
**TECHNICAL COMMITTEE OF
THE INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS (IOSCO)
COMMITTEE ON PAYMENT AND SETTLEMENT SYSTEMS (CPSS)**

**SECURITIES LENDING TRANSACTIONS:
MARKET DEVELOPMENT AND IMPLICATIONS**

July 1999

Securities lending transactions: market development and implications, report prepared by the Technical Committee of the International Organization of Securities Commissions and the Committee on Payment and Settlement Systems of the central banks of Group of Ten countries.

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Foreword

This report has been produced by the Technical Committee of the International Organization of Securities Commissions (IOSCO) and the Committee on Payment and Settlement Systems of the central banks of the Group of Ten countries (CPSS). It is the second report jointly produced by the two committees. The first, *Disclosure framework for securities settlement systems*, was published in 1997.

The growth in securities lending transactions, such as securities loans and repurchase agreements, has been such in recent years that they now represent a substantial part of the daily settlement value in many settlement systems and play an important role in facilitating market liquidity. Past work by IOSCO and the CPSS has highlighted the expanding use of securities lending transactions and how these market transactions have increased the pressure on settlement agents to permit receipt and delivery of securities on the same day. However, none of these reports has provided a comprehensive survey and analysis of the use of securities lending transactions, the current dynamics of the market and the principal areas of risk. The two Committees therefore set up a Joint Working Group on Securities Lending to fill this gap. The Working Group was mandated to “develop a clearer understanding of the development of securities lending and its implications for securities regulators and central banks, in particular its implications for securities clearance and settlement systems”.

As a key part of the project, central banks and securities regulators in each jurisdiction conducted a survey amongst market participants of the size and structure of their lending activities, and the factors that they felt were driving the market’s growth. These market participants included broker-dealers, custodian banks, institutional lenders, banks, securities settlement systems, clearing houses, providers of market services and industry consultants. In total, the members of the working group interviewed more than 60 institutions in over a dozen countries worldwide. The Technical Committee of IOSCO and the CPSS express their thanks to the many firms, institutions and individuals who assisted with the survey or who provided other assistance in the preparation of this report.

It is expected that securities lending activity will continue to increase as an integral part of contemporary securities markets. The report provides an overview of the transaction structure, market development and risk issues of securities lending transactions, and discusses a number of implications for market participants, infrastructures providers and market authorities, in particular securities regulators and central banks.

Mr Tamagawa and his colleagues are to be congratulated on having completed this important study.

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Executive summary

Securities lending transactions have become, and are likely to remain, an important element of modern financial markets. This report, prepared by a joint working group (the “Working Group”) of the Technical Committee of IOSCO and the CPSS, presents an overview of securities lending markets and discusses the implications of securities lending activities for market participants, securities clearance and settlement systems, and securities regulators and central banks.

Section 1 of the report provides a general overview of securities lending markets. Securities lending involves the temporary exchange of securities, generally for cash or other securities of at least an equivalent value, with an obligation to redeliver a like quantity of the same securities on a future date. The report begins by distinguishing “securities-driven” from “cash-driven” securities lending transactions. Broadly, in “securities-driven” transactions, institutions seek to lend/borrow *specific* securities against collateral, while in “cash-driven” transactions, institutions seek to lend/borrow securities *as collateral* in cash financing arrangements. The report then distinguishes and describes the main transaction structures used to lend securities: securities loans, repurchase agreements (repos), and sell-buybacks. While the legal structure of the transactions differs, the economics are similar.

There follows a description of how securities lending has evolved to fill market needs. While securities lending is fairly new to most jurisdictions, there has been a rapid increase in these activities in recent years and globalisation of the market. Some information is provided about the size and growth of these markets. Section 1 concludes by highlighting some recent trends that are currently shaping securities lending markets.

Section 2 describes the participants in securities lending markets and the structure of typical transactions. Participants include securities borrowers and lenders, cash investors and borrowers, intermediaries, and providers of clearing and settlement services. This section describes the underlying motivations for borrowing and lending securities and describes a number of trading strategies that involve the borrowing of specific securities. It also discusses the role of intermediaries such as custodian banks, which lend securities on behalf of institutional investors whose portfolios they hold, and prime brokers, which provide clients with access to lendable securities, including leveraged institutions such as hedge funds. There are also intermediaries which provide automated trade matching, and confirmation services. The basic clearing and settlement of securities lending transactions is similar to the process for settlement of ordinary market transactions. However, entities such as central securities depositories (CSDs) and clearing houses have developed specific services for securities lending transactions, such as automated identification and tracking mechanisms, and central counterparty clearing facilities.

Section 3 discusses legal, regulatory, tax and accounting issues that arise in securities lending transactions, which vary significantly from market to market. In recent years, national authorities have made changes to these frameworks in order to facilitate the development of securities lending markets. Among other things, these changes have provided market participants with more certainty that the legal agreements used to govern securities lending activities will be enforceable. Regulatory or tax impediments to the development of securities lending markets in certain jurisdictions have progressively been removed, which has encouraged growth. There are, however, remaining regulatory impediments to market development, which are discussed.

Section 4 addresses the types and sources of risk present in securities lending, and the practices and procedures used by market participants to manage and reduce these risks. Because securities lending transactions are typically collateralised, counterparty credit risk is reduced and these are often considered to be relatively low-risk markets. Nonetheless, the types and sources of risk are similar to those encountered by participants in other market transactions. As such, the analyses of risks presented in the previous reports on *Delivery versus payment in securities settlement systems* (1992) and *Cross-border securities settlements* (1995) are applicable in the present context. In addition, market participants may be exposed to risks that are specific to securities lending. In particular, the relative operational complexity of securities lending transactions may expose market participants to legal,

operational and settlement risks. The report also notes that market participants may be subject to risks arising from changes in the market value of collateral securing the lending transaction, where a decline in the value of collateral results in an under-collateralisation of the transaction.

The Working Group's interviews with market participants suggest that market practices and procedures used to manage and reduce the risks associated with securities lending are broadly similar. Market participants typically conduct formal credit evaluations and impose counterparty credit limits vis-à-vis counterparties. Standard legal agreements are typically used to govern transactions, as are increasingly, standard master agreements. Collateral is used to minimise credit exposures. Operational risk is being addressed by automating as far as possible the processing of transactions. Yet it is clear that risk management practices vary across jurisdictions, and amongst participants within jurisdictions. In describing the risk management practices employed by market participants, the report intends to draw out these differences.

Finally, **Section 5** discusses the role of securities lending in the context of other financial markets, and the implications of securities lending for market participants, market infrastructure and market authorities. The report first concludes that while securities lending transactions have been important for some time in several national markets, their overall significance within the global financial system has increased notably in the last decade. Today, securities lending markets are a vital component of domestic and international financial markets, providing liquidity and greater flexibility to securities, cash and derivatives markets. The Working Group expects that securities lending activity will continue to increase and become an even more integral component of financial markets in the future.

The report suggests that as the scale and importance of securities lending continue to increase, *market participants* should continue to develop sound practices that identify and control risks, and ensure that these approaches keep pace with the market. In particular, market participants are encouraged to employ sound collateral management practices. This includes ensuring that appropriate collateral is received in exchange for loaned securities, that the value of all loaned securities and collateral is marked to market on a daily basis, and that firms provide for excess collateral to protect against adverse movements in market prices. The report also stresses the importance of undertaking a thorough credit review of all counterparties, of stress testing positions to assess the potential impact of extreme price movements, and of clarifying business relationships, such as principal and agent relationships and indemnification provisions, so that the associated risks are appropriately disclosed. Additionally, the report emphasises that market participants should ensure that appropriate systems are in place for managing and processing securities lending transactions. Participants should also become familiar with and implement the terms and conditions of documentation evidencing securities lending transactions, and consider the risk management challenges associated with cross-border transactions.

