighting, commercial loans carry a weighting of 100% irrespective of the quality of the borrower. Consequently, removal of a tranche of loans eases pressure on capital and permits the bank to engage in other profitable activities, as their capital requirement is restricted to the equity retained by the bank which is clearly lower than the tranche of loans securitized.

Third, ABSs generally contain high-grade loans that, as noted earlier, are subject to the same capital requirements as lower-grade loans that provide higher yields.⁹ Thus, ABS permits the raising of returns for banks by securitizing high-grade loans with relatively low returns and retaining lower-grade loans with higher returns.

Fourthly, securitization provides a means for a bank to manage its risk. By parceling up asset-backed securities which are then sold on to other institutions, the risk is spread around and is therefore less concentrated. Furthermore, if the bank feels its loans are too heavily directed to a particular borrower or borrowers, or region or industry, it can achieve a greater degree of diversification by removing some loans from its portfolio through the issue of ABS. Another source of risk reduction is that banks can increase their liquidity by selling illiquid loans and replacing them with more liquid assets such as government securities. This claim for risk reduction is subject to a number of caveats. Funds in the money market may be restricted so that renewal of ABS may be difficult, as occurred for the Northern Rock bank (formerly a building society) in the UK during the autumn of 2007 (see Box 7.3 for further discussion of this problem). Consequently, Northern Rock was faced with liquidity problems and was forced to obtain emergency funds from the Bank of England.¹⁰ Additionally, the originating bank may have agreed credit lines with the SPV for support. If its money market funding source dries up, if this latter does occur, then the risk is not completely removed from the originating bank. The role of the US subprime mortgage problems in connection with risk management is examined in Box 9.4.

Finally, in this connection securitization has, to some extent, changed the nature of bank lending. Previously, banks used a considerable amount of credit analysis as they would hold the loan on their balance sheets for the full maturity of the loan. With securitization the loan is in fact sold to the capital markets and the credit ratings move to the forefront of the process. This raises the question of the reliability of credit ratings. The *Financial Times* 27/8/2007 reported a study by Bloomberg Markets showing that corporate bonds with a Bar rating had a 2.2% failure rate over 5-year periods from 1983 to 2005. This contrasts with CDOs with the same grade, which were subject to a failure rate of 24%. This suggests that credit ratings may not be fully reliable for derivative securities.

One further problem exists with respect to securitizing loans – the possible requirement of the borrower's permission. Even if this is not the case, the relationship between the bank and the customer may be damaged by the transfer of the loan. A further disadvantage could arise from the costs incurred in the time and expenses involved in designing the issues so that they are attractive to prospective purchasers. This may well make such issues unattractive for banks with low funding costs.

There is also the question as to whether the development of ABS has benefited the economy as a whole. In essence, the process of ABS connects the financial markets with the capital market. This connection should reduce agency and intermediary costs by providing investors with a wider range of securities and enabling cheaper raising of funds. On the other hand, it is sometimes argued that credit facilities have been increased. This is beneficial during

⁹ Note that this will change under Basel II – see Chapter 12.

¹⁰ It is noteworthy that Northern Rock financed its lending through the capital markets to a far larger extent (77%) than other building societies, whereas on average UK building societies financed 64% of their lending at the end of 2006 through retail shares and deposits.

⁸ The current 'Basel' regulations and proposed amendments are discussed in Chapter 11.

BOX 9.4 The subprime problem

Before discussing subprime mortgage problems, it is necessary to outline the nature of structured investment vehicles (SIVs). These are similar in nature to the SPVs discussed in Section 9.4 of this chapter and are set up by a range of financial institutions including banks, hedge funds and investment managers. They are created to hold securities and mainly finance themselves by issuing short-term debt¹¹ with profits being realized by the gap between short- and long-term interest rates (and also by holding risky assets). In the second quarter of 2007, the three main assets held by SIVs in aggregate, according to the *Financial Times* (14/9/07), were (i) corporate financial debt (43%), (ii) residential mortgages (23%) and (iii) CDOs. This indicates their vulnerability to defaults in the mortgage market. It is also relevant that many of the rules of the SIVs specified that the sponsoring institution would provide back-up facilities if the short-term funding sources dried up.

