SECURITISATION IN THE EURO AREA

The recent turmoil in credit markets has highlighted how securitisation has changed in only a few years from being a relatively niche market in the euro area to being a major force behind capital market developments. This increasingly influential role of securitisation is of interest to central banks for a number of reasons. From a monetary policy perspective, securitisation, through its effect on the funding of banks and credit markets, not only impacts on the transmission mechanism via the supply of loans, but also affects monetary analysis. In addition, the recent turmoil in credit markets has strongly highlighted the significance of securitisation markets from a financial stability perspective. Lastly, securitisation has been at the forefront of financial innovation and, through the use of credit derivatives and related financial instruments, has contributed to financial integration in the euro area. This article will first present some facts about securitisation developments in the euro area. It will then focus on some possible monetary policy implications, also taking into account recent events. Finally, it will highlight some of the weaknesses of the securitisation market which led to the rapid evaporation of liquidity during the credit market turmoil.

1 INTRODUCTION

Over the past decade, securitisation has expanded dramatically. While this growth in securitisation has been a global trend, it has been particularly rapid in the euro area, owing to factors such as the introduction of the euro and the associated increase in financial market integration, as well as the movement towards a more market-based financial system. The large increase in securitisation forms part of a wider trend of financial innovation in credit markets, which also includes the development of credit derivatives and changes in the syndicated loan market. In the euro area, banks have securitised an increasingly wide range of financial assets. Initially, the most commonly securitised assets were mortgage loans, while in recent years more sophisticated forms of securitisation have been developed, and banks can increasingly securitise a large portion of their corporate and consumer credit portfolio.

Securitisation and financial innovation in credit markets have produced significant changes, both in the financial structure of the euro area and in the role of banks. The increase in securitisation has modified the functioning of credit markets, reducing the fundamental role of liquidity transformation traditionally performed by financial intermediaries. It is likely that the changing business model of banks from "originate and hold" to "originate, repackage and sell" will also have significant implications for the effectiveness of monetary policy via the banking sector. At the same time, the recent turbulence in credit markets has highlighted some features of certain products, which can impair the market functioning in times of strain, such as the products' high level of complexity and opacity, and consequently investors' over-reliance on credit ratings and the market's lack of liquidity.

This article focuses on developments in securitisation in the euro area and discusses some of their possible implications from a monetary policy perspective. Section 2 introduces the main concepts related to the securitisation market, and explains some of the basic instruments and originators' motives for using securitisation. Section 3 briefly reviews the spectacular increase in securitisation that has occurred in the euro area in recent years and its subsequent retrenchment in the last quarters of 2007. Section 4 discusses some potential effects of this securitisation process on the monetary policy transmission mechanism, while Section 5 assesses its impact on the operational framework for monetary policy. In the light of the above, Section 6 highlights some considerations related to the recent problems in the securitisation market.[1]

1 This article will not deal with the possible implications of securitisation activity for financial stability, as they have already been covered in the December 2007 Financial Stability Review, and will be considered in other forthcoming ECB publications.

2 SECURITISATION: CONCEPTS AND MOTIVES

Traditional securitisation can be defined as the pooling of financial assets, such as residential mortgage loans, and their subsequent sale to a special-purpose vehicle (SPV), which then issues fixed-income securities for sale to investors – known as asset-backed securities (ABS) – the principal and interest of which depend on the cash flows produced by the pool of underlying financial assets (see Chart 1). The SPV usually acquires the underlying assets from the originator in what is known as a "true sale".[2] The cash received from the investors who purchase the securities issued by the SPV is then passed back to the originator. The SPV also appoints a servicer to collect interest and principal payments on the underlying loans (in Europe, this is usually the originator). Two other important parties to the transaction are the swap counterparty, who is normally involved to hedge the interest rate and currency risks on the pool, and the trustee, who ensures that the money is transferred from the servicer to the SPV and that investors are paid in accordance with the promised priority. Despite the seeming complexity of the securitisation process, the key underlying concept is that if the originator goes bankrupt, the collateral held by the SPV is still good and the servicer ensures that payments on the collateral continue to be made, so that investors still receive their interest and principal. The credit quality of the securities issued by the SPV is thus de-linked from the solvency of the originator.

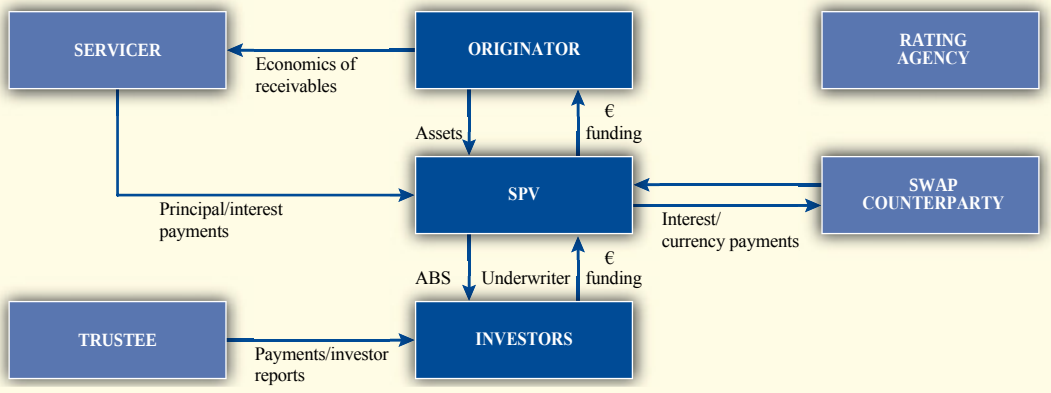
For originators, there are a number of non-mutually exclusive motives for using securitisation. First, in the case of traditional true-sale securitisation, it provides an important source of funding. Furthermore, as investors in ABS are typically different from investors in, for instance, covered bonds,[3] it also allows originators to expand and diversify their range of funding sources, which may facilitate more stable and cost-efficient financing. Funding via securitisation may also have advantages over outright loan sales owing to the diversification benefits of pooling and tranching the risks of the underlying assets.[4] Second, securitisation allows originators to transfer credit risk off their balance sheet. This has enabled banks to lower their regulatory needs for costly equity capital, thereby

2 For investors, this helps to guarantee the "remoteness" of the expected cash flows of the underlying assets from the solvency of the originator. The SPV usually does not have any other function apart from issuing the securities and owning the assets underlying these securities, so as to eliminate any incentive for another party to place the SPV into insolvency.