The Working Group notes that while securities lending has flourished within existing securities settlement systems, features unique to securities lending transactions have implications for the *market infrastructure*. In order to further promote liquid securities lending markets, the report suggests that market infrastructure providers consider automating trade processing functions, such as trade comparison, to reduce operational risks existent in manually intensive procedures, consider developing centralised facilities that provide for services such as central counterparty clearing, multilateral netting and tri-party lending and consider developing automated systems that identify and track securities lending transactions separately from ordinary market transactions, where such facilities have not been implemented already. To minimise settlement risk, market infrastructure organisations should continue to encourage the use of delivery versus payment (DVP) mechanisms and consider the introduction of delivery versus delivery (DVD) mechanisms in markets where securities lending is often collateralised by other securities. In the cross-border context, those responsible for market infrastructure should continue to develop the options available for more secure and efficient settlement such as linkages between CSDs, including international central securities depositories ("ICSDs"), and use of tri-party custodians. Market infrastructure organisations are also encouraged to continue their efforts to provide information (i.e. statistics) on the overall state of the securities lending market.

The final section concludes by emphasising that *securities regulators* and *central banks* share a common goal in encouraging sound practices in the securities lending markets, and should ensure that

their own regulatory approaches support these practices. The report notes that market authorities should have a sound understanding of how the regulatory environment in their jurisdiction shapes the markets for securities lending and should develop policies that support and encourage safe and efficient market practices. This includes taking steps to reduce any legal uncertainties in securities lending transactions, providing for clarity and comparability of accounting and capital treatment, and promoting market infrastructure improvements such as DVP or other relevant settlement mechanisms (such as DVD). Market authorities should also support efforts by market participants to improve market practices and risk management methods, while reducing the potential for market manipulation. Finally, as is the case with most financial activity conducted on a significant scale, market authorities should assess the potential for securities lending transactions to affect market stability or contribute to systemic risk.

The report has five annexes. A glossary is provided in Annex 1. Annex 2 is the questionnaire used in the market survey mentioned above. Annex 3 provides some information on the current size and features of securities lending markets in the respective Working Group members' jurisdictions. Annex 4 summarises the framework of securities lending markets, in particular legal, regulatory, tax and accounting aspects in the respective Working Group members' jurisdictions. Annex 5 captures features of securities settlement systems related to securities lending transactions.

1. Market overview

1.1 Introduction to securities lending markets

In today's capital markets, securities seldom lie idle. If not being bought and sold in outright market transactions, securities are frequently lent to parties wanting to borrow them, or used as collateral to raise short-term finance. These transactions include repurchase agreements (repos), securities loans and sell-buyback agreements. While they differ in detail, they nonetheless have many similarities.¹ This report treats them as a family of transactions, generically described as "securities lending". Securities lending has become a central part of securities market activity in recent years, to a point where the daily volume of securities transactions for financing purposes considerably exceeds that of outright purchase and sale transactions.

Securities lending involves the temporary exchange of securities, usually for other securities or cash of an equivalent value (or occasionally a mixture of cash and securities), with an obligation to redeliver a like quantity of the same securities at a future date. Most securities lending is structured to give the borrower legal title to the securities for the life of the transaction, even though, economically, the terms are more akin to a loan. The borrow fee is generally agreed in advance and the lender has contractual rights similar to beneficial ownership of the securities, with rights to receive the equivalent of all interest payments or dividends and to have equivalent securities returned. The importance of the transfer of legal title is twofold. First, it allows the borrower to deliver the securities onward, for example in another securities loan or to settle an outright trade. Second, it means that the lender usually receives value in exchange for the disposition of legal title (whether in cash or securities), which ensures that the loan is collateralised.

1.1.1 *Securities-driven and cash-driven markets*

While the securities lending markets can be broadly defined to include a range of transactions where there is a temporary transfer of securities, they actually comprise two, somewhat distinct markets: one that is "securities-driven" and one that is "cash-driven".

In the securities-driven market firms seek to gain temporary access to specific securities. This may be because they have failed to receive securities that they are due to make delivery on or because they have deliberately sold a security short and are using the loan to deliver against this position.² The securities borrower will usually give collateral to the lender. This may be in the form of other securities, cash or a bank letter of credit. Collateral mitigates the lender's exposure to credit risk on the borrower.

In the cash-driven market, firms post securities as collateral to obtain cash financing. The cash lender is not seeking specific securities and will generally allow the cash borrower to select within defined categories of "general collateral", for instance all domestic government securities issues. Market participants use these transactions to finance their portfolios at rates generally below the interbank short-term uncollateralised lending rate.

In both the cash-driven and the securities-driven markets, any margin is usually provided by the giver of collateral – in other words, the market value of collateral should exceed that of the cash or securities loaned. Thus, in the cash-driven market, margin gives a measure of protection against adverse movements in market prices to the cash lender and, in the securities-driven market, it protects the securities lender against non-delivery.

¹ See Section 1.2 for a description of the various structures and how they differ.

² Possible motivations for short selling include speculation that the price of a security will fall, or fall relative to the price of another security or index, arbitrage, hedging of another transaction or meeting a market-making obligation (see Section 2.1).

Traditionally, certain transaction structures have been associated with particular markets – for instance, many countries’ cash-driven securities lending markets are structured through repos, typically of government debt, whereas securities-driven markets are structured as securities loans, typically of equities. However, in most jurisdictions, the transaction structure can be used interchangeably within the cash-driven and securities-driven markets. That is, securities-driven transactions can also be structured as repos, with cash-driven transactions structured as securities loans.

The securities-driven market remains more highly intermediated than the cash-driven market and transactions are more customised. Intermediaries, such as custodian banks, dealers, third-party agents and occasionally finders, are often relied upon to make markets and negotiate and price deals. The cash-driven market is more commoditised with trading at market interest rates. Counterparties often deal on a direct basis with terms for transactions displayed on electronic screens.

Both securities and cash-driven securities lending markets are an increasingly vital component of domestic and international financial markets, providing liquidity and greater flexibility to securities, derivatives and financing markets. The securities-driven market has also contributed to more efficient and less risky securities settlement arrangements. The cash-driven markets are also especially useful to central banks, both for their own monetary policy operations and as a source of information on market interest rate expectations.

1.2 Transaction structures

Securities lending transactions are typically structured in one of three ways: as (1) securities loan transactions; as (2) repurchase agreements; or as (3) sell-buyback arrangements. While the legal structure of the transactions differs, the economics are similar, as there is a temporary exchange of securities, typically for cash or other collateral.

Securities loan transactions. In a typical securities loan transaction, the owner of securities lends securities to a borrower which becomes contractually obligated to redeliver a like quantity of the same security – see Figure 1. Securities borrowers are generally required to provide collateral to assure the performance of their redelivery obligation. Collateral may take the form of cash, other securities or a bank-issued letter of credit. It is standard industry practice for the lender of securities to receive initial margin, that is collateral in excess of the market value of the loaned securities. This acts as a buffer against an adverse change in the price of loaned securities relative to collateral in the event that the borrower defaults on its return obligation. The lender receives a fee that is negotiated at the time of the transaction. Loans can be made on an overnight, open (terminable on demand) or term basis.

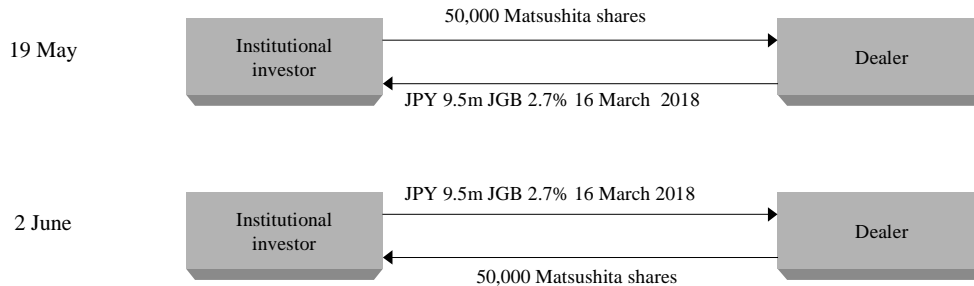
The securities lender typically does not retain legal title to the securities that are lent. The borrower obtains full title to the securities. The transaction would not be viable if the lender retained legal title to the securities it has lent, since the borrower may need legal title to the securities to transfer them to another party. Even if the securities borrower defaults on its redelivery obligation, the securities lender has no property interest in the original securities that could be asserted against any person to whom the securities borrower may have transferred them. The securities lender’s protection is its right to foreclose on the collateral.³

While the securities lender does not retain legal title to the securities that are delivered to the borrower, the lender does retain contractual rights similar to beneficial ownership, as discussed in Section 1.1 above. Meanwhile, the securities borrower is entitled to receive all economic rights of beneficial ownership of the non-cash collateral to the extent it would be so entitled if the collateral had not been transferred to the lender.

