Asset-backed securitisation in the United Kingdom

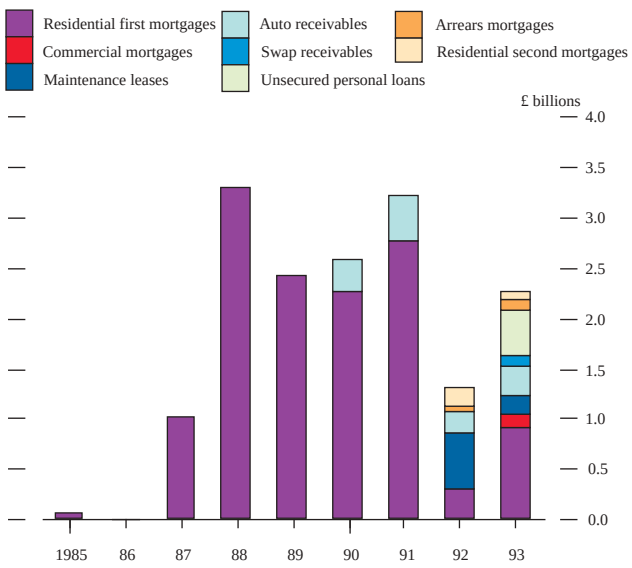
By C Ian Twinn of the Bank's Economics Division.

Since the first issue in 1985, the UK asset-backed securities market has grown to become the second largest in the world after that in the United States. This article examines the factors behind the market's development to date and assesses its prospects. It analyses the incentives for issuers and investors to participate, and outlines the mechanics of securitisation and the regulatory framework that influences the market. It also considers the advantages of—and the risks inherent in—asset-backed securities.

The first asset-backed security issues(1) were made in the United States during the 1970s. But it was not until 1985 that the technique was used in the United Kingdom. Even now, only a small proportion of total UK lending has been securitised: by the end of December 1993, 94 issues with a principal value of £16 billion had been made (compared with about £640 billion worth of lending by banks and building societies alone). Despite this, and some years of uneven growth (see Charts 1 and 2), the UK market is now the second largest in the world and is growing rapidly.

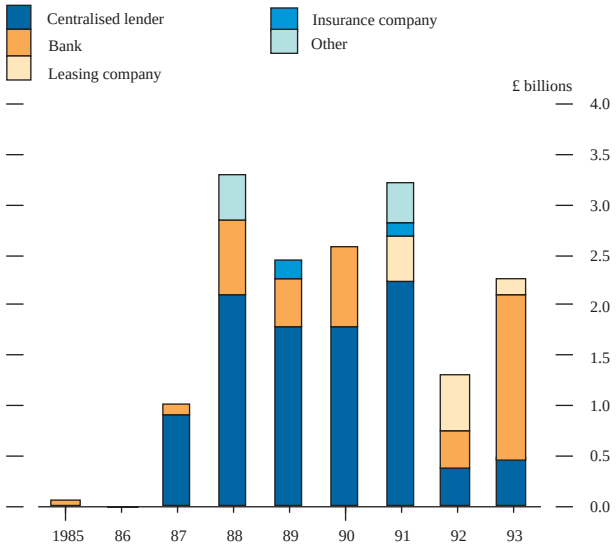
An asset-backed security (ABS) is a tradable instrument supported by a pool of loans (or other receivables, such as leasing proceeds). The interest and principal payments on the loans provide the cash flow needed to pay interest to the holder and to redeem the security when it matures. One of the main attractions of securitisation is that it allows a lending institution, such as a bank, to remove the assets from its balance sheet (provided that the terms of the issue satisfy supervisory requirements on non-recourse to the originator). Since turning a group of loans into an asset-backed security transforms them into a form in which they can be sold to investors and traded in a secondary market, securitisation also increases the range of funding sources available to the original lending institution, and adds marketability to assets which might otherwise have little liquidity.

Chart 1
ABS issues by type of asset



Sources: Credit Suisse First Boston (CSFB), Barings.

Chart 2
ABS issues by type of originator



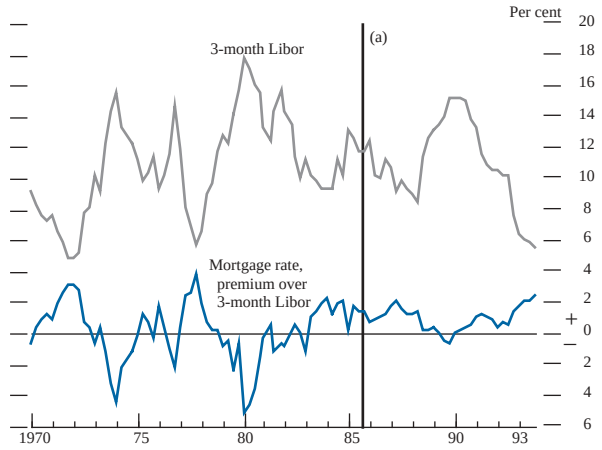
Sources: CSFB, Barings.

In the long term, if ABS issuance continues to increase, it could have far-reaching effects on the structure of lending. Securitisation permits an institution to specialise in one aspect of the lending process. It may also allow new institutions to enter the market and compete against traditional lenders. Both developments could bring substantial benefits to borrowers, reducing the cost of borrowing and increasing the range of choice available.