3 Covered bonds generally attract a different investor base from ABS because they often have: (i) a fixed and known maturity date; (ii) the additional protection of a special legal framework; (iii) greater liquidity. ABS, on the other hand, normally have amortising structures, such that the principal is paid back gradually over time and the maturity date of the security is often not known in advance. Some investors do not wish to assume this "prepayment risk" usually inherent in ABS.

4 See DeMarzo, P. M. (2005), "The Pooling and Tranching of Securities: A Model of Informed Intermediation", in *The Review of Financial Studies*, Vol. 18, pp. 1-35.

Chart 1 Transaction participants and functions in the creation of an ABS



Source: Adapted and simplified version of a chart in "European Securitisation: A Resource Guide", European Securitisation Forum.

reducing the overall cost of financing.[5] Third, securitisation could be used for general risk management purposes, as the capital relief and new funding would be employed to modify the risk profile of an institution, for instance by diversifying the loan portfolio geographically or by sector. Finally, the advent of collateralised debt obligations (CDOs) has also introduced the possibility of enhanced revenues via securitisation. In this respect, investment banks and investment managers often arrange transactions solely to exploit arbitrage opportunities in credit risk markets.

Given that cost-efficient funding is an important objective, issuers aim to obtain the highest possible credit rating from a rating agency for the bulk of the notes issued to investors. Although the credit quality of the underlying individual loans may be rather low, the rating can be boosted substantially by pooling the portfolio of assets and using a variety of credit enhancement techniques, such as third-party guarantees or the slicing of the issuance of securities into different tranches. In the simplest transaction, the securities issued by the SPV would be broken down into three "tranches": the senior tranche, the mezzanine tranche and the equity tranche.[6] All tranches are backed by the same pool of assets but, if some of the underlying assets default, there is a "cascade" of payments such that the equity tranche is the first to suffer losses, followed by the mezzanine tranche, and lastly the senior tranche. In order to signal the quality of the securitised assets and align its interests with those of investors, the originator of the assets can retain part of the equity tranche on its balance sheet. As it would bear most of the risks, the originator would maintain a strong incentive to continue monitoring the credit quality of the underlying assets.[7]

Traditionally, the majority of securitised assets have been large numbers of small, relatively homogenous, consumer-related assets, such as prime residential mortgage loans. These assets are particularly appropriate for securitisation because the information asymmetries (or the different degrees of knowledge) between originating banks and outside investors regarding the quality of the underlying claims are usually rather low. This allows outside investors to estimate the value of the underlying portfolio quite accurately. Furthermore, pooling large amounts of homogenous and usually small assets helps to reduce idiosyncratic risks, i.e. risks related to individual underlying assets (such as mortgage loans). At the same time, the underlying portfolio remains subject to macroeconomic risks, for instance declines in housing prices or market confidence crises, which can have a strong impact on the value of the securities, as illustrated by the recent credit market turbulence.

Over the last few years, there has been a significant trend towards the securitisation of generally larger, heterogeneous assets, such as high-yield bonds, leveraged loans or mezzanine tranches of other ABS transactions, often combining some of the techniques of traditional securitisation with recent innovations in credit risk management (such as CDOs, see Box 1). As well as selling the underlying assets to the SPV using a true sale, arrangers can transfer only the credit risk of the underlying assets using credit derivatives, while the actual assets remain on the balance sheet of the arranger (a process which is known as "synthetic securitisation").

5 In the past, under the first Basel Capital Accord ("Basel I"), banks often securitised part of their loan portfolio, while retaining the risky equity tranche on their balance sheet. In this way, banks were often able to reduce their Basel I capital requirements and retain significant risk exposure to the securitised assets. The intention of the revised Basel Accord ("Basel II"), which started to come into force in 2007, is to align regulatory capital requirements with the actual economic risk of exposure more closely, thereby reducing the level of regulatory arbitrage which was often present under Basel I.

6 In practice, the number of tranches is normally much higher than three and the senior tranche can be broken into further "sub-tranches", which often have the same credit rating, but different maturity dates, in order to better cater for different investor preferences.

7 In recent years, however, the equity tranches have often been sold off to the markets. At the same time, regulators in a number of countries have often forced originators to hold on to the equity tranches.

