

Main features of the repo market in the euro area

The use of repos (sale and repurchase agreements) has become widely accepted as a financing and risk mitigation mechanism in the euro area. It has developed into a deep and resilient market used by a broad range of entities (central banks, commercial and investment banks, corporate treasurers, mutual funds, etc.) for differing purposes. The repo market has gained increasing importance in the money market and is now a sound alternative to unsecured lending or short-term securities issuance. The ECB, and the Eurosystem at large, has a special interest in the repo technique insofar as it is the main instrument used in its monetary policy and intraday credit operations. In addition, repos, because of their hybrid nature (cash and securities legs), provide a link between several markets (the securities markets, the unsecured money market and the derivatives and swap market) and contribute to increasing their liquidity. However, the integration of the national repo markets across the euro area has been and remains, despite considerable progress, a slow and complex process and is lagging behind the level of integration reached in other markets. Thus, further impetus is necessary to enable repo markets to reach the level of integration and efficiency that is needed to reap the full benefits of the financial area which has flourished with the advent of the single currency.

I The basics of the repo market

What is a repo?

A repo (a sale and repurchase agreement) involves a sale of securities with a simultaneous agreement to repurchase those securities at a specified price on a predetermined future date. Repos can be perceived from two different angles. In terms of its economic function, a repo is a very simple transaction, having similar effects as a secured cash loan. Strictly speaking, however, a repo is distinct from a secured cash loan, owing to its specific mechanism and legal structure.

In economic terms, a repo transaction can be seen as a mere loan of cash secured by the provision of securities as collateral. If – as in the case of any cash loan – a cash amount of €100 is lent, the “borrower” will, on the maturity of the loan, repay the “lender” the initial cash amount lent (€100) plus the interest due on the cash. The corresponding interest rate is called the repo rate, referred to as “r”. The difference to an unsecured cash loan is that the “borrower” of cash in a repo transaction provides the “lender” with collateral, generally in the form of securities. At the end of the transaction, the collateral is returned to the “borrower”. The main function of this collateral is to protect the “lender” against default by the “borrower”. Since the securities act as collateral, they can

be sold on the market in the event of default in order to recover the cash amount lent. Nevertheless, for this protection to be effective, the market value of the collateral should be at least equal to the cash amount lent and the accrued interest throughout the life of the transaction. In particular, the possibility of adverse changes in the market value of the collateral has to be taken into account. This is why the value of the collateral provided at the start of the loan is not equal to the cash amount lent, but higher. After the deduction of a certain percentage (referred to as the “haircut”), the value of the collateral must be at least equal to the cash amount. In other words, a counterparty willing to borrow €100 in cash should provide, at the beginning of the loan, collateral in an amount of C , so that $C \times (1 - h) = 100$, where h is the haircut. Consequently, during the life of the repo, the collateral is valued daily at market conditions, and its value C_t , after the deduction of the haircut h , has to be equal to the combined value of the cash lent and the accrued interest i_t , i.e. $C_t \times (1 - h) = 100 + i_t$. If it is less, the transaction is under-collateralised and the “borrower” of the cash should pay a margin call (generally in the form of more collateral) to the “lender”. If it is higher, the transaction is over-collateralised and the “lender” of the cash should pay a margin call to the “borrower” (usually by returning part of the collateral).

However, viewed from another angle, i.e. the legal one, a repo is distinct from a secured “loan” of cash on account of the legal set-up (sale and repurchase agreement) in which it is conducted. The “borrower”¹ of the cash (securities provider) is referred to as the seller, while the “lender” of the cash (securities taker) is the buyer. On the seller’s side, the transaction is a repo, i.e. a sale and repurchase of securities. Conversely, on the buyer’s side, the transaction is a reverse repo, i.e. a purchase and resale of securities.

Although a repo has some characteristics of both outright transactions and loans, it is a specific instrument. First, all the conditions of a repo are agreed in advance, namely the price of the initial sale of the securities (i.e. the market price on the starting date), the repo rate, the haircut, and the date and price of the repurchase of the securities (that price is the initial selling price). In addition, a repo is distinct from a loan owing to the full transfer of title to the securities from the seller to the buyer, who can thus re-use the securities in other transactions without any legal restrictions. However, as repos are temporary transactions, the seller remains exposed to the price fluctuations of the securities provided as collateral during the life of the transaction. Similarly, in most repo transactions, any payment flows or economic rights attached to the securities that come into effect during the life of the repo are also

transferred back to the seller. Box I explains in more detail the differences between a repo, sometimes called a “classic” repo, and other securities financing transactions that produce similar economic effects and are considered alternatives.

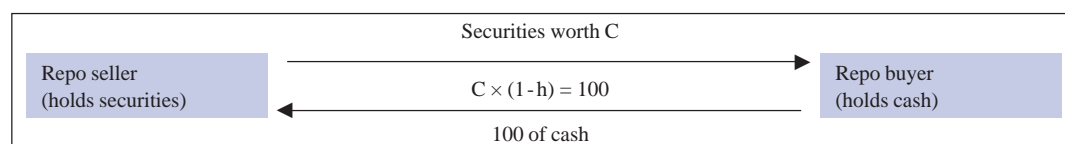
Another peculiarity of the repo technique is its specific treatment of risks, since the use of repos can be regarded as a technique for the transfer and mitigation of risk. Basically, the lender of cash in an unsecured transaction is exposed to the credit risk of the borrower. Conversely, the buyer (“lender” of the cash) in a repo mitigates its exposure to its counterparty by receiving collateral. The mitigation process comes into effect, through the use of collateral, only when the borrower of the cash defaults (the collateral is a “second line of defence”). However, the realisation of the collateral will provide the expected results only if the risks attached to the repo and the collateral are properly managed.