(1) In this article, the term 'asset-backed securities' includes mortgage-backed securities.

As in the United States, residential mortgages form the basis of many UK ABS issues; as Chart 1 shows, the first UK issues were of mortgage-backed securities and at end-1993 such issues accounted for 81% of the total outstanding. The combination of the financial liberalisation of the early 1980s—which encouraged new entrants into the UK mortgage market—and periods in which wholesale funding costs were significantly below mortgage lending rates (see Chart 3) created profitable opportunities for lenders who did not rely on retail funding sources. Centralised mortgage lenders (CMLs) sprang up, offering innovative products in what had until then been a fairly conservative market; by using direct advertising or intermediaries such as mortgage brokers, they avoided the costs of a branch network. Many intended from the outset to securitise their loans, aiming to make their profit on origination and servicing fees, rather than from holding the loans on their own balance sheets and earning a spread between borrowing and lending rates.

Chart 3
The premium of building societies' average mortgage rate of three-month Libor



(a) Centralised lenders first established.

Although banks have increasingly acted as originators of issues (at the end of last year, they were responsible for about 26% of the total outstanding), the main originators have been the centralised lenders; they account for about two thirds(1) of the total.

Because it enables banks to remove assets from their balance sheets, securitisation has a significant impact on the lending data collected by the Bank. The way in which securitisations are captured in the statistics collated by the Bank is outlined in the box opposite.

The attractions of asset-backed securities

There are a number of reasons why originators may find it in their interests to issue asset-backed securities; likewise, a number of factors influence investor interest. The interplay between the two sets of factors will determine both the market's potential size and its rate of growth.

Securitisation by banks and its effects on the financial statistics

In securitising some of its lending, a bank removes loans from its balance sheet and places them with a special-purpose vehicle (SPV), which finances its holdings by selling asset-backed securities to investors. The effect of such a transfer on the financial statistics is to reduce bank (and so 'bank and building society') lending, and to increase lending by the 'other financial institutions' (OFI) sector, which includes the SPV. The gross amount transferred from the bank's balance sheet (and so the direct impact on bank and building society lending) is known. But some of the securities issued by the SPV may be taken up by banks or building societies, and thus contribute to their aggregate lending; the net impact is difficult to measure.

To date, the most common form of securitisation in the United Kingdom has been the issue of mortgage-backed securities. In order to capture the increase in OFI lending and maintain statistical coverage, the Bank asks any newly-formed mortgage finance vehicle to report its business as a mortgage lender. The figures for total mortgage lending published by the Bank are therefore unaffected by such securitisations (the reduction in bank lending is offset by increased OFI lending).

Banks' securitisation of other assets (personal loans, vehicle hire-purchase receivables, etc) reduce bank and building society lending in a similar way when the assets move off balance sheet. In such cases, the Central Statistical Office is responsible for including the business of the securitisation vehicle in the OFI lending element in the financial accounts.

For originators

Asset-backed securities have two main advantages for an originator: they allow the institution to remove the assets from its balance sheet (provided the relevant risks are transferred to the investors in accordance with supervisory rules) and so free capital for other uses; at the same time, they may allow new sources of funds to be tapped.

A financial institution, such as a bank, can fund its lending from various sources—including retail deposits, the wholesale funds market and using shareholders' funds (reserves and equity), as well as by securitisation. A model of a profit-maximising bank's choice among these options is developed in the Annex. It shows how a change in the cost of one source of funds will affect the cost of securitisation. For example, an increase in the cost of shareholders' funds

(1) Including the National Home Loans Corporation plc as a centralised lender.

will, at the margin, result in an increase in both the absolute quantity of securitisation that takes place and the proportion of total lending that is securitised. These effects reflect one of the main benefits of securitisation; by enabling banks to remove assets from their balance sheets, it allows them to economise on their use of capital.

Other considerations will also influence the supply of asset-backed securities, however. Securitisation allows financial institutions to concentrate on those aspects of the lending process at which they are most efficient. Institutions with a comparative advantage in originating or servicing loans can concentrate on those roles and securitise the assets, selling them to institutions that can raise the necessary funds more efficiently.(1)

ABSs can also be used to manage credit risk. If a bank feels overexposed to a particular borrower, sector or geographical area, it can securitise some of its lending. Securitisation allows the aggregate credit exposure faced by the financial sector to be better distributed, while (if the original lender continues to act as servicer) also allowing relationships between banks and their customers to be maintained.

In this respect, asset-backed securities contrast with some other innovative forms of funding available to bank customers. A number of researchers(2) have argued that the source of the added value of a bank's holding an asset on its balance sheet is the opportunity this gives it to maintain its relationship with—and to continue to monitor—the borrower. Other forms of funding, such as issues of commercial paper, may result in banks losing the ability to monitor customers, particularly those with strong credit ratings (such as large industrial or commercial companies).