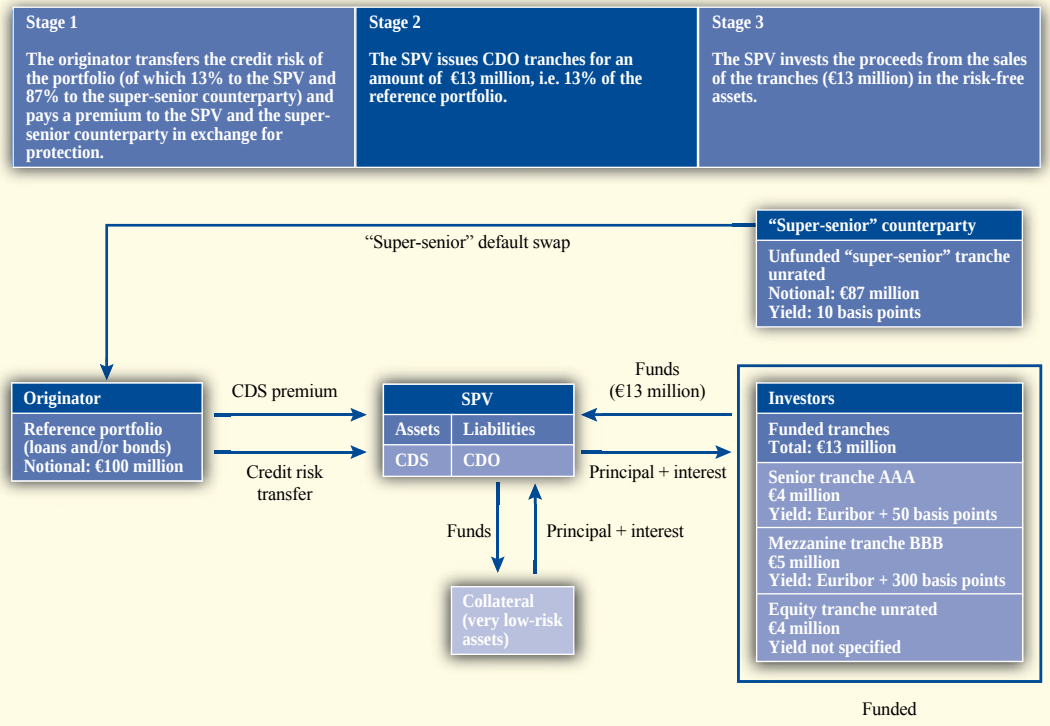
Box 1

COLLATERALISED DEBT OBLIGATIONS (CDOs)

In very broad terms, CDOs are instruments that enable market participants to readily transfer very significant amounts of credit risk to investors, often via highly leveraged transactions. CDOs aim to create value by attracting liquidity towards credit risk in asset classes that, on their own, would be too illiquid or too complex for some investors to consider. Unlike traditional securitisation, the number of assets backing a CDO tends to be rather low, but they are often highly heterogeneous, with high concentrations of exposure to individual obligors. Hence, it is more difficult for investors to ascertain the risk of CDOs, as they need to consider not only the credit risk of individual assets, but also correlations between them. In practice, rating agencies play a crucial role, assigning credit ratings to the different tranches based on their models and assumed correlations.

As well as using the "true sale" cash method that is characteristic of traditional securitisation, the banks arranging CDO transactions often use credit derivatives, such as credit default swaps (CDS), to transfer the credit risk of the underlying pool of assets (which is usually termed "synthetic securitisation"). In the case of synthetic securitisation, the transactions are highly flexible in terms of their asset mix and risk-return characteristics, enabling investors to choose "tailor-made" CDOs to suit their needs. Furthermore, the underlying assets remain on the balance

A partially-funded synthetic CDO



Sources: See Cousseran, O. and Rahmouni, I. (2005), "The CDO Market: Functioning and Implications in terms of Financial Stability", in *Financial Stability Review*, No 6, June, Banque de France; Tavakoli, J. M. (2003), "Collateralized Debt Obligations and Structured Finance: New Developments in Cash and Synthetic Securitization", John Wiley & Sons.

sheet of the originator or arranger, while the SPV holds a pool of CDS that reference the assets. The CDS generate a premium payment from the originator or arranger to the SPV, but in the event that any of the underlying assets default, the SPV is responsible for any losses. On the liability side, the SPV still issues fixed-income securities for sale to investors which can either be "funded" or "unfunded" (see diagram). In funded synthetic securitisation, investors pay for the notes in cash which is invested by the SPV in high-quality assets, such as government or covered bonds. In unfunded transactions, investors do not put any cash upfront, which means that the arranging bank risks the investor failing to provide compensation if the underlying assets default. Most synthetic transactions tend to be partially funded, with the super-senior tranche being unfunded, and the other senior and subordinated tranches being funded.

As with traditional ABS, CDOs are classified by the type of underlying asset. If the underlying assets are loans, used, for example, to fund leveraged buy-outs of corporations, the transaction is known as a collateralised loan obligation (CLO), but if the underlying assets are corporate bonds or other debt securities, the transaction is known as a collateralised bond obligation (CBO). The latter – which expanded significantly in 2006 – have normally been cash rather than synthetic instruments, i.e. the SPV purchases the underlying collateral outright, as in traditional securitisation.

Investors' search for high-yielding assets led to CDO instruments becoming increasingly complex. Consequently, they took on higher leverage and more risky and opaque underlying exposures. As a result of their complexity and opacity, there was a very limited secondary market for such instruments, and so they were often valued using banks' in-house models. By construction, these models needed to make a number of assumptions and, because of the leverage, the slightest change in these assumptions could often lead to significant changes in the price of the security. As will be explained in more detail in Section 6, the extreme difficulty in valuing such instruments, as well as the fundamental lack of liquidity in the CDO market, have been instrumental in the recent turbulence in credit markets.

3 MARKET DEVELOPMENTS

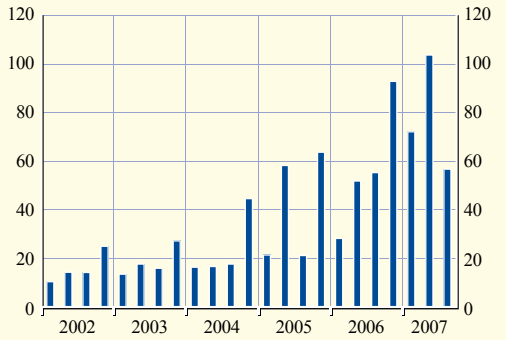
The growth in euro-denominated securitisation increased at the end of the 1990s and has been particularly strong in recent years (see Chart 2).[8] While the rise in securitisation has been a global trend, in Europe it has also been linked to regional factors. In particular, the introduction of the euro contributed to closer financial integration in Europe, enabling institutional investors to increase their cross-country exposure and giving issuers access to a broader pool of potential investors.[9] The recent financial market turbulence, however, had a significant dampening effect on securitisation activity in the second half of 2007.

8 Data on securitisation at the euro area level are currently not available from the Eurosystem. Data from a number of different data providers presented in this article are often not directly comparable owing to differences in geographical coverage, conceptual definitions and compilation methods.

9 See the ECB's Structural Issues Report on "Corporate finance in the euro area", May 2007.

Chart 2 Issuance of euro-denominated ABS

(EUR billions; quarterly issuance)



Source: European Commission.
Last observation: Third quarter of 2007.
Note: Includes issuance in euro by non-euro area originators.