The risks attached to repo transactions per se are legal and operational. The legal risks are managed by ensuring that the repo trade is conducted on the basis of appropriate legal documentation, generally a master agreement that should be enforceable under the law

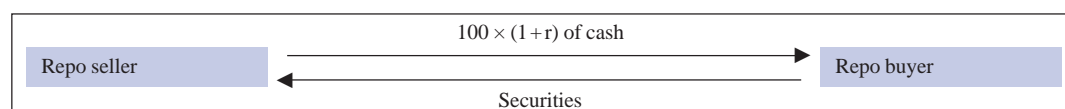
¹ For the sake of simplicity, the terms “lender” and “borrower” are used in connection with repo transactions in some parts of the article, although – in a legal sense – the terms “seller” and “buyer” should be used.

Chart I Mechanics of a repo transaction

Opening leg of the repo: sale of securities



Closing leg of the repo: repurchase of securities and payment of the repo rate



Note: C is the market value of the securities on the opening day, while h is the haircut and r is the repo rate.

Box I

Comparison between “classic” repo and other types of securities financing transactions

Sell and buy-back transactions

Sell and buy-back transactions involve a combination of a spot sale and a forward repurchase of securities (i.e. a repurchase at a future date at a price agreed in advance). The main differences to repos are the following:

- Legal documentation: traditionally, sell and buy-back transactions were conducted without any specific legal documentation, but this is changing as a number of master agreements now include an annex on sell and buy-back transactions.
- Margining: when sell and buy-back transactions are undocumented, there is no initial margining and daily marking to market, which makes these transactions more risky.
- Pricing and remuneration process: the repo “rate” is reflected in the difference between the forward and the spot price of the security. Differences in the treatment of coupons may also occur.

Sell and buy-back transactions initially developed in markets where there was no secure legal framework in place for repos, or where the settlement and IT systems of counterparties were not equipped to deal with repos. Although the use of repos has gradually gained ground, sell and buy-back transactions remain important for historical reasons in some national markets (e.g. in Spain and Italy).

Securities lending transactions

Securities lending transactions are trades where a security is legally lent (and not sold) in exchange for cash or other securities as collateral. These transactions are generally securities-driven. The main difference to a repo is that the legal ownership of the security is not transferred. There are also a number of other technical differences to repos:

- Remuneration process: the remuneration is based on a fee (not an interest rate), expressed as percentage of the market value of the lent securities. This may seem simpler than the use of repos for counterparties that do not closely monitor the level of short-term interest rates.
- Collateral: not only cash, but also securities can be used as collateral in securities lending transactions. In the case of high demand for borrowing specific securities, this allows counterparties lending them to lock in a profit, without having to reinvest the cash as in the case of repos.

Traditionally, securities lending involves mainly equities, while repos are used mainly for bonds.

governing the transaction. Such master agreements, which are examined in more detail in Sub-section 3.2, provide a standard contract for all repo trades (including haircuts, marking to market, etc.) between two counterparties and ensure that the financial assets provided as collateral can be liquidated easily and promptly in the event of default. Operational risks relate

mainly to the risk of loss resulting from inadequate or failed internal processes, people and systems. This risk is particularly relevant for repos, because of the heavy back-office involvement (i.e. daily marking to market, margining, etc.), and is managed by ensuring that the appropriate procedures are documented and implemented.

The risks that are specific to the collateral are the market, credit and liquidity risks. Market risk is linked to the level of volatility of the securities, which is most relevant between the moment the counterparty defaults and the moment the collateral can be sold. The credit risk is that of the issuer of the security. The liquidity risk reflects, in the event of default, the ease with which the collateral can be realised, and the impact the sale of the collateral may have on the market price. Market, credit and liquidity risks are managed by the haircut (which depends on the type of collateral), the daily valuation and the margining of the collateral. The haircut can also depend on the credit risk of the counterparty and on the maturity of the repo operation in question.

What are repos needed for?

A repo is a money market instrument, i.e. a transaction with a maturity between overnight and one year, together with unsecured interbank lending, short-term securities and short-term derivatives. The vast majority of the assets used as collateral in repo transactions are debt securities, but also equities, although the peculiar features of equities (i.e. corporate actions, such as voting rights or mergers) complicate the operational management of such repos.

A key distinguishing feature of repos is that they can be used either to obtain cash or to obtain securities. Therefore, the repo market can be seen as comprising two complementary market segments, a cash-driven segment and a securities-driven segment, in which a diversified range of market participants operates.