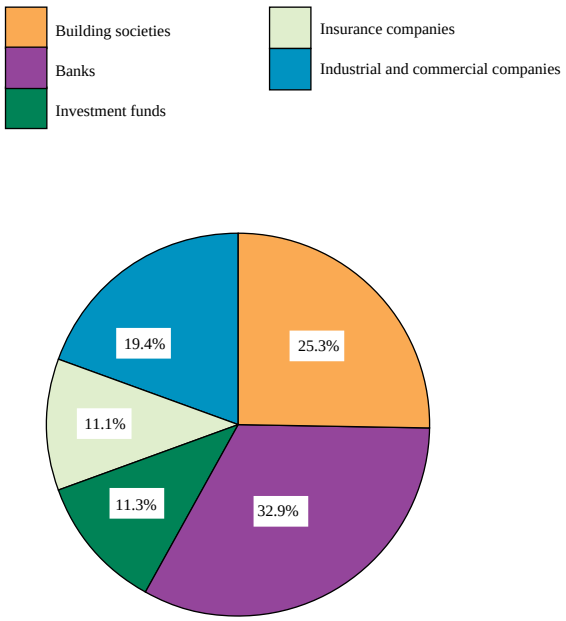
Securitisation may also provide a way for an originator to reduce its maturity mismatches while continuing to earn a steady source of income. Maturity mismatch occurs when an institution makes loans of a different duration from the funds that it uses to finance them. Securitisation allows such a mismatch to be passed on to the investors.(3)

Similarly, securitisation can be used to transfer interest-rate risk—the risk that the lender's spread, between the interest rate received from borrowers and that paid on deposits, may narrow. This risk is most commonly incurred when a lender takes deposits (or makes loans) at a fixed rate and lends out (or takes deposits) at a floating rate. It can also arise, however, if the interest rates being received and paid —though both floating—are related to different bases which do not necessarily change in step. Securitisation is not, however, the only way for a lender to eliminate this risk; other possible solutions (such as the use of swaps) are available.

For investors

Chart 4 gives a breakdown by type of investor of the aggregate of several recent asset-backed issues; it shows that banks, building societies, investment funds, insurance companies, and industrial and commercial companies have all been significant investors in UK ABSs.

Chart 4
Breakdown of investors by type



Total value of issues in sample: £722 million

Sources: various.

The main attraction of asset-backed securities to investors is the margin that they offer over other highly-rated bonds. Another significant advantage is the opportunity they provide for investors to take on exposure in areas—both geographic and business sector—to which they might otherwise not have ready access. Just as originators may securitise to reduce their exposure to a particular sector, potential investors can use ABSs to diversify their investment portfolios. For a variety of reasons, it may be more attractive for them to purchase an identified pool of assets than to take a direct stake in an institution already involved in the sector.

Asset-backed securities offer a number of other benefits to investors analogous to those they present to originators: they are likely to be more liquid than direct lending, and easier to sell if funding difficulties arise; and depending on how an issue is structured to deal with prepayment risk (see below), they may also make it easier for investors to match the maturities of their assets and liabilities.

(1) See James, C (1988) 'The use of loan sales and standby letters of credit by commercial banks,' *Journal of Monetary Economics, Vol. 22,* pages 395–422.
(2) For example Greenbaum, S I and Thakor, A V (1987), 'Bank funding modes: securitisation versus deposits,' *Journal of Banking and Finance, Vol. 11, No. 3* pages 379–401; Pennachi, G G (1988), 'Loan sales and the cost of bank capital,' *Journal of Finance, Vol. 43, No. 2,* pages 375–96; and James, C *op cit.*
(3) As noted in Lucas, D and McDonald, R L (1987), 'Bank portfolio choice with private information about loan quality: theory and implications for regulation,' *NBER, Working Paper No. 2,421.*

The mechanics of asset-backed securitisation

The most common structure for UK asset-backed security issues is similar to what is known in the United States as a 'pass through'. As a first step, the originator identifies and separates suitable assets from its portfolio. To minimise the costs of evaluating the issue, assets of similar credit quality and expected repayment calendar are normally chosen. Once pooled, the assets are sold to a special-purpose vehicle (SPV). This provides a legal separation of the assets from the originator. The SPV then issues securities to investors to fund its purchase of the assets, which it holds in a trust on their behalf.

The terms of the issue—including the classes of security and type of coupon—are set following advice from the investment bank managing the issue and from other experts (including credit rating agencies, lawyers and tax advisors). To attract investors, at least one credit rating is normally required; issues also normally include some form of credit enhancement (see below). Once the securities have been issued, the interest and principal payments on the underlying assets are managed by a 'servicer' (usually the originator), with payments being distributed to investors by the SPV through the trust.

ABSs are normally issued as floating-rate notes (FRNs) paying Libor plus a margin as their coupon. Many are structured to include a step-up feature in the interest payments: the interest rate 'steps up' (normally it doubles) after a specified number of years. As loans are repaid, the trustees redeem the securities used to fund them (choosing those to be repaid early by ballot or in one of a number of other ways). Once the proportion of an issue that remains outstanding falls below 10%, the SPV can recall the remaining securities,(1) and refinance outstanding loans with a new issue that includes some additional loans. Investors use the step-up date as a proxy for when this will occur.

A proxy for the expected repayment date is necessary because the maturity of the underlying loans is uncertain. If interest rates on new fixed-rate loans fall, for instance, it may encourage existing fixed-rate borrowers to refinance; their existing loans will be repaid and some of the ABS issue redeemed. There are other influences on the average lifespan of the loans: for example, because people move house the average life of a mortgage is roughly seven years, even though most mortgages have a term of between 20 and 30 years. The rate of prepayment depends on a number of factors—for a mortgage-backed security (MBS), for example, these include the proportion of fixed-rate mortgages and the ages of borrowers. But the nominal maturity of ABSs (normally two years longer than that of the longest-maturity loan in the pool) is generally much longer than the actual maturity.