³ It is important to note that, in certain markets, the rights obtained by the lender with respect to collateral may be less than full ownership.

Example: Securities loan transaction (borrow vs. pledge of securities)

Figure 1



Dealer wants to borrow 50,000 shares in Matsushita Electric Industrial and will pledge Japanese government bonds (2.7 % 16 March 2018). Dealer is willing to pay a borrow fee of 30 basis points for two weeks, 19 May 1999 to 2 June 1999. Both the borrow and pledge will settle versus identical cash amounts with JPY 11,930 fee paid separately to institutional investor.

Calculation of collateral value required

Current market price of Matsushita JPY 2,005

Value of collateral required = value of equities borrowed (JPY 100,250,000) + 2% margin = **JPY 102,255,000**

Calculation of nominal amount of collateral

Current market price of the JGB (16 March 2018) 101.0340

Accrued interest as of 19 May 3.9867

All-in price 105.0207

Nominal amount of bonds required by dealer = market value of 50,000 Matsushita shares/(all-in price/100)
= 102,255,000/(105.0207/100) = **JPY 9,500,000 (rounded)**

Calculation of fee payment

Fee payable = nominal amount of equities borrowed * (#days borrowed/360 days)borrow fee =
102,255,000 * (14 days/360 days) * 0.0030 = **JPY 11930**

Repurchase agreements. Repurchase agreements, commonly called repos, are securities lending transactions in which one party agrees to sell securities to another against the transfer of funds, with a simultaneous agreement to repurchase the same or equivalent securities at a specific price at a later date – see Figure 2. Parties borrowing securities are often referred to as buyers, while parties lending securities are referred to as sellers. While market participants may execute repo transactions to obtain control of specific securities, repos are also often structured as secured cash loans, with the repo buyer receiving securities as collateral to protect it against the cash borrower’s default.

In repo transactions, fees generally take on an interest component which is implicit in the pricing structure of the transaction. Securities are initially valued and sold at the current market price plus any accrued interest to date. At the termination of the repo transaction, the securities are resold at a predetermined price equal to the original sale price (market price + accrued interest), plus a previously agreed upon interest rate (the repo rate). In securities-driven transactions, setting the repo rate at a level lower than current money market yields will compensate the lender of securities. Even though the securities lender will be paying more to repurchase its securities, the repurchase price will account for the fact that the lender was able to invest the funds received from the initial sale in money markets at a higher rate than it was required to pay to the borrower of securities. In a cash-driven deal, the repurchase price will typically be set so that the lender of cash (securities borrower) earns the equivalent to current money market yields.

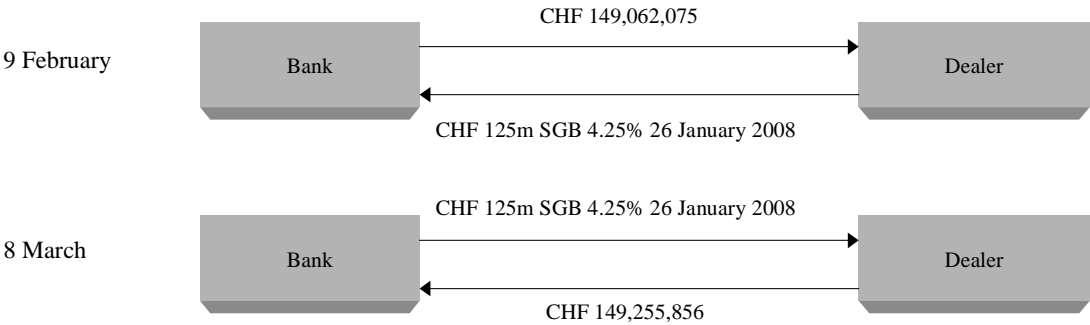
Unlike securities loan transactions, the transfer of the interest in securities from the repo seller to the repo buyer might be characterised as an outright sale or as the creation of a security interest. Repo transactions are typically structured such that all of the seller’s interest in the purchased securities passes to the buyer and that nothing precludes the buyer from selling, transferring, pledging or hypothecating the purchased securities. Unlike securities loan transactions, repo sellers may also retain the right to substitute other securities for those that were initially repoed out. This would typically only

be agreed to by the counterparties in cash-driven deals where securities are serving as collateral for a secured loan.

In cash-driven repo deals, margin is often provided to the lender of money by pricing securities transferred as collateral at market value minus a “haircut”. The initial sale price is therefore less than the market value of the securities. Conversely, in securities-driven deals, the lender of securities will typically receive margin by pricing securities higher than their market value.

Example: Repurchase agreement

Figure 2



A dealer needing to raise cash for 30 days from 9 February to 8 March can provide CHF 125 million Swiss government bonds (4.25% 26 January 2008) as collateral and quotes a repo rate of 1.56%. The repurchase price will be set at CHF 149,255,856 so that the bank will earn repo interest of CHF 193,780 (see calculation below).

Calculation

Current market price	115.12373
2% haircut	(2.30247)
Accrued interest as of 9 February	6.42840
All-in price	119.24966

Amount of cash provided by bank = nominal value of collateral*(all-in price/100)
 $125,000,000 * (119.24966 / 100) = \text{CHF } 149,062,075$

Repo interest to be paid to bank = $\text{CHF } 149,062,075 * (30 \text{ days} / 360 \text{ days}) * 1.56\% = \text{CHF } 193,780$

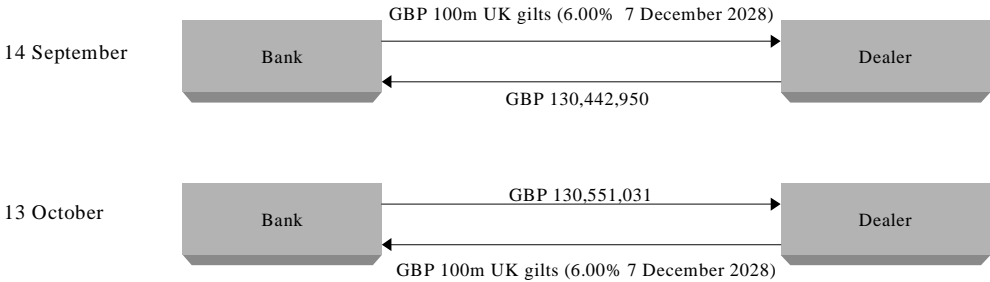
Sell-buyback arrangements. Market participants can also effect securities lending transactions by entering into separate sell and buy trades – see Figure 3. A key element of a sell-buyback transaction is that both the sell and buy trades are entered into at the same time, with the purchase transaction for settlement at a future date. An investment rate, typically the repo rate, is used to derive the forward contract price. In a sell-buyback, the purchaser of securities (i.e. the borrower) receives legal title and beneficial ownership of the securities. The purchaser retains any accrued interest and coupon payments during the life of the transaction. However, the end price reflects the economic benefits of a coupon being passed back to the seller.