In the cash-driven segment, transactions are triggered by the willingness of a counterparty to borrow or lend cash, with securities serving as collateral. In such cases, the repo rate is close to the interbank rate, typically slightly below it, to reflect the repo transaction's status of "secured lending". As cash is the desired asset, the characteristics

of the securities given in exchange are of secondary importance, and transactions are generally conducted against "general collateral" (GC). In GC repo trades, all securities that are part of a basket of collateral defined by type and credit quality can be given as collateral. Examples of GC baskets are all bonds issued by euro area governments, or all corporate bonds included in a specific bond index.

The motivations of the cash provider (securities taker) in the cash-driven repo segment come from the mitigation of the counterparty risk of the "borrower". This latter risk is replaced by risks attached to the collateral, which are generally lower, depending on the type and management of the collateral. This risk transfer is reflected in the treatment of regulatory capital in repo transactions, where, for the calculation of the capital requirements, the counterparty risk weight is replaced by the collateral risk weight.² Provided that the collateral fulfils certain criteria, this substitution allows for a more favourable treatment of regulatory capital in repos than in unsecured lending transactions. In return, the repo rate earned on the cash lent is generally lower than the unsecured rate, as the credit risk component has been reduced. On the other side of the trade, the cash taker (securities provider) can borrow cash at generally better rates than in the case of unsecured borrowing, or can fund a long position in securities while retaining the market exposure on the securities. Repos also allow market participants which cannot obtain unsecured interbank funding because they do not have access to the interbank market, or because they have an inadequate credit standing, or because their counterparties have reached the limits of their unsecured credit exposure, to raise cash against collateral.

² This holds true for transactions recorded in the banking book (i.e. non-trading). For transactions recorded in the trading book (comprising positions which are held for trading purposes, as defined in the Directive on the capital adequacy of investments firms and credit institutions (93/6/EEC)), banks can choose either to have internal models recognised by supervisory authorities, or to adopt the "building block" approach, which covers specific and general market risk as well as counterparty risk.

In the securities-driven segment, transactions are triggered by the willingness of a counterparty to borrow or lend a specific security, with cash acting as collateral. This segment is mostly, although not exclusively, composed of specific securities that are in high demand. As these are especially sought after, their repo rate is substantially lower than the GC repo rate and the interbank rate, and these securities are said to be “specials”. The feature of being “specials” is not a permanent characteristic of securities, but only temporary.

The motivations of the securities borrower (cash provider) in the securities-driven segment are related to the willingness to acquire a specific security, for example, to cover a short position in this security, to cover a settlement failure, or for delivery on a futures contract settlement. On the other side of the trade, the securities provider (cash

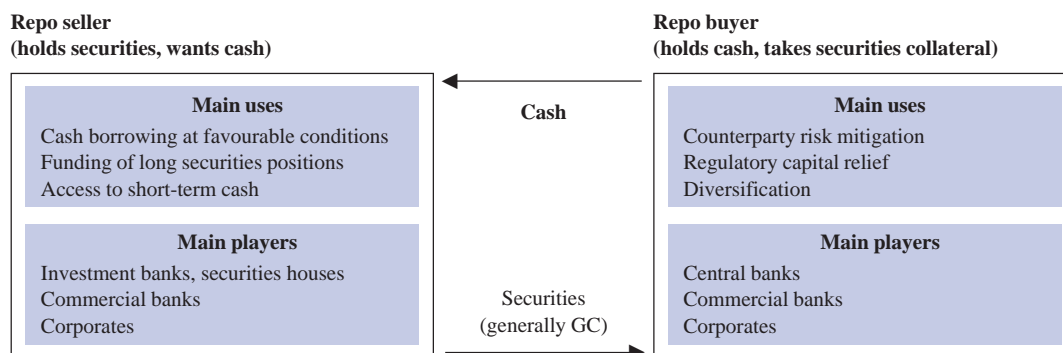
taker) can either fund its long securities position or “lend” its securities in repo transactions and reinvest the cash obtained at a higher rate (e.g. in the unsecured interbank market or at GC repo rates) in order to earn incremental income. Lending “on special” securities is thus a technique for the optimisation of securities portfolios.

Needless to say, a sizeable number of market participants are engaged in both segments, especially intermediaries, market makers and other counterparties conducting both repos and reverse repos. Some act as securities takers, using GC repos, and try, in turn, to use some of the GC securities as “specials” in repos. Market makers also try to exploit arbitrage opportunities created by price misalignments between repo and other markets, e.g. unusual spreads between repos and deposits, or between repos and derivatives. Repos can also be used to

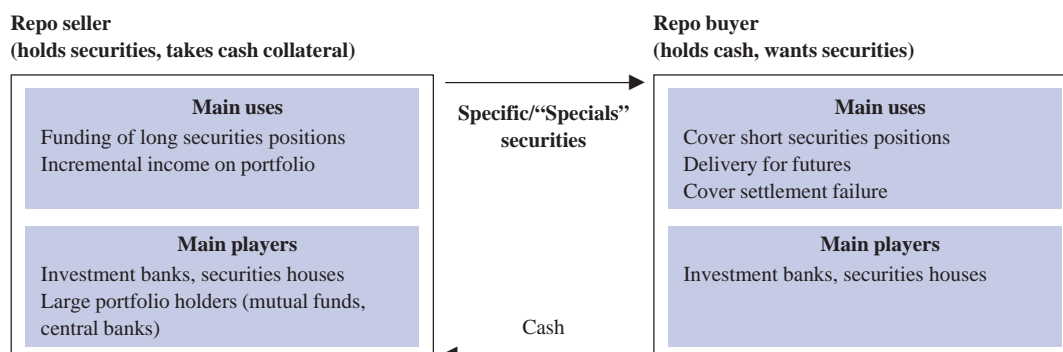
Chart 2

Main uses of and players in the repo market

Cash-driven segment:



Securities-driven segment:



arbitrage in basis trades. This involves a misalignment between the spot price of an asset and its forward prices (e.g. on the futures markets).