Issuing asset-backed securities involves a number of costs; most obviously, there is the coupon to be paid on the ABS. In addition, there are the costs involved in the launch of the ABSs. Some of these are one-off fixed costs, such as those incurred by the originator in setting up the necessary systems to identify and manage the assets concerned. Others—such as legal, rating agency and underwriting fees, and the costs of credit enhancement—are incurred with each issue (though they may reduce if issues follow a standard format). These expenses can be significant, especially for new issuers who lack infrastructure and reputation.

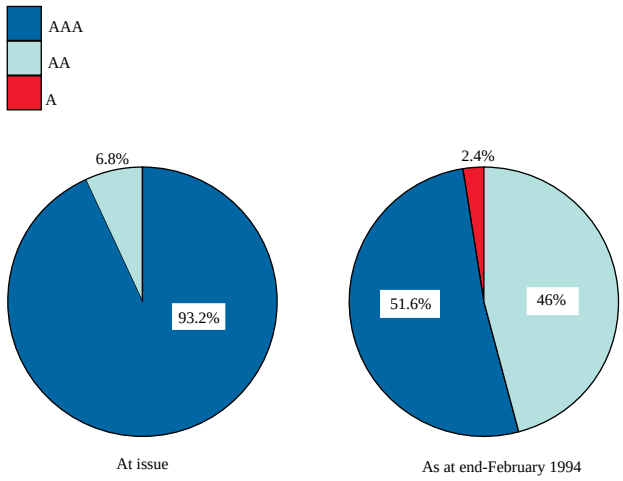
Credit enhancement

Credit enhancement provides a degree of assurance that investors will receive timely coupon and principal payments, even if the principal and interest payments due from the underlying borrowers are not received. One way of explaining credit enhancement is to see it as providing an arbitrage between supervisory and market requirements on a given loan pool. The level of insurance acceptable to the market may be less than that implied by supervisory standards, making enhancement a cheaper option. Enhancement may also be needed to attract investors because they favour investments with lower-risk profiles than those of the underlying asset pool, or because they wish to invest in assets that have the backing of recognised names. Such considerations may be especially important if (as many ABSs are) the issue is of a new or unusual form, or if it involves an unusual type of asset.

Most UK ABS structures have included some form of credit enhancement to boost the credit rating above the level that would have been obtained had the underlying assets been rated. As Chart 5 shows, most issues have been structured to obtain high investment grade ratings, usually triple-A. The degree of credit enhancement required for a particular issue to achieve the desired rating is determined by an assessment of the underlying assets by a rating agency. The box on page 138 describes the factors that rating agencies take into account.

In the United States, credit enhancement is often provided by government-backed agencies, such as the Government

Chart 5
Credit ratings of UK ABSs



Source: Barings.

(1) Assuming that a clause to this effect is included in the terms of the issue.

The credit rating of asset-backed securities

To be attractive to investors, asset-backed securities generally require at least one rating from a recognised rating agency. As for other securities, the rating reflects an agency's view of the likelihood that holders of the asset-backed securities will receive full and timely payments. Agencies also advise originators on the level of credit enhancement needed to achieve the target rating for the securities, and so have an important role in the structuring of ABS issues.

Rating agencies concentrate on two key aspects of an asset-backed issue: its *credit standing* and its *liquidity*—that is, its ability to provide full and timely payments to its holders. Their assessment is based on: a detailed analysis of information on the specific loans (or other receivables) to be securitised, normally supplied by the issue's originators; factors specific to the originator that may affect the pool's performance; and more general information about the type of loans involved.

An issue's *credit standing* is usually assessed either by analysing historical data on the underlying loans or by examining the credit strength of those from whom the receivables are due (the obligors). Ideally, the historical data will include information on the specific loans; on similar loans securitised by the same originator and serviced by the same servicer; and on industry-wide information about the class of loan.

When any of these elements is lacking, or when the originator's procedures or business has recently changed (lessening the value of historical information on the pool as a guide to its future performance), rating agencies will be conservative in their assessment of the level of credit enhancement needed to achieve the desired rating. In extreme cases, this may make securitisation unattractive for reasons of cost.

In securitisations of corporate assets, simulation tests on the credit standing of the obligors may be used to assess the credit exposure of the ABS. This technique can be applied to issues when historical data on the specific assets are unavailable, but the creditworthiness of the obligors is known.

Assessing the *liquidity* of asset-backed securities requires in addition that an agency estimate the timing of any possible future losses. This is important because losses occurring early in an issue's life are likely to have a greater impact on a pool's capacity to meet the issue's servicing obligations.

In the specific case of mortgage-backed securities, credit assessment is usually based on a comparison of the pool intended for securitisation with a 'benchmark' pool of mortgages of various loan-to-value (LTV) ratios and levels of mortgage indemnity guarantee (MIG) insurance cover. The credit enhancement required to gain a triple-A rating on an issue backed by the 'benchmark' pool is determined by analysing the likely performance—in terms both of outright defaults and of arrears—of each LTV/MIG group of loans using various economic scenarios. The costs associated with repossession and subsequent sale of a property are included in this calculation. Differences between the composition of the actual pool and the benchmark are then translated into differences in the amount of credit enhancement necessary.