In general, sell-buyback transactions are financing trades and limited to fixed income securities. A cash borrower does not normally have the right to substitute collateral. Sell-buyback transactions have traditionally taken place outside a fully documented legal framework (i.e. without a contract setting forth the terms and conditions linking the sale and purchase transactions); thus, margin is not provided in these transactions (i.e. flat pricing at 100% market value). Rather, trade confirmations are delivered showing the details of the trade and that there is the forward obligation to honour the agreement. However, in 1996 PSA/ISMA introduced an annex to their Global Master Repurchase Agreement with

specific provisions for sell-buyback transactions.⁴ Moreover, with the introduction of the Capital Adequacy Directive (CAD)⁵ in Europe, sell-buyback transactions do not receive a favourable capital treatment unless they are made under a legally enforceable agreement. These factors are combining to make full documentation of sell-buybacks more common.

Example: Sell-buyback transaction

Figure 3



A dealer wants to borrow GBP 100 million UK gilts (6.00 %, 7 December 2028) from 14 September to 13 October. A bank quotes a rate of 5.63%.

Calculation		Pricing the sellback transaction for 13 October	
<i>Pricing the buy transaction for 14 September</i>		<i>Pricing the sellback transaction for 13 October</i>	
Current market price	128.82000	All-in buy price	130.442950
Accrued interest as of 14 September	<u>1.62295</u>	(+) Repo interest	.583491
All-in price	130.44295	(-) <u>Accrued interest as of 13 October</u>	.475410
		Sellback price quoted	130.551031
Cash provided by dealer = nominal amount * (all-in price/100) = 100,000,000 * (130.442950/100) = GBP 130,442,950		Thus, dealer sells back GBP 100 million UK gilts at the predetermined price of GBP 130,551,031	
"Repo" interest to be paid to bank (act/365 convention) = 130,442,950 * (29 days/365 days) * 5.63% = GBP 583,491			

⁴ The PSA/ISMA GMRA is a global master agreement for repo transactions that is used widely in international and many domestic markets. The Public Securities Association (PSA) is a bond industry trade association in the United States now known as the Bond Market Association (BMA). The International Securities Market Association (ISMA) is the self-regulatory industry body and trade association for the international securities market. The Agreement is designed for use in repo and (in jurisdictions where it is possible) sell-buyback transactions. There are several national annexes with which the Agreement may be used. Although originally drafted to cover net-paying securities only, the Agreement has recently been amended to allow it to be used for gross-paying securities, for equities (for which an additional annex is available) and for US Treasury bonds. The Agreement operates under English law. See Section 3.2 below for further discussion of the Agreement.

⁵ The EU Capital Adequacy Directive (93/6/EEC), which was adopted by the European Council on 15 March 1993, aims to harmonise prudential supervision of credit institutions and investment firms ("institutions") authorised to operate in the European Union. In particular, it defines the own funds of institutions; sets minimum capital requirements for credit, market and settlement risk; and establishes common rules for the monitoring and control of large exposures. It also provides a common framework for supervision of institutions on a consolidated basis. EU member states may have requirements over and above those set by the Directive. The Directive applies (as with any other Community Directives) to EEA countries (EU and EFTA countries: Norway, Iceland and Liechtenstein); Switzerland took account of the basic principles of the Directive in establishing its own capital adequacy regime. See Section 3.3 for further discussion of the CAD.

1.3 Evolution of securities lending markets

Beginnings to the 1970s. Securities lending has existed since at least the 19th century, although the activity was limited to a few countries. From the beginning there was a distinction between financing markets and securities-driven markets in which specific securities were borrowed against collateral to allow settlement or cover short sales. In the 1950s and 1960s securities lending markets existed in few jurisdictions, the activity was relatively marginal, and these markets were typically highly regulated to ensure that stocks were only borrowed by specific institutions, for specific purposes and often through specialist intermediaries.

The first moves towards today's modern market took place in North America in the 1960s, before developing in most other domestic markets in the 1980s and 1990s. The US market in the 1960s developed an active inter-dealer market in loans of stock, which was associated with increased short selling activity and a rising incidence of settlement fails (which was itself associated with an increase in block trading and the paperwork generated by certificated stock). Separately, a financing market developed in US Treasury bonds to enable dealers to finance their inventory through repo transactions with cash lenders such as banks and corporations; this market had long been in existence, but levels picked up significantly during this period.

In the 1970s, US custodian banks first began lending specific stocks to broker-dealers on behalf of their clients such as insurance companies, university endowment funds and corporate investment portfolios. Meanwhile, demand for stock borrowing was spurred by new forms of trading strategies such as convertible bond arbitrage and tax arbitrage (see Box 1 in Section 2.1). Separately, in the US Treasury repo market, brokers began to run matched book portfolios to provide liquidity to their customers and to use the repo market to take positions on the short end of the yield curve. For example, a broker might lend securities on repo for one month and finance them for one week, in the expectation that repo financing rates would fall. Thus repo grew beyond a straightforward financing market to become a money market instrument in its own right, as an alternative to interbank deposit and bill/CD markets.

1980s. In 1982 the collapse of Drysdale Securities (see Box 3 in Section 4.1.1) prompted significant changes to securities lending in the US markets. Contracts were standardised by the Bond Market Association, collateral margins were specified, market convention called for the collateralisation of accrued interest (which had not previously been considered) and custodian banks amended their lending agreements to disclose the identities of borrower and lender.⁶ For the institutional investor, securities lending had become widely viewed as an adjunct to the custody service provided by custodian banks, which offered the opportunity to earn incremental income against which to offset custody fees. This was often aided by legislative changes – for instance, in the United States, legislation permitting corporate pension funds to lend securities to broker-dealers.

Meanwhile, the 1980s saw a dramatic increase in the size of government securities markets in many jurisdictions. This prompted the development of repo markets in many of the major government securities markets as traders looked to finance inventories, cover short positions and use repo to take and hedge interest rate positions. The increasing use of repo by central banks as a means of providing secured liquidity in open market operations was an important stimulus. The development of an efficient settlement infrastructure was also significant – for instance, the development of book-entry settlement, and specific procedures for repos (such as that introduced in 1988 by Saturne, the French securities settlement system for treasury bills and notes and other short-term instruments) allowing the delivery of general collateral.

However, growth was often limited by concerns about the legal certainty of transactions (e.g. the enforceability of close-out netting), unfavourable tax treatment (e.g. the application of stamp duty on the two legs of a transaction) and regulatory impediments (e.g. restrictions on short selling or the

⁶ Custodians tended to reveal the identity of lenders in general but were, and still are, reluctant to reveal the identity of lenders on a loan-by-loan basis.

application of reserve requirements on repos by banks). As a result, by the end of the 1980s, US global custodian banks, US securities firms and UK money lenders were starting to develop today's "offshore" securities lending markets. These firms were able to effect securities lending transaction outside the local market through settlement on the books of foreign subcustodians. This fed the increasing demands of US firms to borrow non-US securities to facilitate their trading in foreign derivatives markets, to effect dividend arbitrage strategies and to support their increasing appetite for foreign investment in general.

For the most part, though, participants in government securities repo markets remained domestic institutions, which included primary dealers, local banks and other participants in the local currency money markets. By contrast, the stock loan market became increasingly international as the underlying securities markets became more globalised. The expansion of derivatives markets, the development of new arbitrage opportunities – for example, for tax purposes or to take positions against indices – and greater use of active short selling trading strategies saw an increasing number of firms seeking to borrow equities and bonds. These transactions were increasingly cross-border and to meet this demand the large US custodian banks began to run their securities lending businesses on a global basis in Europe, Japan and North America.

1990s. The 1990s have seen an intensification of these trends. The globalisation of securities lending markets has continued and expanded to include new emerging markets. An increasing number of market participants have sought to borrow securities in order to take leveraged positions – for example, taking a long position in one instrument and a short position in another in the expectation that the yield spread between them will alter as a result of anticipated economic or financial market developments. Growth in derivatives markets and the use of information and execution technology (including access to real-time information) have enabled investors to build financial structures that take on the exact exposures they wish to hold while largely neutralising the associated general market risks. Equally, they have increased the scope for index and other arbitrage trades to maintain the relationship between derivatives markets and the underlying cash markets. Securities lending markets have provided the liquidity needed to hold these positions. Meanwhile, market authorities in many jurisdictions have sought to address many of the legal, regulatory and tax impediments to securities lending (see Annex 4). As authorities have taken action to reduce the scope for activities such as tax arbitrage, position taking to minimise market risks has become the main driver behind demand for securities borrowing.