Overall, repos are a liquidity management and securities financing tool, which acts as a bridge between the money and securities markets, however this underplays its role. One of its crucial functions is to act as a catalyst for liquidity in other markets, and vice versa, enabling long and short securities positions to be financed and covered, respectively, through repos and further

encouraging market participants to trade actively in the securities and derivatives markets. In turn, the creation of futures contracts has generally led to an increase in turnover on the repo markets. In addition, use of repos contributes to enhancing the efficiency of pricing mechanisms in different markets, by allowing arbitrage. Finally, repos can contribute to the smooth functioning of the settlement system infrastructure, as it allows specific securities to be borrowed to avoid settlement failures (i.e. failures to meet commitments to deliver specific securities at a given time).

2 Development of the repo market in the euro area

This section gives a quantitative description of the repo market and its latest developments. Most of the figures and some of the findings presented in this section have been extracted from the ESCB's annual money market survey and from the semi-annual repo market survey of the European Repo Council (ERC).³ The ESCB survey is a flow analysis (turnover), while the ERC survey is a stock analysis (outstanding). The 2002 edition of the ESCB survey will be published shortly in a report entitled "The euro money market" (available on the ECB's website under "Publications", www.ecb.int).

Increasing size of the market since the launch of the euro

The euro area repo market has witnessed a significant increase in size in recent years. According to the ESCB's annual money market survey, which looks at data for the second quarter of each year, this market grew by 20 % between 1998 and 1999, by 24% between 1999 and 2000 and by nearly 45% between 2000 and 2001. This trend is still prevalent, as evidenced by the ERC's European repo market survey, with activity increasing by 13% between June and December 2001. In the meantime, other

segments of the money market (unsecured deposit and foreign exchange swaps) have seen an only limited increase in activity or even a slight decrease in some cases (see Chart 3). The total share of the repo market, as compared with overall cash money market activity, is currently estimated at between 35% and 40%, which is similar to the share of the deposit market.⁴

However, notwithstanding the strong growth in the euro area repo market, its size remains smaller than that of the US repo market. The amounts outstanding of repo and reverse repo reported by the respondents to the ERC survey stood at €2.3 trillion on 12 December 2001. By comparison, the amounts outstanding of repo and reverse repo reported by US government securities dealers to the Federal Reserve Bank of New York amounted to USD 3.5 trillion on the

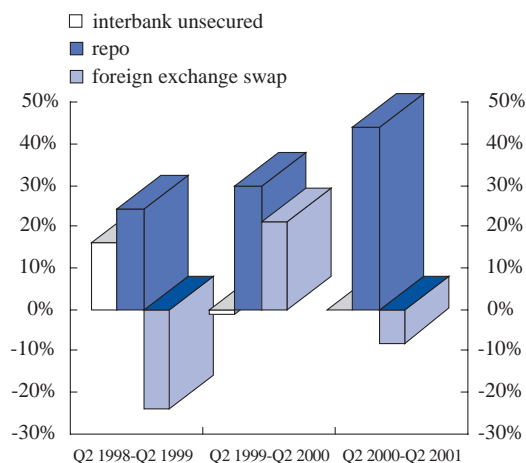
³ The ERC is a body sponsored by the International Securities Market Association (ISMA) in co-operation with ACI – The Financial Markets Association. Within the scope of the survey, a sample of 66 banks in Europe were asked for the value of their repo contracts outstanding at close of business on 12 December 2001. Although the euro was the dominant currency of denomination (representing 77% of reported amounts), the survey also included other currencies.

⁴ This figure, as well as the figures provided in Chart 3, should be viewed with some caution, as some of the banks participating in the ESCB survey did not always report their activity for each segment of the cash market.

Chart 3

Repo turnover relative to that of other money market instruments in the euro area

(Year-on-year changes in turnover)



Source: ESCB's annual money market surveys.

same date. This relatively high activity in the US repo market, as compared with that in the euro area repo market, is mainly due to a higher use of repos versus unsecured cash. As repo rates are far below deposit rates in the United States, funding via repos is more attractive. This situation is less pronounced in the euro area (see Chart 4). The average spread for the three-month maturity between the interbank rate and the GC repo rate in the United States was 21 basis points between June 2001 and June 2002, compared with 9 basis points in the euro area. In addition, the repo post-trade infrastructure, a crucial element of the repo cycle, is more efficient in the United States, where it is operated by a few entities, than in the euro area, where the infrastructure still remains fragmented (see Section 3).