The securitisation market in the euro area has a number of characteristics: first, the special role played by synthetic securitisation (see Box 1 for a definition) in overcoming the limited size and fragmentation of corporate bond markets; second, the considerable variation in the level of securitisation across the euro area; and third, the dominance of the residential mortgage-backed securities (RMBS) segment (and more recently the commercial mortgage-backed securities (CMBS) and CDO segments) and the relatively subdued level of securitisation of loans to small and medium-sized enterprises (SMEs). These features are analysed further in this section.

THE ROLE OF SYNTHETIC SECURITISATION

Direct financing for non-financial corporations via the corporate bond market has traditionally been rather limited, despite significant growth since the introduction of the euro.[10] In addition, firms which do raise funds through capital market products have tended to be rather concentrated in particular industries, such as telecommunications. In the light of the limited role of the corporate bond market, synthetic CDO securitisation has played a beneficial role in fostering more "complete" markets. It has allowed investors to broaden their risk exposure to more firms and industries than had been possible in the past. In addition, since the assets can stay on the originator's balance sheet, the legal and administrative costs are significantly lower than those involved in an outright sale.[11] It is difficult to estimate the size of the market, as most transactions are private placements and there are no comprehensive data publicly available, but some sources indicate that the issuance of synthetic CDOs[12] reached more than €124 billion in 2006 (see Chart 3). At the same time, issuance is expected to have declined in the last quarter of 2007 as a result of strains in credit markets.

CROSS-COUNTRY DIFFERENCES IN ISSUANCE VOLUME

In general, the amount of securitisation has increased in all euro area countries, but the largest markets are based in Spain, the Netherlands and Italy (see Chart 4).

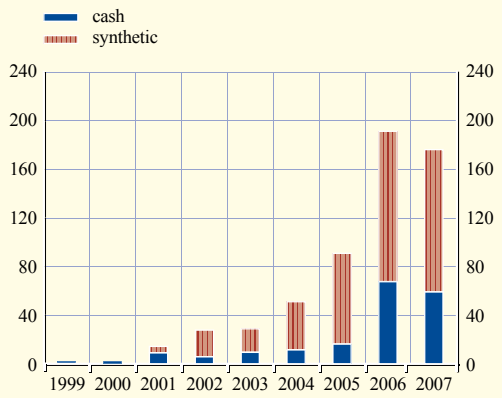
10 According to ECB statistics, outstanding nominal amounts of euro-denominated debt securities issued by euro area-based non-financial corporations amounted to only €561 billion at the end of 2006, compared with €3,668 billion for MFIs and €1,035 billion for non-MFI financial corporations, which consisted to a large extent of ABS and CDOs issued by SPVs.

11 This is particularly important in Europe where the true-sale securitisation of a portfolio of loans to entities in more than one country would involve dealing with legal and administrative complexities in multiple jurisdictions. See the 2007 European Financial Markets Lawyers Group report on the legal obstacles to cross-border securitisations in the EU (www.efmlg.org).

12 Measured as the value of both funded and unfunded tranches.

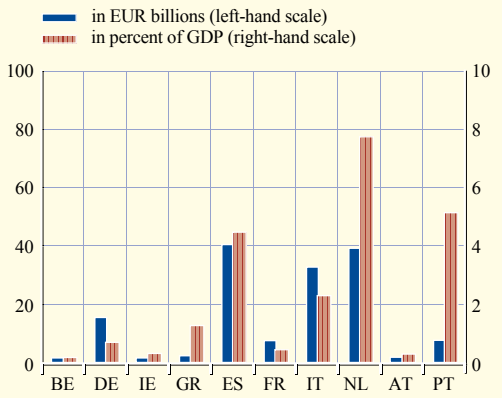
Chart 3 Issuance of euro-denominated cash and synthetic CDOs

(EUR billions)



Source: Creditflux.
Note: Data for 2007 refer only to the first three quarters.

Chart 4 Securitisation in the euro area by country of collateral in 2006



Sources: European Securitisation Forum and Eurostat.
Note: CDOs and synthetic securitisation are not included.

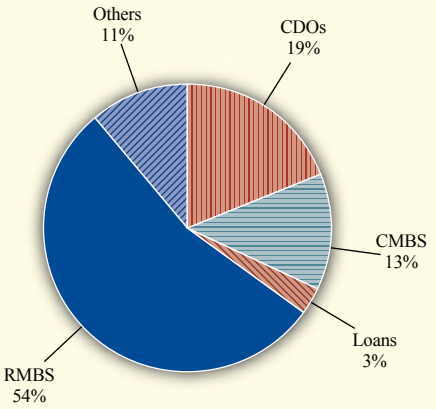
Furthermore, relative to GDP, securitisation has also been very strong in Portugal. One of the main factors causing the divergent levels of issuance is related to developments in RMBS, which account for more than half of all securitisation issuance. The issuance of RMBS has generally been higher in countries such as Spain and the Netherlands, where house purchase lending has been growing considerably faster than deposits. Another key factor affecting the issuance of RMBS in different countries is the legal framework for the early repayment of mortgage loans by borrowers. In countries where significant penalties are applied, which reduce the incentive for early repayment, there is less need for issuers to use amortising structures, such as RMBS, to transfer the prepayment risk to investors. Instead, these banks can resort to covered bonds with the full repayment of the principal amount on a single date. There are also important legal, administrative and regulatory factors that affect issuance volumes, not only of RMBS, but also of all other types of securitisation. For example, the absence of specific rules in some continental European civil codes has either discouraged market participants in those jurisdictions from securitising their assets, or meant that they have been saddled with greater economic and administrative costs (e.g. the use of offshore vehicles, re-registration of the mortgage deed, the need for borrower notification and/or consent, the taxation treatment of the transaction, etc.).

RMBS, CDO AND CMBS INSTRUMENTS CONTINUE TO DOMINATE

As indicated earlier, RMBS have persistently accounted for the largest share of securitisation issuance in the EU since the market started, growing at an annual rate of about 30%, but the issuance of other asset classes, in particular CDOs[13] and CMBS, has also accelerated strongly. RMBS still accounted for around 54% of total European issuance in 2006, but CDOs accounted for around 19% and CMBS for 13% (see Chart 5).