The subprime mortgage problems in the USA arise from lending to house purchasers with a poor credit history. Normally in a perfect market it would be expected that the interest rate charged for such mortgages and the level of deposit required would include the appropriate risk component so that on average the financial institutions involved would not incur losses. In fact, defaults have become so frequent that the US Federal Reserve estimates that investors will lose between \$50bn and \$100bn. What went wrong? Interest rates were low, stimulating demand for mortgages. Mortgage providers were competitively searching for borrowers, with the result that risk assessment was virtually zero. This resulted in very risky mortgage loans being made. There is also evidence that fraud and other dubious practices were involved, resulting in the overstatement of income.¹² Subsequent rising interest rates meant that borrowers were unable to meet their obligations. The potential problems of default had been passed on to the financial institutions, particularly banks and hedge funds, via SIVs, as the originators of the mortgages had repackaged these loans into securities and sold them on. Consequently, the investment loss had been passed on to these institutions. As indicated above, banks in the USA and Europe have provided back-up facilities to the SIVs and thus become responsible for the assets if the SIVs are unable to raise money in the money markets.

This, in fact, occurred, as SIVs found it difficult to raise loans in the money markets owing to concerns about their riskiness and the difficulty in valuing the complex securities held. This was compounded by the fact that many of these vehicles contain rules requiring them to sell off assets if falls in their market value consume 50% of their capital. Since they are highly leveraged, this has occurred in some cases.

How serious a problem is this for banks? Fitch have calculated that, if the banks were forced to take over all the assets held by conduits, estimated at a staggering

(continued)

¹¹ They are highly leveraged, so capital only forms a small proportion of their liabilities.

¹² One Californian firm for a fee of \$55, was prepared to employ persons as independent contractors and provide pay slips as proof of income. For a further fee of \$25 they would also make telephone calls to provide glowing references for the would-be borrower, if required (*Financial Times*, 9/10/07).

\$1400bn), this would only knock off 60 basis points of the average bank's tier 1 capital ratio (*Financial Times*, 10/9/07). However, individual institutions are vulnerable, e.g. IKB (a specialized German lender) which was rescued by other German banks following exposure to the subprime market that exceeded its capital by a big margin. It is also noteworthy that the risk is spread around a wide range of institutions – Singapore's DBS bank announced that its exposure to CDOs could be around \$1.6bn. This is, of course, the aim of securitization – to spread the risk around.

The experience of the subprime crisis means that banks will find that securitization will become expensive. The increased risk will be matched with higher yields on securitized assets.

periods of faster growth of an economy but could lead to increased financial distress once a downturn occurs. If this is so, the volatility of the economy may have been increased.

9.6 CONCLUSIONS

In this chapter we have distinguished between securitizations that reduce, at least partially, the role of banks in the process of raising capital and those that represent an unbundling of the financial intermediation process. In the first case, securitization reduces the role of banks significantly as finance would be raised directly from capital markets. The banks also face competition for funds on their liability side from other financial institutions whose liabilities in the UK context have grown more rapidly than those of banks. In the second case, ABS is part of the intermediation process and represents separating the component parts of this process. ABS offers banks the chance of relief from pressures arising from capital shortages as well as offering the opportunity to raise funds at a lower cost than through the normal channels. Banks can also achieve greater portfolio diversification and hence a reduction in risk. However, securitization may provide additional risk to the economy.

9.7 SUMMARY

- Securitization refers to two processes. The first involves the process of disintermediation. The second relates to asset-backed securitization.
- Banks earn fee income from helping firms to issue securities when firms raise funds directly from the capital market.
- Banks conduct securitization as a means of easing the restraints due to imposed capital-to-asset ratios, and as a means of lowering the costs of attracting funds.
- ABS may be beneficial to the economy as a whole through increased liquidity and reductions in the cost of raising funds. On the other hand, the potential for increased financial distress may be increased when a downturn in the economy occurs.

QUESTIONS

- 1 Financial intermediation can be considered as a bundle of separate services. What are these separate components?
- 2 What factors explain the growth of securitization?
- 3 What are (a) MBS, (b) FBS and (c) commercial paper? Does the growth of these harm banks?
- 4 What are the three categories of securitization arranged through financial markets?
- 5 What is asset-backed securitization? How are the securities issued?
- 6 How do banks gain from asset-backed securitization?

TEST QUESTIONS

- 1 Discuss the implications of securitization for the long-term future of banking.
- 2 What is securitization? Comment on its significance for international banking.