The bulk of the repo transactions in the euro area are conducted in short-term maturities, with maturities ranging from overnight to up to three months accounting for slightly more than 95% of all repo transactions. The overnight maturity represents around 20% of all repo trades, well below the corresponding share of unsecured trades (around 65%)

owing to the aforementioned heavy operational and settlement burden, as well as credit risk considerations.

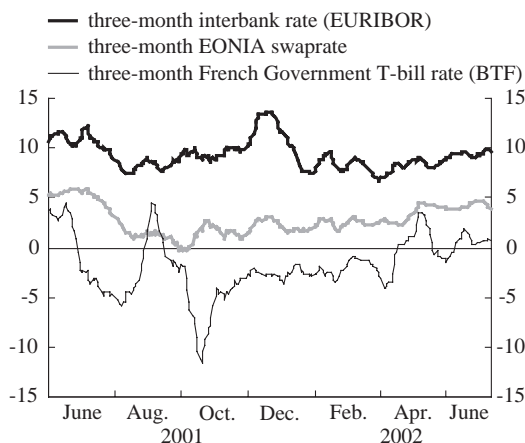
The liquidity and efficiency of the repo market is considered by the vast majority of market participants to be satisfactory, with the standard size of transactions ranging from €50 to €100 million. However, larger transaction sizes up to €1 billion are not regarded as problematic. Nevertheless, such amounts are usually, but not always, split up into several smaller transactions after the trade, in order to try to reduce the impact of a potential settlement failure.

The reasons behind the significant increase in the size and depth of the euro area repo market are mainly related to the need to reduce regulatory capital requirements, in response to European regulations on capital requirements. In addition, the repo market has benefited from the widespread tendency in the financial industry to limit the credit risk exposure, as repos are now considered more attractive as a means of lending money for longer periods of time.

Chart 4

Repo rates relative to other money market rates

(Spread against the three-month repo rate, in basis points, two-week moving average)



Sources: ECB, Reuters and Bloomberg.

Changes in the structure of the market

Since the launch of the euro, the repo market has evolved into a more mature market, not only in terms of size, but also in terms of its structure.

The use of repos to obtain funding has been extended from regular money market participants and bank treasurers to other participants in financial markets. Fund managers, corporations and even insurance companies have optimised the management of their portfolios to enhance their cash-holding activities. In addition, small and medium-sized banks also seem to be using the repo market more actively. The use of repos by a wide range of participants highlights its growing status as a market open to non-financial participants, whereas the unsecured interbank market can only be accessed by credit institutions.

Notwithstanding that 90% of all repo transactions are still conducted on the basis of sovereign bonds, a diversification in the type of repo collateral has taken place, thus attracting a wider range of market participants. Repos against mortgage-backed bonds (e.g. Pfandbriefe), corporate bonds and even equities are no longer unusual, although – according to the ERC survey – their share barely exceeds 5% of the total market. Further increases in the range of collateral accepted in repos would be beneficial for the future development of the repo market, as the main determinant of its size is the volume of the underlying collateral that can be used. In that respect, the development of repos involving non-sovereign assets currently appears to be slow in the euro area owing to the tightness of the spreads of these repos compared with GC repos. Thus, market participants do not have sufficient incentives to accept them.

In addition to the diversification in the types of collateral, there is also an overall trend towards the acceptance of a wider basket of sovereign bonds in GC repos, with a majority of the market participants accepting most

euro area government bonds. This has recently been reinforced by the EUREPO index, the launch of which was announced jointly by the ERC, the European Banking Federation (EBF), the European Savings Banks Group (ESBG) and the European Association of Co-operative Banks (EACB) in March 2002. The EUREPO is the rate at which any one prime bank offers funds in euro to another prime bank, with the former receiving EUREPO general collateral from the latter in exchange. For a given standard maturity, the EUREPO index is the average of the rates provided by EUREPO Panel banks. The list of EUREPO general collateral includes all government bonds and bills denominated in euro and issued, or guaranteed, by any of the euro area governments. Therefore, the use of the EUREPO index is likely to lead, progressively, to a harmonisation of the repo rates for government securities in different euro area countries.

The increase in European repo volumes in recent years has highlighted the burden of managing operational and risk aspects of repos, and has accelerated the development of systems and services to alleviate the heavy administrative and back-office burden involved. As a result, outsourcing schemes have developed (e.g. tri-party repos), together with the use of collateral management systems and electronic trading platforms (see Box 2).

First, via tri-party repos, market participants can outsource the bulk of post-trade treatment of repos to an agent. In a tri-party repo transaction, the two parties agree to exchange cash against collateral via an independent agent. The collateral can be any security (even any financial instrument) defined as eligible by both counterparties, and listed in a basket of securities enumerated in the applicable legal documentation. The role of the agent, often carried out by a prominent central securities depository or a bank, includes the processing of the transaction in terms of clearing, settlement and the management of the collateral throughout the duration of the operation. Tri-party repos