Some key events have also shaped the evolution of the market. For instance, in 1994, the increase in US short-term interest rates led some securities lenders to experience losses on their reinvested cash collateral. In many cases, custodian banks compensated customers for their losses even where they were not legally obligated to do so. This experience made lenders more aware of the investment management side to their securities lending activities. Many have introduced risk/return analysis and industry benchmarking.

Active repo markets have also developed in more government securities markets. In the United Kingdom, for example, an open government bond repo market was established in 1996 with a master agreement and changes to tax laws. In Japan the abolition in 1996 of restrictions on the terms under which cash could be given as collateral and the establishment of a master agreement prompted rapid market growth. In France specific legislation on the status of repo was passed in 1993 and followed by the establishment of a master agreement in 1994. The French Treasury also established a primary dealer system for the government bond repo market in 1994 (see Section 3 for more details on recent changes to national legal, tax and regulatory frameworks). In Switzerland, changes to capital adequacy requirements and the fiscal framework and amendments to the Law on the National Bank created a favourable environment for the launch of a repo market in 1998. And in Italy, the Treasury introduced a quote-driven screen-based market for buy-sellback contracts on government bonds in 1997.

1.4 Market size

Outside government securities markets, definitive and internationally comparable statistics on the types of securities lending transactions traded and the amounts outstanding are not readily available. Securities lending transactions are typically privately negotiated transactions, i.e. conducted “over the counter” outside a central trading floor or a central electronic trading system. Securities lending markets involve such a wide range of market participants, including many that are not closely regulated (notably hedge funds), that comprehensive information on the official size of domestic securities lending markets is difficult to obtain. The fact that for many jurisdictions the offshore market can be as large as, if not larger than, the domestic market makes data collection even more difficult. To date, there has been no international effort to collect data to measure the size of securities lending markets.

However, reasonable estimates of the current size and recent growth of domestic securities lending markets can be made based on available statistics and from informally surveying market participants. Across jurisdictions, data are available on securities lending transactions to the extent that they are maintained by central banks, securities regulators or treasuries. In a few countries, securities loans and repos may be traded on an exchange that collects statistics, or securities settlement systems might be able to identify repo and securities loan volumes from other transactions. Periodic surveys of market participants by industry trade groups may also provide a reliable source of information, particularly to estimate the size of offshore markets. Information on the market size for each of the 16 jurisdictions represented in the Working Group can be found in Annex 3.

Table: Scale of activity in the government securities loan and repo markets
(millions of US dollars)

	A	B	C	D	E	F
	Value of government securities on loan	Value of government securities on repo	Total value of government securities on loan or repo (=A+B)	Total value of government securities issued	Percentage on loan or repo (=C/D*100)	Reporting date
Australia	n.a.	n.a. ¹	n.a.	49,144	n.a.	December 1998
Belgium	1,338	72,749	74,086	252,769	29.3	June 1998
Canada	n.a.	n.a.	n.a.	249,686	n.a.	December 1998
France	2,797	256,866	259,664	704,486	36.8	March 1999 ²
Germany ³	41,193	120,833	162,026	295,491	54.8	March 1999
Hong Kong	n.a.	n.a.	n.a.	13,557 ⁴	n.a.	September 1998
Italy	n.a.	100,603	100,603	1,062,578	9.5	May 1998
Japan ⁵	475,007 ⁶	101,042 ⁷	576,049	2,422,362	23.8	February 1999
Malaysia	n.a.	n.a.	n.a.	19,740	n.a.	December 1998
Mexico	0	8,580	8,580	33,631	25.5	December 1998
Netherlands ³	24,081	34,413	58,494	194,303	32.2	September 1998 ⁸
Spain	n.a.	46,488	46,488	201,217	23.1	February 1999
Sweden ⁹	0	36,891	36,891	127,644	28.9	December 1998
Switzerland	6,531	4,862	11,393	41,001	27.8	December 1998
United Kingdom	45,045	134,593	179,638	482,662	37.2	June 1998
United States ¹⁰	477,624	1,376,300	1,853,924	3,355,500	55.3	February 1999

¹ No data available on outstanding repos; however, average daily repo turnover in 1998 was USD 7,749 million, compared to that of outright transactions (excluding repos) of USD 1,827 million. ² These figures reflect the activity of primary dealers. ³ These figures are obtained by market estimations. ⁴ The figure represents the amount of Exchange Fund Bills/Notes issued by the Hong Kong Special Administrative Government for the account of the Exchange Fund. Currently, no statistics are collected on loan and repo markets of the Exchange Fund Bills/Notes. ⁵ Financing Bills are excluded. ⁶ Figures based on reports by all members of the Japan Securities Dealers Association. ⁷ Gensaki transactions (similar to sell-buybacks) of government bonds and corporate bonds. ⁸ June 1998 for (A). ⁹ These figures are rough estimates by the central bank. ¹⁰ Figures reflect the activity of 35 primary US government securities dealers and 19 bank lenders.

The above table depicts the scale of activity in the government securities loan and repo markets based on official data maintained by central banks or securities regulators.⁷ These statistics clearly demonstrate the importance of the lending of government securities as a source of financing and liquidity in financial markets. What is not evident from these data is the extent to which these markets have grown in size over the last decade. Even those markets that are fairly mature have sustained steady growth in recent years. In the United States, for example, the amount of government bonds on loan or repo increased 27% from a level of USD 1.46 trillion in February 1997 to USD 1.85 trillion in February 1999.

1.5 Recent market trends

Certain recent trends and events can be identified that are currently reshaping the securities lending markets. While some of these trends are affecting financial markets more generally, others are unique to the securities lending market.

⁷ These figures may not, however, capture the activity of all market participants within a particular jurisdiction. In addition, the information estimating the percentage of government bonds on loan (column E) may be overstated to the extent that the same issue may be onlent several times.

Further globalisation. The 1990s have seen the emergence of new participants in the securities lending market from all parts of the globe. Leading firms are now active in as many as 25 markets and market participants are becoming more global in focus, requiring more products and better reporting. Market participants are increasingly using multicurrency and cross-currency collateral. European and Asian investors have started using global custodians to administer their growing cross-border securities lending investments. The liberalisation of securities lending markets, coupled with the entrance of new participants to the market, has increased competition, leading to downward pressure on rates, yet has resulted in more trades and additional revenues.

The borrowing side has substantially driven these trends. International firms have been increasing equity-oriented activity with an increasing willingness by securities firms to undertake proprietary trading activity. Proprietary traders are taking existing trading strategies, refining them and applying them in less developed markets. For instance, prior to the 1997–98 Asian currency crisis the biggest growth areas had been in the Far East and emerging markets.

The globalisation of this market is of course dependent on an increasing supply of stock. In certain emerging markets (for instance Thailand and the Philippines), regulators have relaxed prohibitive legislation and established formal guidelines for onshore securities lending. Brazil, India, Korea and Taiwan have enacted legislation to enable borrowing and lending activity to occur. These are countries with large equity markets, convertible bonds, other equity-linked derivatives and futures contracts – the necessary elements for a securities lending market. Also, as governments issue less short-term debt, more and more institutions are looking to the repo market as an alternative investment vehicle.

Consolidation of financial intermediaries. The consolidation of global custodian banks and broker-dealers has begun to blur the roles played by these institutions within the securities lending market. For example, mergers between global custodian banks and investment dealers have resulted in financial firms simultaneously running agent lending businesses, lending and borrowing securities from a proprietary trading account, clearing and settling transactions either as a custodian or on a tri-party custodial basis, and lending and borrowing customers' securities as a principal intermediary as part of a prime brokerage business.