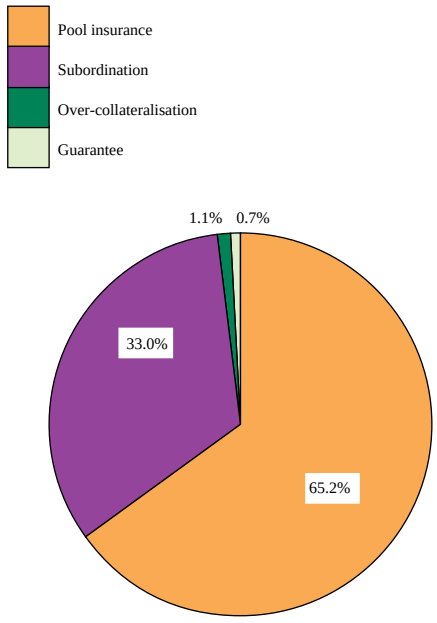
In addition to obvious factors such as LTV ratios and levels of MIG cover, rating agencies also look at the type of mortgages in a pool—whether they are repayment or endowment, fixed or variable rate, at their geographical dispersion or concentration, and at the type of property, the occupancy (eg first or second home) and the purpose of the loan (eg refinancing or second mortgage). The residual maturity of the loans is also important.

Once a security has been rated, its credit standing is monitored until redemption. The rating agencies check how far the original credit enhancement is still available to absorb losses, and update their assessment of the risk of loss in the light of experience of the pool's performance and of macroeconomic trends. The impact of prepayments is also important during this monitoring process. Mortgagors with either surplus cash flow or enough positive equity may prepay, leading their mortgages to be removed from the pool. This may affect the pool's credit standing, since it is likely to mean the removal of the most creditworthy mortgages. Monitoring may—as Chart 5 shows—result in downgrading, if the quality of the asset pool turns out to be lower than was initially expected.

National Mortgage Association (GNMA) which guarantees issues for a fee. Such agencies do not exist in the United Kingdom, however, so enhancement must be obtained in the market. There are a number of methods available, either external to the ABS structure—eg using guarantees from a highly rated institution—or from within the structure itself. Chart 6 shows the relative importance of the main types of enhancement used to back issues.

As it shows, the most common form of credit enhancement has been an insurance contract underwriting the interest and/or principal payments of the underlying asset pool *(pool insurance)*. Although very common among the earliest issues, this technique has fallen out of favour recently, following losses sustained by some of the insurance companies writing it and—in some cases—their downgrading (which led in turn to the ABSs underwritten by them being downgraded, making the technique unpopular with investors).

Chart 6
Credit enhancement techniques used(a)



Source: CSFB.

(a) Main technique used in supporting issues up to end-1993.

Irrevocable letters of credit, written by a financial institution with at least as high a credit rating as that sought for the securities, are a similar technique, except that the risk of default is taken by the financial institution issuing the letter, rather than by an insurance company. Such a letter gives the trustees of the issue the right to trigger a loan from the issuer if the payments received from the underlying assets cannot meet those due on the securities. If it is triggered, the credit is booked as a loan to the SPV.(1) Any subsequent recoveries can be used to repay the loan.

Cash collateral accounts are another external credit enhancement technique. In this case, a loan is made to the SPV (usually by the originating bank, to signal its confidence that default will not occur); the money is then deposited with the institution advancing it until needed. The difference between the interest charged on the loan and that paid on the deposit constitutes the institution's fee.(2)

The most common internal credit enhancement technique—a *senior/subordinated structure*—involves splitting the issue into different classes of security, with some classes subordinated in the payment of principal and/or interest. In recent years, this has been the most popular form of enhancement. It redistributes the risk inherent in an issue's structure, making the senior securities less risky, and the subordinated securities more risky, than the average of the pool. Given that a central tenet of finance theory is that, in the absence of market distortions, the value of an asset is independent of its capital structure, quite why such a senior/subordinated structure should benefit issuers is unclear. The explanation most commonly offered is that different slices attract investors with different risk characteristics, thus allowing a more efficient allocation of the risks. This may, however, be somewhat superficial, especially since many of the subordinated classes themselves benefit from credit enhancements.

A number of other features can be incorporated into the structure of an issue to obtain a higher rating. *'Payout events'* may be included: these allow early redemption if certain specified events occur, thus reducing the risk of default. A *spread account* may be incorporated in cases where the underlying assets earn high interest rates. Under this arrangement, the excess of interest earned over that due to investors is retained in a separate account, to be paid out if there is any subsequent shortfall in interest or principal from the asset pool.

Regulatory framework

The ABS market in the United Kingdom is not directly regulated; although most issues are listed on either the London or the Luxembourg stock exchange—and are therefore subject to prospectus and other requirements—the SPVs issuing them do not themselves require authorisation from a UK financial supervisor. But the significant role played by regulated financial institutions (such as banks and insurance companies) in the ABS market means that the regulations to which they are subject have influenced both the growth of the market and the structuring of issues.