Box 2

Electronic repo trading

Traditionally, repos are traded directly between two counterparties, or via brokers. However, repo transactions through electronic trading platforms are increasing. According to the ERC survey, 15% of the repo business on 12 December 2001 was conducted electronically, compared with 8% in June 2001, while the share of transactions directly negotiated with other counterparties remained broadly unchanged at around 45%. In the meantime, the share of transactions negotiated via traditional brokers has declined from 46% to 40%. Electronic trading platforms provide several advantages, such as market transparency in terms of prices and a reduction of back-office costs, as the clearing process can be refined. Some platforms provide their members with a connection to a central clearing counterparty (CCP) which ensures anonymity and offers the benefits of netting. Netting enables the parties to repo trades to net their repos and reverse repos and to transfer only the net amount of cash and securities in payment and settlement systems, thus reducing the number of settlements.¹ Netting through central counterparties is even more efficient as the CCP interposes itself between the counterparties and becomes a party to all the transactions, instead of only the initial trading counterparties (this is known as “novation”), thus helping participants simplify their risk management through the substitution of one counterparty for many. The main advantage of an electronic trading platform using a CCP is also the possibility for a full integration of trading, clearing and settlement, as well as the availability of risk management facilities (margin, use of a collateral pool, etc.). In addition, some platforms offer straight-through processing (STP) and are built with an open architecture, providing a simple interface between the system and internal bank systems. Pre-defined standard repos (e.g. GC repos), as well as tailor-made transactions, are generally available. Lastly, platforms might offer some collateral management facilities, such as the possibility of substituting collateral throughout the duration of the operation. At present, the main electronic platforms in the euro repo market are BrokerTec, the Repo Trading Facility of the MTS group and Eurex Repo.

¹ Of course, neither netting nor CCPs are restricted to electronically traded repos.

offer various advantages. They enable market participants to raise cash using types of collateral other than government bonds at usually better rates than the unsecured cash market. Furthermore, the two counterparties, by outsourcing the processing of the operation (settlement and custody) to an agent, simplify their tasks and circumvent the difficulties related to the fragmentation of the post-trade infrastructure in the euro area (see Section 3). The main drawback of this product is its cost, still perceived as too high by market participants, which could explain its relatively modest market share in Europe, approximately 6%, according to the ERC survey.

Second, collateral management systems offer counterparties, which are unwilling to outsource, a convenient way of handling the operational treatment of repos. They were developed in response to a greater awareness

of euro area market participants' need to have sound and harmonised risk management practices. Indeed, repos require efficient collateral management in terms of haircuts, daily marking to market, margin calls, collateral substitution, possible position limits and possible netting facilities. Collateral management systems offer to handle these facilities and also allow the resulting operational risk to be reduced through automation. However, the main obstacles to their further development remain the high investment and implementation costs involved, especially in the case of small or occasional repo market participants.

Finally, similar to developments in other financial markets, electronic trading platforms are gaining ground in the repo market, owing to the different services they offer, as explained in more detail in Box 2.

3 Further integration of repo markets across the euro area

The interests of the ECB in an integrated and efficient repo market

The repo technique and market are traditionally important to central banks, as they often use this instrument in their monetary policy operations. Several reports published by Committees of the G10 central banks (available on www.bis.org) support this view. The ECB and the Eurosystem at large have a special interest in repos as they have been one of the main instruments used for the regular refinancing operations from the start of Stage Three of Economic and Monetary Union (EMU).

The Eurosystem is probably the largest single user of collateral in the euro area, through its monetary policy and intraday credit operations. Eurosystem monetary policy operations (in particular the two-week main refinancing operations) are not conducted solely via repos, but also via collateralised loans (e.g. pledge operations), depending on the operational set-up of the national central bank involved. In addition to liquidity-providing monetary policy operations, any intraday credit necessary to provide liquidity for a smooth settlement of payments in TARGET also needs to be fully collateralised. All in all, the total outstanding amount of collateral used in Eurosystem operations in 2001 amounted to, on average, €560 billion, €230 billion of which was related to monetary policy operations and €330 billion was used for intraday credit needs in TARGET. The Eurosystem's collateralised operations are conducted against a wide range of eligible collateral, ranging from sovereign bonds of euro area governments to mortgage-backed and corporate bonds. The type of collateral does not influence the rate of the credit, but different haircuts, adjusted to the risk profile of the collateral, apply. Eurosystem operations are one example of cash-driven transactions, in which the collateral is more or less neutral, provided that it fulfils the eligibility criteria. As the Eurosystem absorbs large amounts of

collateral from the private repo market, the ECB has a natural interest in its liquidity, efficiency and integration, thus enabling Eurosystem counterparties to easily acquire eligible securities in order to participate in the operations.

Another genuine interest of the ECB lies in the structure and functioning of the euro money market as a whole, of which the repo market is a component. The money market is where the ECB implements its monetary policy, thereby constituting the first link to the monetary policy transmission channel. In addition, the ECB provides the overall level of liquidity necessary in the money market, and is thus interested in the even distribution of this liquidity within the money market. Indeed, it is essential that money can flow smoothly from one money market segment to another, in order to reduce the volatility of short-term interest rates. Therefore, a more integrated repo market, indifferent to the location of securities and counterparties, would enable repos to become a genuine liquidity management instrument, on an equal footing with the unsecured interbank market.