Chart 5 European securitisation issuance in 2006

(percentages, by collateral type)



Source: European Securitisation Forum.
Notes: Includes non-euro area European issuance, such as the issuance of securities with UK collateral. "CDOs" includes securities issued in euros only. "Loans" includes leveraged, commercial, consumer, corporate and other loans. "Others" includes car loans, credit card receivables, leases, account, health care, insurance, utility and other receivables.

The issuance of ABS backed by loans to SMEs could potentially encourage additional funding for lending to SMEs. In the euro area, however, ABS backed by SME loans constitute a small fraction of total securitisation issuance, and the market is concentrated mainly in Germany, Spain and, to some extent, the Netherlands.[14] The strong growth of the SME securitisation markets in Germany and Spain has been fuelled by special government support programmes, specifically initiated to strengthen the securitisation of SME loans in order to promote further lending to this sector. There are several factors which have tended to inhibit the growth of SME loan securitisation in the euro area. First, there is a lack of standardisation in SME loans, especially compared with other products, such as mortgages or consumer loans.

13 The CDO market is particularly difficult to quantify and map owing to the lack of sources that are consistent and representative of the market as whole. See Cousseran, O. and Rahmouni, I., op. cit.

14 By the end of the first quarter of 2007, the cumulative issuance of SME CLOs amounted to €72 billion by German banks, €48 billion by Spanish banks and €23 billion by Dutch banks.

Second, the availability of data is a significant issue: originators may find it difficult to provide historical data on the performance of SME loans through an economic cycle. Third, while large lenders can often fund themselves more cheaply using other sources (such as unsecured borrowing), smaller lenders, which would have more incentives to resort to this type of securitisation, do not have enough SME loans to generate reasonably sized transactions.

4 SECURITISATION, BANK LENDING AND MONETARY POLICY

Securitisation and financial innovation in credit markets have produced significant changes, both in the financial structure of the euro area and in the role of banks therein. One of the main effects of the developments in true-sale and, in particular, synthetic securitisation, is that large amounts of credit, which were traditionally illiquid, have now become available outside the banking sector. In a sense, while the origination of loans remains largely local, securitisation can make loan funding global in that it makes it tradable and available to investors. As a result, banks have maintained, and probably enhanced, their role as originators of credit, while progressively losing importance as primary holders of illiquid assets.

From a monetary policy perspective, the fact that securitisation is bringing about changes in credit markets means that it will also lead to changes in loan dynamics,[15] thereby altering the behaviour of monetary counterparts and monetary policy analysis in general (see Box 2). Under normal macroeconomic conditions, one of the anticipated consequences of securitisation from a macroeconomic perspective is an overall increase in the aggregate supply of loans. This is because, by being able to securitise part of their assets, banks could have access to additional funding that could be used, in turn, to grant additional loans. Furthermore, by fully removing loans from their balance sheet, banks have often been able to obtain regulatory capital relief and have used it to expand the supply of loans. In this respect, the large increase in securitisation probably contributed to the strong loan growth and favourable lending standards from early 2005 to the first half of 2007.

By affecting banks' conditions, changes in securitisation activity are also likely to affect the transmission mechanism of monetary policy. According to the bank lending channel theory, banks' conditions can significantly affect how their supply of credit responds to monetary policy changes.[16] In this respect, after a monetary tightening, the drop in the supply of credit is expected to be larger for the following types of banks: (i) small banks that are mostly financed by deposits and equity; (ii) less liquid banks[17] that cannot protect their loan portfolio against monetary tightening simply by drawing down cash and securities; and (iii) poorly capitalised banks that might be below their target capital and have less access to markets for unsecured funding.[18] However, securitisation is expected to weaken the effects of these factors on the transmission mechanism. First, securitisation enables banks to provide additional lending without increasing the size of their balance sheet. Second, it enables them to obtain additional liquidity independently of their securities holdings. Third, by removing loans from their balance sheet through securitisation, banks can improve their capital position on account of the transfer of credit risk.

Overall, securitisation and other innovations in credit risk markets are expected to have a significant impact on banks' ability and

15 For an overview of the role of credit and the banking sector from a monetary policy perspective, see Stiglitz, J. E. and Greenwald, B. (2003), "Towards a New Paradigm in Monetary Economics", Cambridge University Press.

16 See Bernanke, B. (2007), "The Financial Accelerator and the Credit Channel", speech at the conference entitled "The credit channel of monetary policy in the twenty-first century", Federal Bank of Atlanta, Georgia, 15 June. Existing evidence on the effects of securitisation on interest rates remains scarce and conclusions are mixed.

17 Kashyap, A. and Stein, J. C. (2000), "What Do a Million Observations on Banks Say About the Transmission of Monetary Policy", in *American Economic Review*, Vol. 90, No 3, pp. 407-428.

18 See Van den Heuvel, S. J. (2002), "Does Bank Capital Matter for Monetary Transmission?", in *Federal Reserve Bank of New York Economic Policy Review*, May, pp. 260-266.

Box 2

THE IMPACT OF BANK LOAN SECURITISATION ON MONETARY ANALYSIS

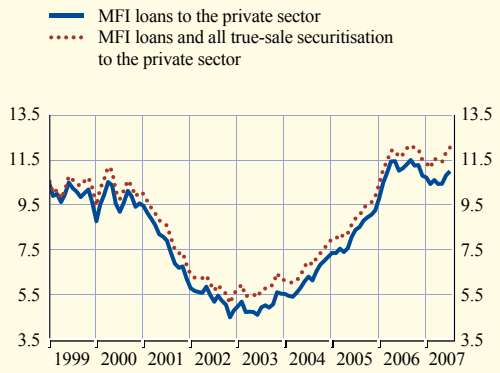
The aim of monetary analysis is to identify monetary trends associated with price developments over the medium to longer term. Extracting this policy-relevant "signal" has become more challenging in an environment where monetary developments are increasingly influenced by financial innovation such as securitisation. This box assesses the impact of securitisation on MFI credit to the private sector and on the broad monetary aggregate M3, from both a conceptual and a quantitative point of view. The focus of the box is on the direct effects on MFI balance sheet positions, but the more indirect effects that work through MFIs' reduced credit exposure are also touched upon.