The Bank of England's involvement with securitisation arises from its supervision of banks that wish to be involved in the market. The Bank's approach is outlined in two notices:(3) the first sets out the general principles it applies, and the second makes some amendments and extends the general approach to cover additional types of asset. The

(1) A *letter of credit with reserve fund* is a variant of this technique, in which the letter is paid for by a fund built up using the proceeds of the spread between the yield on the assets and the coupon payable to investors (net of the fixed fee paid to the servicer). In the United Kingdom, this technique has only been used to back the subordinated tranches of senior/subordinated issues.
(2) By the end of February 1994, subordinated tranches worth 0.1% of the total issued had been enhanced in this way.
(3) BSD/1989/1 and BSD/1992/3, available from the Bank's Banking Supervision Division (071-601-5082).

underlying objective is to ensure that banks involved in securitisation have adequate capital to cover the risks they face. The principles are intended to ensure: that securitisations achieve their intended effect of passing rights and obligations from the seller to the buyer; that all the parties understand their responsibilities and risks; and that all material risks to buyers and sellers are properly accounted for in the Bank's prudential supervision of banks.

Although building society involvement in the market (at least as originators) has so far been limited, the regulations covering building society supervision also influence the market's structure. Following the 1986 Building Societies Act, secondary legislation eased building societies' involvement in securitisation by widening some of the relevant powers. Societies can now, under certain conditions, originate transferable mortgages, buy and sell pools of mortgages, and invest in MBSs.

The Building Societies Commission's supervisory treatment is set out in a prudential note(1) that was issued in 1988 and is currently under review. The Commission's general approach has, so far, been similar to the Bank's: assets that have been securitised are allowed to be disregarded for capital adequacy purposes, provided the society retains no significant risks on them.

A number of other institutional factors influence the form and extent of securitisation. Legal, accounting and tax structures clearly play a part in determining the design of issues. The regulations covering the supervision of insurance companies(2) also have a role, in so far as they affect insurers' decisions on whether—and at what price—to offer pool insurance.

The risks inherent in asset-backed securities

In thinking about the risks inherent in asset-backed securities, it is important to recognise that the risks associated with the underlying pool of loans are unchanged by securitisation. Securitisation alters only the distribution of the risk among the various parties involved: it allows them to concentrate or reduce exposures, and so maximise their expected returns given their perception of the risks involved. In addition, it may allow some portfolio risk reduction, if it allows investors to identify and purchase assets whose risk characteristics offset those of assets already held.

The opportunity that ABSs provide to increase an institution's risk exposure, coupled with the concentrations of risk that asset-backed securities may create (among credit enhancers, for example), increases the danger that in adverse circumstances some participants may have a greater exposure than they are able to deal with. Because the participants are interdependent, if an institution taking on an exposure following a securitisation does not properly evaluate and price it, this might lead to a systemic problem in the same way as can occur in other financial markets.

Securitisations also introduce new risks for originators and investors. Problems may arise for an originator either directly—from the launching of issues—or indirectly, through their effect on its lending decisions. Most obviously, problems could arise if investors were offered some kind of recourse (moral or actual) that allowed them to return non-performing assets to the originator. Such recourse would defeat the originator's objective in the securitisation of transferring the risk. As mentioned above, UK supervisory authorities try to ensure that banks and other regulated institutions are not exposed in this way, by limiting the types of recourse allowable if the assets are to be excluded from the balance sheet for capital adequacy purposes.

If originators create an ABS 'pipeline'—that is, make loans using a small amount of capital, with the intention of securitising them to release funds to make further loans—this may also create risks for them. If the environment were to become unfavourable for securitisation, such originators might be unable to make new loans. (CMLs suffered difficulties of this sort in the late 1980s.) This could cause problems for them if they were relying on a steady stream of new business to help cover operating costs. It would only pose a systemic problem, however, if such originators carried out a large proportion of total lending.

It has also been suggested that securitisation may lead to a reduction in the average quality of the originator's loanbook. This might happen if, in choosing the loans to be securitised, originators selected their better-quality assets. It might also occur if the availability of the new source of funds led institutions to undertake more lending and this, in turn, led to a deterioration in the average quality of the loans (because marginal rather than good-quality borrowers from other institutions were attracted).

Investors also face a number of risks, including prepayment risk (which was discussed above), interest rate risk, mismatch in the interest payment cycle, and a liquidity exposure. These risks may be more difficult to assess in the case of ABSs than for traditional securities, making misjudgments—and so incorrect investment decisions—more likely.

The interest rate exposure faced by investors is similar to that faced by the originator before the assets are securitised. It is the risk that the spread between the interest rate paid by borrowers and that due to investors may narrow, reducing the margin available for the servicer and thus increasing the risk of default for investors. Credit enhancements incorporated in the structure of the issue will, however, reduce the risk that investors will suffer losses as a result of such a narrowing.

(1) Prudential Note 1988/2, 'Capital requirements for off-balance-sheet mortgage lending'.
(2) Schedules 1 and 2 of the 1981 Insurance Act, Schedules 32 and 33 of the 1982 Act and Forms 11 and 12 of the 1983 Act; supervision of insurance companies is implemented by the Department of Trade and Industry.

Interest payment cycle mismatch occurs because interest payments on the underlying assets are usually on a different calendar from the payments on the securities. Mortgage interest, for instance, is normally paid monthly, whereas the coupon payments on most ABS issues are quarterly. As a result, the trust receives much of its income well before it needs to pay out. Although the terms of the trust normally restrict it to investing these funds in assets of at least equivalent quality, an additional element of default risk is introduced.