As consolidation in the financial services industry continues, some participants are concerned that this will lead to less competition. There are also credit issues. When a custodian doubles or triples the size of lendable securities as a result of an acquisition, it will not necessarily double its credit limit to every counterparty. Thus, market liquidity may be reduced. Concerns about credit exposures have further increased the importance of initiatives to reduce remaining settlement risk. They have also prompted greater interest in the use of central counterparty clearing houses in repo markets to allow multilateral netting of counterparty exposures (see Section 2.1.2).

Changes in intermediation of securities loans. The intermediation of securities loan markets is evolving. While custodians began by offering securities lending to institutional investors as a value-added option to their main custody service, increasingly, some institutional investors are determining that this sort of bundling is not necessarily efficient. Over the past 10 years, a much broader group of securities lending intermediaries has developed, which seems to have encouraged greater efficiencies and innovations in these markets. Additionally, some lenders have set up their own direct lending businesses. This enables them to offer a more flexible service to borrowers and gives them full control over lending policies and investment guidelines. Of course, this must be balanced against the cost of setting up an in-house operation.

Another option is for institutional lenders to contract with a major brokerage firm for the wholesale distribution of all or a portion of a portfolio of lendable assets. The lender would grant the brokerage firm the exclusive rights to the securities lending revenue for a guaranteed fee. This often also includes a custodial relationship with the brokerage firm. The brokerage firm coordinates the demands of many proprietary borrowers, lending the institutional investors' securities on a principal basis. The major benefit to this approach for the institutional lender is the certainty of cash flow or guaranteed income. The major disadvantage is that there is a concentration of credit risk in a sole counterparty.

Some lenders are also using third-party agents (specialists) to run their securities loan operations. Specialists may offer customisation and avoid queuing and allocation issues that may arise with large,

full-service custody programmes. By seeking to provide clients with enhanced portfolio visibility and greater loan opportunities, these specialists seek to enhance securities lending revenue for their clients, and in doing so are changing the competitive landscape of the market.

It is important to note, though, that this disintermediation need not diminish the role of the custodian bank in the securities lending market. The overall growth in securities lending activity, the growth in cross-border business and the economies of scope and scale that a global custodian benefits from have allowed custodian banks to continue to benefit from substantial market share as agent-lenders. Even where lending institutions unbundle securities lending activities from custody, the custodian bank typically still plays an integral operational role since all activity and instructions must flow through the custodian bank.

Rise of prime brokerage. A key factor in the recent growth of securities lending has been the increasing use of prime brokerage arrangements. Many hedge funds, smaller broker-dealers and registered investment companies do not have direct access to custodians' lendable securities due to the latter's stringent borrower eligibility qualifications. As a part of broader support services, a handful of brokerage houses are willing to support these activities and have provided access to securities lending markets for these institutions serving as a principal intermediary. Prime brokerage thus allowed the securities loan market to grow with the increase in hedge fund trading activity in the 1990s (see Section 2.1.1 for a more detailed discussion of prime brokerage activities).

Initially, a few US investment banks dominated prime brokerage. In the past few years, new players have joined the prime brokerage business, many of which are part of international commercial banks with extensive custody relations and credit expertise. Today, many large hedge funds and registered investment companies use several prime brokers to ensure that they receive competitive borrowing rates and a steady supply of securities for their trading strategies, as well as to diversify their own counterparty credit risk.

New product structures. Although volumes remain relatively small, a relatively new product, the "equity repo", has been used in Europe as a financing tool for broker-dealers since the mid-1990s, especially in tri-party arrangements (see Section 2.1.1). Today, more firms globally are beginning to accept equities as collateral for financing arrangements. Equity repo can reduce financing costs for dealers while offering cash lenders a higher interest rate if they are willing to take the added risk of equity collateral. When used to borrow securities, equity repo can be an attractive alternative to a securities loan because the term is fixed whereas loans are typically subject to recall (although master agreements also have provisions for open repos and term securities loans).

Equity repo markets have not, however, developed in many jurisdictions. Legislative reforms are needed in many countries to make the transactions possible. Equity repo also requires corporate treasurers to have a level of expertise in equity markets that they may now only possess with respect to money and bond markets. Equally, equity repo activity is limited in some jurisdictions by a lack of standard industry documentation. Some market participants believe that the success of tri-party repo for fixed income securities will in time be repeated for equity products and that this will fuel market growth.

Recently, new financial structures have been developed that have the same economic effect as securities lending yet do not involve an actual exchange of securities and are treated as off-balance sheet transactions. These types of structures – such as total return swaps and combinations of an outright sale with put and call options (a synthetic long position using options) – can be attractive to counterparties that want to avoid the operational burden of securities settlement or that face tax obstacles to securities lending. They can also make more efficient use of capital and allow additional firms to have access to the benefits of the securities lending market without actually using a securities loan or repo transaction.

Other similar financial products, such as contracts for differences and equity swaps, have also been increasingly used as substitutes for securities lending arrangements. Each of these new products potentially gives access to the securities lending market to entities that may not have the infrastructure to monitor fees and rebates or are not permitted to conduct securities lending under regulatory

guidelines but can trade options. These substitutes are especially useful in markets where securities lending is limited to a few selected participants.

European economic and monetary union (EMU). Most market participants surveyed for this report anticipate continued growth of securities lending markets, especially for cross-border use of collateral, within the euro area.⁸ This optimism stems from the prospect of a much larger, more liquid European market – free of exchange rate risk, with the expectation of more collateralised lending by banks, more financing via the repo market by financial companies and corporations and increased securitisation of European finance. As institutions may be more likely to lend securities in the euro-denominated market, derivatives markets may also see an increase in activity that will further fuel lending markets.

It is not yet clear how, specifically, EMU will influence the securities lending markets. There will be fewer currency-based arbitrage trading opportunities, and as the market becomes more efficient there will be an anticipated decline in securities lending spreads. At the same time there are likely to be additional opportunities for trading across national boundaries, and there may be an increase in equity-based and debt-based arbitrage opportunities. Many feel that the movement of 11 markets to a single currency could lead to greater cash collateralisation of securities-driven transactions. Since there will be much more focus on credit in Europe, there may also be more repos in corporate bonds.

For cash-driven transactions, it is possible that separate government securities markets will remain for financing trades against general collateral. If spreads between different government securities are stable, however, new categories of general collateral embracing the securities of different governments are likely to develop. The harmonisation of market conventions and practices and the gradual convergence of regulatory and fiscal regimes should assist securities lending in the EMU environment. An integrated payment (specifically TARGET, the cross-border network of national real-time gross settlement systems) and settlement infrastructure could also be helpful. Many participants have indicated their approval of the harmonisation of the legal and operational European framework that is being precipitated by the launch of a European master agreement and the implementation of links between securities settlement systems. Another important factor will be the success of any euro government securities futures with multi-issuer baskets.

New market restrictions. The recent global financial volatility of 1997–98, led some jurisdictions to enact new restrictive measures on securities lending transactions, as with capital flows more generally. These have been intended to minimise capital flight and prevent those short selling activities that were believed to drive down the value of the securities markets.

New market restrictions have presented problems for securities lending market participants. When restrictions on capital flows were recently implemented in certain Asian markets, for example, many foreign institutional investment firms began selling their securities, leading to recalls of securities loans. In some instances, securities were not returned when recalled, since the volume of short sales outstripped the actual supply. Some positions became frozen when free-of-payment transactions were prohibited to prevent capital from leaving the country, and could be reconstituted only when free-of-payment deliveries were temporarily permitted. In other instances the application of a new regulation may not be clear and this uncertainty led to institutional investors recalling securities on loan. As a result, securities lending in global markets has shifted away from these markets as market participants have generally become more risk averse. Firms have limited the percentage of securities they are

⁸ Since the beginning of EMU, credit operations carried out by the Eurosystem (the European Central Bank and the 11 national central banks of the member states which have adopted the euro in stage three of EMU) have been collateralised by a wide range of assets, which may be used on a cross-border basis. The Eurosystem's "tier 1" list includes all euro area government debt and highly rated euro corporate debt, and its "tier 2" list includes assets which were previously of importance only to national markets (this encompasses some non-marketable assets). Moreover, these eligible assets are also used as eligible collateral by the ESCB (the ECB and the 15 national central banks of all EU member states) when granting intraday credit in euros to participants in TARGET. This has enabled market participants to use assets for interbank operations that were previously immobilised, for monetary policy reasons. At the same time as increasing the potential for outright cross-border securities transactions, this has also facilitated cross-border securities lending transactions.

willing to lend in certain overseas markets. Some market participants have indicated that there has also been a move to quality both in terms of collateral taken and in terms of counterparties when dealing in these markets.