But beyond the user perspective, the ECB has an interest in the repo market as a guardian of financial stability. Indeed, the ability of market participants to borrow securities in the repo market is a more efficient way of reducing the risk of securities settlement failure than buying securities outright on the market. In addition, repo markets, as collateralised markets, have merits for the reduction of systemic risk, by facilitating the continued supply of credit to borrowers who run into temporary difficulties, thus making the financial system more resilient to shocks. However, the use of collateral can also alter the market dynamics in certain circumstances, in particular through abrupt adjustments of collateral standards (e.g. haircuts) in times of stress.

Another keen interest of the ECB lies in the integration of the repo market. This is due to

its commitment towards fostering the development and integration of the euro area financial system, and to ensuring a level playing-field and the equal treatment of its counterparties across the euro area. This is of particular relevance in the case of the repo market, which forms a link between several markets, based on cash or securities. The fragmentation of the repo market could hamper the functioning of other important markets, such as the bond or futures markets. It is therefore essential to ensure that repo participants in the whole euro area money market can deal across the whole spectrum of both euro area counterparties and euro area securities without disproportionate differences in cost, efficiency or complexity.

Finally, more general considerations plead for the integration of the repo markets. An integrated repo market is crucial for promoting an efficient allocation of resources in the euro area, including the efficient use of capital by banks. It would also improve the completeness of markets, by extending the range of financing and investment opportunities available. Further integration would also favour a more liquid repo market, the benefits of which are clear in terms of lower costs of raising funds for borrowers, and more efficient pricing within and across market segments.

Initiatives towards integration since 1999

The launch of the euro accelerated progress towards the integration of all euro area financial markets. This is also relevant for the euro area repo market, where important work towards integration has been conducted by various entities.

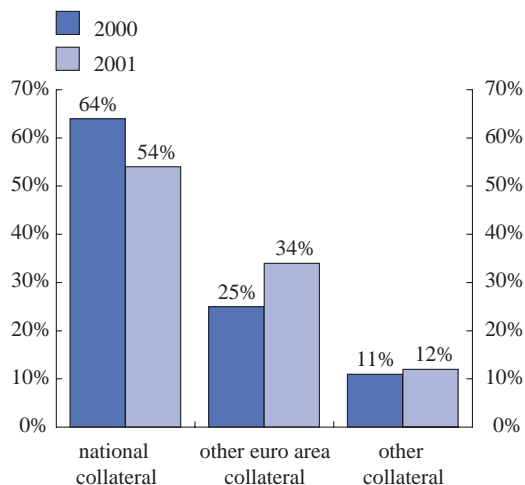
Market-based associations and participants have launched several initiatives designed to improve the integration of the repo market. The first initiatives, following the launch of the euro, were directed towards the harmonisation of market and risk management practices (conventions, marking to market, etc.). They also strove to remedy,

at an early stage, the lack of standardised and harmonised legal documentation in the repo market. Traditionally, domestic transactions were conducted on the basis of various local master agreements (if any), while the PSA/ISMA contract (governed by English law) was used almost exclusively in standard cross-border transactions. The latter was updated in 2000 to accommodate a wider range of market environments (such as those in Italy and Spain). In parallel, the creation in 2000 of the European Master Agreement (EMA) was aimed at reducing recourse to differing national agreements, as the EMA is, by design, a multi-jurisdictional, multi-lingual and multi-product agreement. By leaving it entirely to the parties to agree on both the governing law and the competent courts, the EMA is convenient to use between parties located in both the same and different jurisdictions. It could gradually develop into a standard for the domestic euro area repo market, although its use remains modest so far. The ECB officially welcomed the introduction of the EMA and has decided to use it for the management of its foreign exchange reserves and own funds.

In addition to other initiatives, the ERC, in conjunction with the EBF, has contributed to the creation of a benchmark repo rate curve, based on the EUREPO index, which helps to increase market transparency, and facilitates the convergence of national repo markets, given the wide GC basket. Other actions of the ERC were the launch of the semi-annual European repo survey, together with its ongoing role as a forum for discussions on aspects related to the European repo market.

Over the past few years, legislators have also acted to enhance and ensure the legal reliability of collateralisation techniques and practices, including the validity and effectiveness of the transfer of title arrangements, not least in the case of insolvency. A broad range of these aspects have been addressed by the European Council (EC) Directive on financial collateral arrangements, which entered into force in June 2002 and is to be translated into national

Chart 5
Structure of collateral in the euro area repo market



Source: ESCB annual money market surveys.
 Note: The figures include trades settled through intermediaries (custodians, tri-party).

law by the end of 2003. The ECB highly welcomed the proposal for this directive in its official opinion, dated 13 June 2001,⁵ as a significant and important effort to promote the efficient and safe use, at both the domestic and the cross-border level, of financial collateral over and beyond what had already been achieved with the Settlement Finality Directive of 1998.

In addition, the ECB itself, through the organisation of meetings with market participants and infrastructure operators and through its publications,⁶ is working towards increasing the awareness of the general public and professionals of the necessity to increase integration in the euro area financial markets.