The final exposure investors face is liquidity risk. The secondary market in UK ABSs is fairly thin. Investors may therefore suffer a price penalty if they try to buy or sell a large amount. If, for example, an institution tries to buy a large quantity, it may face a disproportionate increase in the price either because of a shortage of available securities or because potential sellers assume it has information that is not widely available—and increase their prices accordingly.

The extent of this risk should diminish as the market develops. But some of the other risks, for example of a liquidity problem for an originator or group of originators, will be made worse if their market share increases. What effect an increase in the size of the market will have on participants' exposures to one another will depend not just on the overall size of the market but also on whether new entrants are attracted, reducing market concentration.

Recent developments and prospects

The ABS market grew rapidly until mid-1989, when the differential between mortgage and interbank lending rates temporarily reversed, making further securitisation unprofitable for the centralised lenders who had driven the market. Growth resumed early in 1990, when a positive differential re-emerged, before slowing down again in mid-1991.

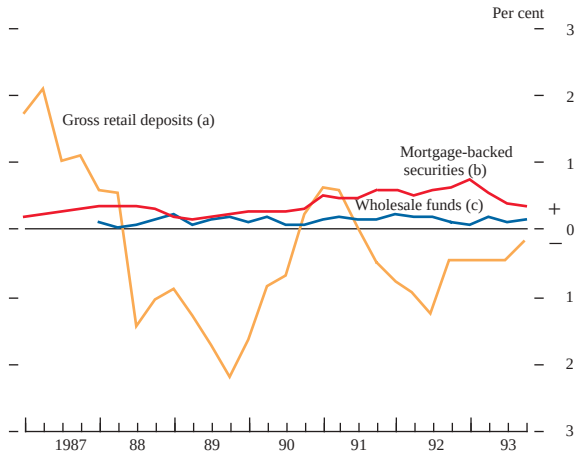
This most recent slowdown reflected a number of factors. Most importantly, the downturn in the economy reduced both the flow of new loans (and thus the need for funds) and investor appetite for asset-backed securities. The downgrading of one of the principal securitisers, and of several of the insurance companies that had provided guarantees on asset pools, reduced confidence in the market. It was also hit by the Bank's announcement that, in order to conform with European capital adequacy requirements, from January 1993 banks would face a 100% risk weighting on their holdings of mortgage-backed securities—even though the underlying assets would have attracted a more favourable treatment if held on their balance sheets directly. Subsequent clarification, however, led the earlier position to be restored—MBSs now attract the same 50% weighting as mortgage loans.

The recent economic recovery has seen an upturn in new ABS issues. The renewed growth has been distinctive, for both the type of issuer and the type of asset involved. The recession had a significant impact on the centralised mortgage lenders; not only was much of their lending of higher risk (for example second-mortgage), but market confidence in the sector was shaken by the financial problems encountered by a prominent CML in 1991. Although CMLs have carried out a number of new issues and refinanced some old issues, most of the recent activity has been originated by banks. Figures from Credit Suisse First Boston show that banks accounted for 71% of ABS issuance in 1992 and 1993, with the centralised lenders responsible for only 18%. As Chart 1 shows, the recent growth has also involved a wider range of assets.

Despite the recent market recovery, the proportion of assets securitised remains modest relative to potential supply. On the demand side, the further development of a European investor base might help to increase investor interest and thus the rate of market growth. The current period of low interest rates may also help if, in their search for higher nominal yields, investors become less wary of innovative products. And the recent economic upturn may provide a boost, if investors perceive loans to be less risky and so securities based on them to be of higher quality.

On the supply side, the development of the market will depend crucially on the increasing involvement of the traditional lenders—banks and building societies—who hold the majority of the assets that can be securitised. This will depend in turn on the cost of ABS issues relative to other sources of funds. As Chart 7 shows for building societies, the relative cost of MBSs fell during 1993, increasing the attractiveness of MBS issuance as a source of funds.

Chart 7
Cost of marginal funding (margin over three-month Libor)



(a) Average building society instant access rate for balances in excess of £25,000.
(b) AAA floating-rate mortgage-backed issues (initial margin).
(c) UK building societies' floating-rate eurobonds.

Three other factors may make ABSs a more attractive option for lenders in the future. With the increased demand for loans during the upturn, banks and building societies may start to come under capital pressures because of balance sheet growth. ABS issuance may be a viable alternative to new equity issues in this situation, if lenders are unable to increase capital sufficiently rapidly from retained earnings to

meet the demand. A related factor that may be important in the case of building societies is the statutory limit of 40% on the proportion of their funding that they can raise from the wholesale market (although this limit is being reassessed as part of the current review of the 1986 Building Societies Act). Securitisation may be an attractive way of easing this funding pressure.

Second, the recent growth in the importance of fixed-rate mortgages may make ABSs more attractive, since securitisation provides a mechanism for dealing with the attendant interest rate and prepayment risks. Lastly, the recent issues by a number of major banks will have reduced their fixed costs on any further issues, making such issues more likely.

If the US experience is a valid guide, ABS issuance may in the long term have far-reaching effects on the structure of lending, both because it allows institutions to specialise in one aspect of the lending process, and because it allows new lenders to enter the market and compete against traditional providers of loans. Both these developments could bring significant benefits to borrowers, by reducing the cost of funds and increasing the range of funding sources available.