The effects of loan securitisation on MFI credit to the private sector

The most obvious impact of loan securitisation on the MFI balance sheet is its direct effect on loan and credit positions. In the case of traditional true-sale securitisation, the loan is transferred from the MFI balance sheet to that of a financial vehicle corporation (FVC). This reduces the recorded MFI loans in statistical terms.[1] However, from the perspective of the borrower, the loan is still outstanding. Traditional securitisation can thus drive a wedge between the growth rate of total loans granted to the private sector and the growth rate derived from the MFI balance sheet statistics. Estimates on the basis of data available at the ECB on traditional loan securitisation suggest that the annual growth rate of MFI loans to the private sector in the euro area is currently about one percentage point below the annual growth rate of total loans to the private sector originated by MFIs (see Chart A).[2] In the case of synthetic securitisation, only the credit risk of a loan is transferred to the FVC, while the loan itself remains on the MFI balance sheet. Synthetic securitisation thus has no direct impact on MFI loan statistics.

Chart A Impact of true-sale securitisation on loans to the private sector

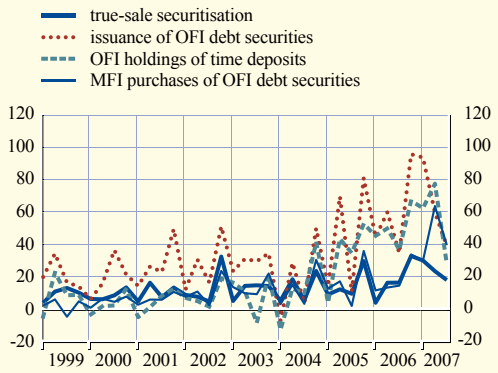
(annual percentage changes)



Sources: ECB, ECB estimates.

Chart B Securitisation, issuance and MFI purchases of OFI debt securities, and OFI holdings of time deposits

(quarterly flows in EUR billions)



Sources: ECB, ECB estimates.

1 Following the adoption of the International Accounting Standards (IAS39) by the euro area MFIs, a traditional securitisation transaction may not lead to a decrease in the loan holdings if the securitised loan is not derecognised, i.e. taken off the MFI balance sheet in accounting and statistical terms.

2 It should be noted that the currently available estimates on traditional securitisation for the euro area are surrounded by uncertainty and suffer from partial coverage. Harmonised and more detailed securitisation statistics are currently being developed by the ESCB.

Another relevant aspect when looking at the effects of securitisation on MFI credit is that the ECB's definition of credit to the private sector is a broad concept. In addition to loans, credit to the private sector includes financing provided through purchases of debt securities (such as corporate bonds), as well as of shares and other equity issued by non-banks. In order to improve the asset diversification of their credit portfolios, MFIs may buy debt securities issued by other financial intermediaries (OFIs) as a result of the securitisation process.[3] In this respect, Chart B shows that the quarterly flows of MFI purchases of OFI debt securities correspond in magnitude to the reduction in the outstanding amount of loans due to traditional securitisation. This implies that there has only been a change in the composition of credit to the private sector and no major impact on the overall amount of credit. By contrast, in the case of synthetic securitisation, if the MFI sector buys securities issued by the OFIs, there will be an increase in overall credit growth on the balance sheet, even though households and firms have not received any more financing.

The effects on components and other counterparts of M3

In addition to loans (and, more generally, credit) to the private sector, securitisation activities between MFIs and FVCs can show up in other positions on the consolidated balance sheet of the MFI sector. Which precise positions are likely to be affected depends on the type of securitisation transaction, the way it is financed and the residence of the FVC involved.

Conceptually, in the case of traditional securitisation, the transfer of loans should lead to a corresponding decrease on the liability side of the MFI balance sheet. Initially, this decrease will most likely be reflected in a decline in overnight deposits of OFIs, but may also be subsequently rebalanced across other OFI holdings of deposits or securities. However, as the FVC and the MFI are typically closely linked and act together, it may well be that the FVC first has to borrow in order to acquire the loan from the MFI. This would lead to an increase in short-term deposits for a very short transactions-related demand. When assessing these impacts of traditional securitisation, it needs to be borne in mind that, due to accounting standards or the ability of MFIs to grant more loans, a decrease in the MFI balance sheet may not take place.[4] In this respect, the accounting standards applied to securitisation transactions differ across euro area countries.

Synthetic securitisation has no direct impact on the MFI balance sheet. However, the longer-term financing of the purchase of the credit risk by the FVC is generally carried out through the issuance and sale of ABS. The proceeds of these sales need to be held as collateral and may be invested in different instruments. To the extent that they are invested with MFIs, they may impact on the deposit or debt security positions on the MFI balance sheet. In this respect, Chart B shows that, since mid-2004, the flows into OFI holdings of time deposits follow a pattern similar to those of the issuance of OFI debt securities. However, it must be noted that these time deposits may not only reflect collateral held, but also two other elements, depending on the country: i) the consequence of accounting standards that preclude MFIs from derecognising substantial parts

3 The importance of loan securitisation can be seen in the strong issuance of debt securities by non-monetary financial corporations, which consists almost exclusively of debt securities issued by OFIs (see also the tables in Section 4.1 to 4.8 of the "Euro area statistics" section of the ECB's Monthly Bulletin). In September 2007 the amount outstanding of debt securities issued by non-monetary financial corporations constituted around 11% of total outstanding debt securities and 19% of the stock of debt securities issued, with the exclusion of those issued by the general government. These shares are larger than the corresponding shares of debt securities issued by non-financial corporations and, in particular, they have doubled compared with their respective values in the period 1999-2000.