Long-Term Capital Management. The near-collapse of the hedge fund Long-Term Capital Management (LTCM) in September 1998 has also contributed to a heightened risk awareness amongst securities lending market participants. Many hedge funds' strategies (including LTCM's) involve the heavy use of securities loans and repos to provide leverage and to finance their portfolios (although securities lending activities were not the immediate cause of LTCM's problems). This episode has led to a refocusing on risk control within securities lending markets. For example, margin amounts have been more systematically reviewed and firms have reconsidered the collateral they are prepared to accept in the light of concerns about illiquidity in periods of market turbulence. However, there are no signs of significant withdrawals from the market.

2. Market structure

This section examines the basic structure of securities lending markets. It first identifies the main participants and outlines the roles they play. It then examines the structure of a transaction, from its execution through to its settlement.

2.1 Market participants

The main participants in securities lending markets include: (1) end-users, i.e. borrowers and lenders, (2) intermediaries providing various specialised services, and (3) providers of clearing and settlement services. As securities lending markets comprise both cash-driven and securities-driven markets, end-users can be classified more specifically as (i) borrowers of securities, (ii) lenders of securities, (iii) borrowers of cash and (iv) cash investors. Most financial firms are involved in securities lending markets to some degree, whether for themselves or on behalf of clients. For a number of the larger financial firms, securities lending is a major business and they often assume multiple roles in the market. For instance, some of the larger broker-dealers act as active borrowers, lenders, market-making intermediaries and providers of administrative services. For service providers, securities lending has created a range of new business opportunities. Some offer a wide range of support and trade processing services.

Securities borrowers. Firms borrow securities in order to meet a delivery obligation in circumstances in which they do not currently have possession of those securities. These circumstances will occur, predominantly, when firms (1) sell securities they have purchased but which have not yet been delivered to them, (2) open a "short" position (i.e. sell securities they do not own), either voluntarily to establish a specific position or involuntarily as a result of an obligation as a market-maker to fill a customer buy order, (3) need to deliver securities they have not yet purchased against an exercise of a derivatives contract (e.g. the exercise of a call option), (4) want to raise specific collateral, perhaps for another securities lending transaction, or (5) need to cover a failed transaction in a securities settlement system.

The primary borrowers of specific securities are the major securities dealers most active in domestic and global financial markets. They may borrow for any of the reasons above, and their needs are often substantial. Time lags between the inward and outward delivery of securities continue to account for a material part of securities borrowing, but this seems to be falling as a proportion of total borrowing. Far more significant today are the borrowing needs arising from the services these firms provide to their customer base, their proprietary positioning in securities or, in some cases, an active intermediary role in the securities lending markets (described more fully in Section 2.1.1). Other borrowers of securities include broker-dealers, hedge funds and registered investment companies.

Trading strategies including short positions have increased in recent years, and now account for by far the greater part of borrowing demand. These strategies cover a range of financial markets including

equity, fixed income and derivatives markets. Short selling strategies are often directional, that is where a firm borrows a security it does not currently own with the aim of realising a profit from an expected fall in the security's price. To achieve this, the firm sells the security, simultaneously borrows the same quantity of the security to deliver to the purchaser, and hopes to buy back the same quantity of the security once the price has fallen. The security bought back is then used to unwind the securities borrowing. This leaves the short seller with a profit equivalent to the difference between the selling and buyback price, less transaction costs and the cost of borrowing the securities.

Many short selling strategies that involve the borrowing of securities, however, reflect market-neutral trading strategies. Market-neutral strategies attempt to profit from the relative price movements of specific securities, irrespective of broader market movements. Meanwhile, short selling can also be an important part of a hedging strategy as firms often borrow securities as a defensive measure against market movement. Here the borrower could be using a short position to gain protection against a long exposure. This might occur, for example, when a party has committed to underwrite a bond issue and seeks protection by going short of a comparable bond. Alternatively, the purchaser of a put option might seek protection against having to purchase the stock at a loss by running an offsetting position in parallel.

Firms also seek to borrow securities when markets present arbitrage opportunities. These are opportunities to profit by exploiting a price difference between two instruments that should have identical values. Securities arbitrage generally involves buying a security at a low price in one market and simultaneously shorting the same security in another market at a higher price.

Box 1: Common forms of arbitrage transactions that involve borrowing securities

Convertible bond arbitrage. Convertible bonds are debt instruments issued by corporations with the embedded option that they can be converted into a predetermined number of shares (conversion ratio) at the discretion of the bondholder. An arbitrage opportunity occurs when there is a discrepancy in the price of the equity security and its convertible component. If the stock price increases up to the point at which the options are "in the money" and the market value of the bond is lower than the current value of the shares for which the bond can be exchanged (market conversion value), a positive spread can be obtained by buying the bond and converting it immediately. To protect against a decline in stock prices, the bondholder can borrow and sell the securities.

Index arbitrage. There is an arbitrage opportunity using index futures contracts and securities borrowing if, at a given moment, an investor can lock in a profit by simultaneously borrowing the securities underlying the index, selling them, investing the proceeds until maturity at the risk-free rate, and buying back the securities underlying the index by taking a long position in an index futures contract. A profit is locked in since the amount that will be received from the investment is greater than the futures price paid for the index. Portfolio managers who trade large indexed portfolios often favour this strategy. In cases where the index involves a large number of stocks, the arbitrage is sometimes accomplished by trading a relatively small representative sample of stocks whose movement closely mirrors the index. Often, index arbitrage is implemented using an automatic computer trading system.

Tax arbitrage. As a result of tax policies, foreign holders of securities may be disadvantaged relative to firms in the local market over record date. In some jurisdictions, withholding taxes on dividends (or on realised gains, fees, price differential, etc.) on domestic securities traded in foreign markets are lower for local residents than for foreign residents. Local residents can therefore borrow domestic securities from a foreign lender and profit, as they will have to remit to the foreign lender only a portion of the dividends they earn. Changes to tax laws (for example in Australia and Germany) and harmonisation of taxation regimes have, however, reduced the opportunities to profit from such arbitrage strategies.

Merger arbitrage (commonly referred to as "deal" or "risk" arbitrage). This arbitrage opportunity arises when a one-for-one share merger is announced and the stock price of the bidding firm is higher than the target firm's stock price. Assuming the acquisition is consummated on the announced terms, investors that hold a number of stocks of the target firm prior to the announcement can lock in a positive spread by borrowing the same number of the bidding company's shares, and selling them.

Statistical arbitrage. A pragmatic arbitrageur may not want to wait for the infrequent riskless opportunities. Instead, he may take on some risks while still trying to profit consistently from mispriced yield or price spreads among related financial instruments. The trader may put on a spread trade when the yield discrepancy is determined to be statistically significant and hope to obtain a risk/reward outcome in his favour. Also, he can borrow securities to satisfy the short position on the spread trade.

Firms also seek to borrow securities to prevent settlement failures in outright transactions. This continues to account for a material part of securities borrowing but with the increase in book-entry securities and the related move to DVP mechanisms, this seems to be falling as a proportion of total borrowing. However, in cross-border transactions, where there has been an expansion of back-to-back

trading, it is often more efficient and cost-effective to borrow a security than to deal with the risk and costs associated with a settlement failure. Some major market participants have indicated that the borrowing activity resulting from need to prevent settlement failures still accounts for up to 20% of securities borrowing activity in cross-border transactions.