Annex

Modelling the decision to securitise

As the article outlines, a number of factors may underlie the decision to securitise. This Annex provides a simple, one-period model of just one of those factors: the distortion created by capital adequacy requirements.

Assume that a bank (or other financial institution) may choose between assets of two types: government bonds, referred to as gilts *(G)*, and loans *(L)*. Loans give rise to a capital requirement (δ); gilts do not.(1) The bank can fund its assets in three ways: by issuing asset-backed securities *(S)*, taking deposits *(D)* or using shareholders' funds *(K)*—equity capital and retained earnings. At time *t*, retained earnings are predetermined.

The bank therefore has the following balance sheet constraint:

$$G + L \equiv S + D + K \qquad \textbf{(1)}$$

where:(2) $K \geq \delta (L - S)$ **(2)**

and: $0 < \delta < 1$ **(3)**

It aims to maximise the profit that its shareholders receive in excess of their required return on capital; ÷ denotes this excess return:

$$\Pi = Gr_g + Lr_l - Sr_s - Dr_d - Kr_k \qquad \textbf{(4)}$$

÷ is simply the difference between the interest income on its assets and the associated funding costs. The bank earns interest on its gilt investments at rate r_g and on its loans at r_l; it pays r_s on the asset-backed bonds it has issued and r_d on its retail deposits; r_k is the required return on shareholders' funds. The interest received and paid are assumed to be net and gross of costs respectively. The equity and gilt markets are assumed to be perfectly competitive, so that the bank is a price-taker (quantity-setter) in these markets.

We assume, however, that it has a degree of market power in the other three markets, where it acts as a price-setter. In particular, we assume a semi-log linear form for the supply function for retail deposits (D^S) and for the demand functions for loans (L^d) and asset-backed securities (S^d):

$$\ln (D^S) = \alpha_0 + \alpha_1 r_d \qquad \alpha_0 > 0 \qquad \alpha_1 > 0 \qquad \textbf{(5)}$$

$$\ln (L^d) = \beta_0 - \beta_1 r_l \qquad \beta_0 > 0 \qquad \beta_1 > 0 \qquad \textbf{(6)}$$

$$\ln (S^d) = \psi_0 + \psi_1 r_s \qquad \psi_0 > 0 \qquad \psi_1 > 0 \qquad \textbf{(7)}$$

Other variables are not directly included, but can be considered to influence the parameters α, β and ψ, and so the demand for loans and asset-backed securities and the supply of retail deposits.

The bank's problem is thus to maximise ÷ . Given **(5)**–**(7)**, this can be presented as:

$$\max_{r_d,\, r_l,\, r_s} \Pi = (r_g(1-\delta) - r_s + \delta r_k) \exp(\psi_0+\psi_1 r_s) + (r_g - r_d) \exp(\alpha_0+\alpha_1 r_d) + [r_g(\delta-1) + r_l - \delta r_k] \exp(\beta_0-\beta_1 r_l) \qquad \textbf{(8)}$$

This yields the following equilibrium conditions:

$$r_d^* = r_g - \frac{1}{\alpha_1} \qquad \textbf{(9)}$$

$$r_l^* = \delta r_k + r_g(1-\delta) + 1/\beta_1 \qquad \textbf{(10)}$$

$$r_s^* = r_g(1-\delta) + \delta r_k - \frac{1}{\psi_1} \qquad \textbf{(11)}$$

These conditions state that the bank will expand its balance sheet until the marginal cost of funds is equal to the marginal return on its assets; and that it will re-allocate its asset (liability) portfolios until marginal returns (marginal costs) are equalised.

The optimal interest rate on securitisations, given by **(11)**, is positively related to a weighted average of the rate on alternative assets (gilts) and the capital adequacy costs of retaining loans on the bank's balance sheet. By differentiating **(11)** with respect to the variables relating to capital requirements, we can see the effect of changes in those variables on both the quantity of securitisations and the overall structure of the bank's liabilities:

$$dr_s^* / d\delta = (r_k - r_g) \quad > 0 \qquad \textbf{(12)}$$

$$dr_s^* / dr_k = (\delta) \quad > 0 \qquad \textbf{(13)}$$

From **(12)** we see that an increase in prudential requirements leads to an increase in r_s which, from **(7)**, implies that the absolute quantity of securitisation rises. As capital becomes relatively more expensive (r_k rises), the incentive to remove capital-intensive loans from the bank's balance sheet increases. From **(13)** we see that r_s rises as r_k rises, which implies that the quantity of securitisation, and the proportion of assets securitised, rises.

(1) This is a simplifying assumption, which does not affect the analysis; in reality, gilt holdings carry a risk weighting of either 10% or 20%, depending on the type of gilt and its maturity.

(2) We assume, however, that capital is expensive to hold ($r_k > r_g$). As a result, institutions will choose to hold the minimum possible, so that $K = \delta(L-S)$. In addition, the volume of securitisation is assumed to be no greater than the total of loans (ie $L-S \geq 0$). This implies that the following inequality must hold: $r_k \leq \frac{(\delta-1)}{\delta} r_g - \frac{\psi_0 - \beta_0}{\delta(\beta_1 + \psi_1)}$.