4 Following the adoption of IAS39 by euro area MFIs, a traditional securitisation transaction may not lead to a one-to-one decrease in the loan holdings, if part of it is not derecognised and is, for instance, balanced on the liabilities side under "deposits" or "remaining liabilities". At the same time, the liquid instrument holdings of MFIs increase by the amount of the loans sold.

of their traditional securitisation transactions, and ii) non-marketable covered bonds placed with OFIs by the MFI as a basis for securitisation.

The sale of ABS by OFIs may also trigger changes in the deposit holdings of the money-holding sectors that buy these securities. In this respect, it is conceivable that the purchase of ABS by a household, for instance, implies a reduction in households' short-term deposits and an increase in FVC/OFI holdings of short-term deposits by the same amount. This would have an impact on the sectoral composition of M3 as regards short-term deposits, but no impact on overall M3. However, if the FVC were to invest the proceeds in longer-term rather than shorter-term deposits (outside M3), this would imply a reduction in overall M3.

Securitisation transactions might also have an impact on the external assets and liabilities of MFIs for two reasons. First, if FVC securities are purchased by a non-euro area resident/MFI, ceteris paribus, the transaction will increase the net external assets of the MFI and could therefore affect M3. Second, securitisation often involves FVCs located in offshore centres, which can also impact on the MFI's net external asset position, depending on the way the financing transaction is conducted.

Conclusions

The overall impact of loan securitisation on money and credit aggregates is not easy to quantify, as it depends on the type of securitisation and on accounting standards on the one hand, and on the financing and investment strategies of both the FVCs that sell the ABS and of the money-holding sectors that buy the securities, on the other hand. Many different financing and investment transactions are presumably occurring simultaneously and may cancel each other out in terms of their impact on M3, but, if they are taking place at different points in time, they may lead to some short-term volatility in M3 developments.

In order to extract policy-relevant signals from monetary developments, it is important to gauge the impact of financial innovation, such as securitisation, on monetary aggregates through a comprehensive analysis of the MFI balance sheet. The ECB's monetary analysis is well placed to live up to this challenge, as it can examine in increasing detail the various components, counterparts and money-holding sectors of M3.

incentives to grant credit and, more specifically, on the effectiveness of the bank lending channel. In this respect, securitisation has probably altered those bank characteristics usually emphasised in the literature when identifying shifts in loan supply. For instance, the size indicator is less significant, as securitisation activity can considerably reduce the amount of loans on banks' balance sheets. Liquidity is also affected by securitisation because of the short-term inflows caused by the sale of ABS which modify the standard liquidity ratio. Furthermore, securitisation may reduce the regulatory requirements for capital if the underlying risk is completely passed on to the markets, as well as render the standard capital-to-asset ratio a poor approximation of the relevant capital constraints faced by banks in this regard. More broadly, securitisation provides banks with additional flexibility to face changes in market conditions associated with monetary policy movements.

According to some tentative empirical evidence, the increase in securitisation is expected to diminish the impact of monetary policy changes

on banks' loan supply, although this effect seems to be dependent on the economic cycle.[19] However, this does not mean that the banking sector has become less relevant from a monetary policy perspective. For instance, by making banks more dependent on market funding (and due to the opacity of many of the instruments), securitisation could tighten the connection between banks' funding and financial markets. As a result, banks' incentives and ability to lend are expected to depend on financial market conditions to a larger extent than in the past, when banks were overwhelmingly funded via bank deposits. This is mainly because deposits tend to have more stable remuneration and are less dependent on financial market conditions than tradable instruments. Under more extreme circumstances, the impact of the banking sector's situation on credit conditions could actually be significant (see Section 6).[20]

5 THE ROLE OF ABS IN THE IMPLEMENTATION OF MONETARY POLICY

Securitisation has impacted on the implementation of monetary policy in the euro area, as ABS constitute a growing share of the collateral accepted in the Eurosystem's credit operations. By the end of September 2007, the pledging of ABS with the Eurosystem reached €215 billion, which represents 17% of all collateral.

This rapid increase in the mobilisation of ABS as collateral for the Eurosystem's credit operations is an important development in a number of ways.

First, it shows that the Eurosystem's collateral framework has been highly flexible and responsive to financial market innovation. The criteria for eligible collateral were purposely designed to be rather general, focusing on the objective qualities of the asset and the issuer, so as to ensure that the various risks to the central bank are sufficiently low, as well as to be neutral towards financial market developments. Consequently, after the inception of the securitisation market in the euro area in 1999, ABS that fulfilled the existing general criteria became automatically eligible. Since some of those instruments displayed features that the Eurosystem did not feel comfortable with as a collateral taker, some specific eligibility criteria for structured finance products became applicable in 2006. In addition to the general eligibility criteria, such as being denominated in euro and having a minimum credit rating of single-A, ABS must now fulfil the following criteria: (i) only the most senior tranche (or sub-tranches) of an ABS structure are eligible;[21] (ii) ABS must be backed by assets that have been legally acquired by the SPV in a manner that the Eurosystem considers to be "true sale", (iii) ABS must not be backed by assets involving credit derivatives; (iv) the issuing SPV must be located in the European Economic Area (EEA).[22] These criteria were introduced primarily in order to exclude such instruments as synthetic CDOs and cash CDOs containing other synthetic tranches of ABS from eligibility. As the turmoil in credit markets has shown, these types of asset display significantly higher rating volatility and are very difficult to value, and were therefore not deemed suitable as collateral for central bank credit operations. The issuer residence of the SPV was restricted to the EEA to simplify the eligibility assessment procedures. Nevertheless, despite the introduction of these additional criteria, the volume of eligible ABS still amounted to €756 billion at the end of September 2007, which is estimated to constitute approximately 60% of the entire outstanding European securitisation market. Compared with

19 Findings for the US jumbo mortgages market suggest that securitisation could make the bank lending channel less effective, see Loutskina, E. and Strahan, P. E. (2006), "Securitization and the Declining Impact of Bank Finance on Loan Supply: Evidence from Mortgage Acceptance Rate", *NBER Working Paper Series*, No 11983. Altunbas, Y., Gambacorta, L. and Marqués, D. found similar results for the euro area, but the "sheltering effect" of securitisation on the supply of loans seems to depend on the economic cycle and bank risk, see (2007), "Securitisation and the Bank Lending Channel", *Bank of Italy Working Paper Series*, No 653.