Owing to this collection of initiatives in favour of market integration, indicators have recently pointed towards a heightened level of cross-border activity since the launch of the euro. For instance, counterparties have increased their use, in relative terms, of collateral from other euro area countries and reduced their dependence on national collateral (see Chart 5). Nonetheless, the internationalisation and integration of the repo markets are lagging behind when

compared with the securities-free markets. This is illustrated by the fact that trades between counterparties of the same euro area country still account for 40% of secured lending, but for only 30% of unsecured lending. This indicates that there remain some barriers to further integration of the repo market, thus continuing to prevent market participants to trade freely across the range of counterparties available in the euro area.

Remaining obstacles to further integration

The remaining obstacles to integration lie in the diversity of the types of securities in the euro area, in the fragmentation of the infrastructure, in remaining legal and fiscal issues and in the diversity of market practices. The task of removing these obstacles lies in the hands of a myriad of entities, and depends on the type of obstacle. These entities are mainly the market participants themselves, either directly or through their representative associations, legislators, regulators, central banks and infrastructure providers (e.g. clearing and settlement systems).

First, the way market participants perceive the different national characteristics of securities accepted as collateral in repo transactions constitutes one aspect of the fragmentation of the euro area repo market. For instance, given the different credit ratings of euro area governments, there might be differences in the terms of repo transactions (i.e. repo rate, haircut) with government securities as collateral, depending on the country. The same applies to the differences in the liquidity of government securities. Market integration would benefit from the extension of a euro GC approach, enabling participants to put securities with similar, although not the same, characteristics in the same basket. Eurosystem collateralised operations are an example of this approach.

⁵ Official Journal of the European Communities C 196 of 12 July 2001, p. 10.

⁶ See, for instance, ECB Occasional Paper No. 1, entitled "The impact of the euro on money and bond markets".

Another notable aspect of national characteristics of securities is their tax treatment (in particular that of coupons of government bonds), which would benefit from being better harmonised across the euro area.

Second, the organisation of the post-trade infrastructure in the euro area is a sizeable obstacle to a further integration of the repo market and its use as a liquidity management tool. Current cross-border arrangements are fragmented and complex, imposing costs, risks and inefficiencies on repo market participants. A simple example is that a counterparty willing to engage in a repo to obtain €100 million in cash against a basket of GC securities, which settle in five different settlement systems, might have to maintain five different settlement accounts (or go through one or several intermediaries, or links), in systems that have diverse operating hours, settlement deadlines, etc. The further consolidation of security settlement systems (SSSs) at the European level is a recurrent demand of euro area repo market participants. In this respect, competition forces unleashed by the euro alone have not so far been strong enough to trigger any widespread consolidation. Nineteen central securities depositories (CSDs) and two international securities depositories (ICSDs) were operating in the euro area in mid-2002. If widespread consolidation is seen as too slow, at least a cross-system inter-operability of clearing and settlement infrastructures should be pursued, together with better harmonisation and standardisation of netting, operating and communication practices and procedures between systems. In parallel, all remaining access barriers should be removed.

In addition, the timing of settlement cycles is another area where progress in standardisation would be most welcome. The extension of an operationally efficient same-day settlement to all trades in the euro area could, in the medium term, greatly enhance the use of repos for managing very short-term liquidity. In this context, the European

System of Central Banks (i.e. the ECB and the 15 national central banks of the EU Member States) and the Committee of European Securities Regulators (CESR) are currently defining standards in the field of securities clearing and settlement. This work is aimed at increasing the safety, efficiency and level of harmonisation amongst the service providers. The ECB is also involved in other initiatives, be it in co-operation with the European Commission (through the Commission Working Group on Clearing and Settlement and active participation in the preparation of consultations and draft directives) or with market participants and service providers (through the creation of market contact groups created at the start of the single monetary policy as discussion forums).

Finally, in the field of market practices, sound risk management practices should be further pursued. As has been the case with undocumented sell and buy-back transactions in some euro area countries, improper risk management practices can be a reason for the lack of openness of national markets. Systematic documentation of repos, daily marking to market and margining should become the rule, not only to achieve better standardisation, but also to increase the resilience of repo markets in times of stress. In addition to the vigilance of the market participants themselves, the regulatory framework for banks' repo transactions also plays a key role. The new Basel Capital Accord (what is known as "Basel II") will revise the treatment of these transactions by introducing a more risk-sensitive approach. Although the final proposals are still under discussion, it is anticipated that the new framework will provide a range of options for the regulatory treatment of repos, taking into account the role of disclosure to markets as well as qualitative factors, such as the risk management systems of individual banks. Therefore, the alignment of supervisory standards with market practices will support the sound functioning of the repo market.

4 Conclusions

The advantages of repos in terms of risk mitigation and liquidity management are widely acknowledged by market participants and regulators. As a result, the repo market is developing fast in the euro area, and has, over time, attracted a broader range of market participants which trade diversified types of collateral. The repo market has also proved to provide important links inside the financial markets, as it promotes and facilitates the liquidity and functioning of other markets. However, notwithstanding the considerable progress that has been made in

this area, the integration of the national repo markets into one unified market is still lagging behind. Market participants will only be able to reap the full benefits provided by repos when there is a genuine euro area market, and not a myriad of national repo markets within the euro area. In this context, the ECB, as the central bank of the euro, has a certain responsibility to create awareness and co-ordinate efforts wherever necessary, and it therefore stands ready to support initiatives identified as marking progress towards market integration.