20 See Bernanke, B., op. cit.

21 This was not a new criterion, as subordinated tranches of ABS had never been eligible after 1999; rather, in 2006, there was an explicit clarification of how the ECB defines subordination in the case of ABS.

22 The EEA includes the 27 Member States of the EU, as well as Iceland, Norway and Liechtenstein.

other central banks in the world, the Eurosystem accepts a high volume of "private label" ABS.[23]

Second, the ability of banks to mobilise their ABS portfolios in order to obtain central bank liquidity is likely to deepen the link between financial market developments and the granting of credit by banks, which has already been discussed in Section 4 of this article.

Third, the wide acceptance of high-quality collateral in the Eurosystem's credit operations has probably helped indirectly to mitigate liquidity problems in a number of market segments.

6 SOME CONSIDERATIONS RELATED TO RECENT STRAINS IN CREDIT MARKETS

Securitisation has certainly played a beneficial role both in ensuring that credit markets in the euro area have become more "complete" and by allowing banks and investors to transfer and diversify their risks more easily. At the same time, the recent turbulence in credit markets,[24] initially triggered by the losses on US sub-prime mortgages, has clearly highlighted some weaknesses in the securitisation market, predominantly in the CDO segment, but also in the asset-backed commercial paper (ABCP) conduits and structured investment vehicles (SIVs), which had been used by banks to finance off-balance sheet such CDOs and other structured credit products.

These weaknesses include (i) the instruments' high level of complexity, (ii) the difficulty in valuing such instruments, (iii) the tendency of some investors to over rely on ratings, and (iv) inadequate information on financial institutions' exposures to structured instruments and off-balance-sheet entities, which makes it very difficult to track final exposures through the financial system. Recent events have revealed the resulting fragility of structured credit markets, illustrating that episodes of mispricing of credit risk may be followed by abrupt adjustments in credit conditions owing to the opaqueness and stronger dependence on market perceptions.[25]

The weaknesses in the CDO segment, in particular the valuation difficulties, have contributed to the evaporation of liquidity in these instruments since the turmoil began. CDOs need to be valued using sophisticated theoretical models, and the prices that the models produce are usually highly sensitive to underlying correlation assumptions and methodologies. Since the rating agencies began to downgrade a large number of CDOs and RMBS with exposure to US sub-prime collateral, the market has lost confidence in the accuracy of the valuation models. The uncertainty about the valuations has been exacerbated by concerns that the SIVs, which have been among the largest investors in these assets, would be forced to start selling off their collateral to repay investors. Liquidity has also been adversely affected among fears that banks which sponsored ABCP conduits would be forced to once again include the assets backing the ABCP in their balance sheets.

The withdrawal of liquidity has also affected the traditional ABS segment, including the most simple securitisation structures, such as prime RMBS. Even before the turbulence began, the secondary market for traditional ABS was not particularly active, as the investor base typically had a "buy-and-hold" strategy and the marking-to-market of their positions was normally carried out using rough approximations.[26] However, since the problems in credit markets started to unfold, risk management considerations have been paramount and so the accurate valuation of securities has become very important, even to

23 In its main temporary open market operations, the Federal Reserve System accepts mortgage-backed securities (MBS) guaranteed by the government agencies as eligible collateral, but not "private label" MBS without such a guarantee.

24 For a description of the recent credit market turmoil, see ECB (2007), *Financial Stability Review*, December.

25 See Rajan R. (2006), "Has Financial Development Made the World Riskier?", *NBER Working Paper Series*, No 11728, and the ECB's Structural Issues Report on "Corporate finance in the euro area", May 2007.

26 See the report of the Mortgage Funding Expert Group, European Commission, 22 December 2006.

Comparison of spreads for triple-A rated covered bonds and prime RMBS in July and October 2007

(basis points)

	July	October
Spanish covered bonds (Cedulas, 5 years, to swaps [1])	+3	+23
German covered bonds (Pfandbriefe, 5 years, to swaps [1])	-5	+1
Spanish RMBS (all-in debt only cost to Libor [2])	+13	+80
UK RMBS (all-in debt only cost to Libor [2])	+11	+49
Netherlands RMBS (all-in debt only cost to Libor [2])	+14	+43

Sources: RBS Global Banking and Markets.
1) Difference in the yield on a five-year maturity bond versus the equivalent maturity interest rate swap.
2) Difference in bond yield versus the euro London Interbank Offered Rate (Libor).

"buy-and-hold" investors. The lack of liquidity in the traditional ABS segment has also resulted in investors suffering marked-to-market losses, which, although small compared with the losses on products backed by US sub-prime mortgages, has led to greater risk aversion and further withdrawal of liquidity.

As a result of the vicious circle of withdrawal of liquidity leading to marked-to-market losses and then a further withdrawal of liquidity, the issuance of traditional ABS in the euro area declined substantially in the third quarter of 2007, as compared with previous quarters. In parallel, RMBS and covered bond yields have increased significantly in most countries (see table). So far, however, the performance of the mortgage loans that back the RMBS and covered bonds has been relatively good, with losses and delinquencies remaining at historically low levels in most euro area countries.

7 CONCLUSIONS

The significant increase in securitisation in the euro area over the last decade has modified the functioning of credit markets and transformed the traditional role of banks as providers and monitors of credit. This article has described some of the basic concepts and instruments, as well as highlighted some of the special features of the securitisation market in the euro area. It has also shown that central banks are paying more and more attention to securitisation in the light of its impact on the conduct of monetary policy, as it can alter both loan dynamics and the impact of interest rate changes on the supply of credit. The importance of accepting a broad range of assets as collateral for the smooth functioning of interbank money markets, as well as for the stability of financial markets, was most clearly illustrated during the recent episode of volatility in financial markets. The episode also showed that, under extreme conditions, securitisation could have an impact on credit conditions and financial stability.