Securities lenders. The primary lenders of securities are institutional investors that are typically long-term holders of securities such as pension funds, insurance funds and mutual funds. They are attracted to securities lending by the additional source of revenue it offers (and by the desire to avoid custody fees for a large portfolio). Although the returns on securities lending are relatively small in the most liquid securities, the additional income assists the institutions in providing a greater rate of return for their clients. This can be important in a field as highly competitive as fund management, where very small differences in performance can significantly affect performance ranking. Alternatively, if not used to boost gross returns, the additional income can, where the securities lending programme is managed by a custodian, be used to defray the custodian's charges or other expenses of the fund.

Financial firms, such as banks and broker-dealers, also lend securities. For the most part this is for onlending, as either agent or principal. In a number of larger securities houses, this activity has developed beyond an extension to the firm's basic inventory management process and become a significant business in its own right. Such business may either provide a customer service or enable a firm to exploit market opportunities on a proprietary basis. A financial institution may, for example, borrow securities in the expectation that others will shortly be prepared to pay more to borrow them. Alternatively, it may attempt to make a turn out of interest rate differentials. Here, the firm might borrow government securities, onlend them against cash collateral, use the cash to purchase higher-yielding securities – mortgage-backed securities, for instance – and then use the latter securities as collateral for the original loan of the government securities.

Cash borrowers. The principal borrowers of cash in securities lending markets tend to be the same institutions that actively borrow securities (e.g. securities dealers, banks and hedge funds). While major securities dealers often have large amounts of capital, their daily financing needs can be many times that amount and can fluctuate significantly on a daily basis due to the size of the positions they take and due to their substantial market-making activities. As a result, dealers have to borrow funds daily to finance their long positions, and actively look to do so using the securities they own as collateral. A sale and repurchase of securities provides a proven and flexible mechanism for arranging the borrowing of cash quickly and relatively cheaply. In particular, it can be used to exploit interest rate differentials that allow the borrower to lock in a higher return or lower cost of finance than would otherwise be available. The cheaper funding costs result from the cash lender's readiness to accept a rate reflecting the fact that the loan is fully collateralised. Transactions are primarily arranged on a short-term basis (overnight or open transactions) via direct contact with major customers, typically banks, securities firms and institutional investors. Typically, each morning a major dealer's financing desks contact major customers to arrange, for example, repo financing to replace maturing repos and to meet expected additions to the firm's securities inventory.

Banks are also active cash borrowers in securities lending markets. Hedge funds, broker-dealers and other registered investment companies also secure financing by entering into repos and other securities lending transactions primarily with major securities dealers. Just as repo can be used to support a variety of trading strategies, so too can securities loans.

Cash investors. Securities lending provides a short-term cash management tool for both financial institutions and non-financial corporations. Investing cash through securities lending provides an alternative to the outright purchase of short-term instruments such as short-term government debt, certificates of deposit (CDs) or commercial paper (CP). Reverse repos, for example, can offer greater flexibility than many other money market instruments because their maturities can be tailored precisely to meet diverse investment needs. In contrast, many other money market instruments are seldom written with maturities as short as a day. The ability to custom-tailor repo maturities and to adjust the amounts invested on a day-to-day basis makes reverse repos well suited to the irregular cash flow patterns experienced by these entities. Investing cash through securities lending transactions is also especially attractive to prudent investors and those subject to certain types of asset restrictions. A

firm's cash investment through reverse repo is fully collateralised and the investor can insist on high-quality government securities to secure the loan.

Much of the cash investment in securities lending markets is also conducted by securities dealers buying and selling money through a series of repo transactions for a spread, with this activity driven largely by interest rate and credit spreads. As discussed in the next section on intermediaries, this activity also serves a market-making role. Broker-dealers often engage in trading which consists of repoing out securities (dealer borrowing money) and then reversing in the same securities (dealer lending money) for an equivalent period. This activity of combining repos and reverse repos in this fashion is commonly termed a "repo book". Securities dealers attempt to earn a higher rate of interest on the money loaned versus the rate paid for funds borrowed. These arrangements have essentially allowed securities dealers to go into the cash lending business and minimise the risks from price fluctuations by matching maturities of the trades, i.e. by running a "matched book".

Other types of spread trades enable a dealer to potentially increase profits. For example, it is common for dealers not to match the end dates of their repo trades. This mismatch enables them to take a position on the future movements in interest rates. If short-term interest rates are expected to rise in the very near term, a dealer might arrange a repo with a longer term than the reverse repo in order to lock in prevailing borrowing rates. This can usually only be done if the dealer retains the right to substitute collateral. The dealer must then enter into a second reverse repo to obtain replacement collateral for the repo customer. Conversely, in a declining rate environment, a longer-term reverse might be financed through a number of shorter-term repos arranged at successively lower rates. Credit spread opportunities are also presented by different securities lending markets. For example, dealers holding higher-quality debt can often borrow money under reverse repos, then reinvest the proceeds in repo collateralised with lower-quality securities at a positive spread.

Securities dealers, hedge funds and other firms active in derivatives markets also rely on securities lending transactions to facilitate arbitrage opportunities in cash markets. In particular, repo can be used to exploit interest rate differentials between cash and futures markets that allow the borrower to lock in a higher return or lower cost of finance than would otherwise be available. Additionally, firms seeking to reinvest cash collateral generated from the lending securities are often significant cash investors in reverse repo markets.

Central banks. As detailed in the recent report *Implications of repo markets for central banks* (1999), published by the Committee on the Global Financial System of the central banks of the Group of Ten countries, the repo markets are useful to many central banks both as a monetary policy instrument and as a source of information on market expectations regarding monetary policy.

A few central banks also lend government securities from their own account to provide liquidity to repo markets and to facilitate smooth clearing of government securities. The US Federal Reserve expanded its securities lending programme in 1999, commensurate with the increase in Treasury market trading volume, to more effectively provide a short-term "last resort" source of Treasury securities. While the US central bank increased counterparty borrowing limits and eliminated the prohibition on borrowing against short positions, constraints were imposed to mitigate the lending programme's direct impact on price discovery, minimise the impact on competition in the securities lending market, and limit the risk that firms would use the programme to augment their ability to control specific issues.

In Hong Kong, the Hong Kong Monetary Authority (HKMA) introduced a market-making arrangement to enhance the liquidity of the Exchange Fund Bill/Note market. This arrangement is facilitated by market participants entering into overnight repo transactions with the HKMA.

2.1.1 Intermediaries – service providers

Market participants often rely on a variety of intermediaries and service providers in conducting securities lending transactions. While securities lending transactions are often negotiated directly between principal counterparties, in many jurisdictions intermediaries are highly relied upon for their market-making services. The market-making intermediaries may also provide trade matching and

confirmation services. In some instances, however, a specialised service provider may also offer a range of trade comparison and other processing services. It is seldom the case that exchanges provide such services, although the Swiss Exchange (SWX) is one exception. In addition, the relative operational complexity of securities lending offers considerable scope for the provision of specialist services to market participants. Market participants therefore often rely on intermediaries to manage various administrative aspects of securities lending, including counterparty evaluation, collateral management and the administration of income distributions and corporate actions. Again, in many instances the provider of these administrative services is the same intermediary relied upon for providing market-making services and trading services, as these intermediaries are offering a turnkey operation with little active client involvement. However, in some jurisdictions, third-party wholesale service providers such as tri-party collateral management facilities play a key role in providing administrative services.

Broker-dealers. Broker-dealers are leading intermediaries in securities lending markets, providing a wide range of services. Most common is the broker-dealer acting as a principal intermediary between the ultimate borrowers and suppliers of funds or securities. By running a repo book, major dealers, using their capital and market-making capabilities, interpose themselves between the two parties, earning a spread on the trade. This can offer the lender a measure of protection against an unknown counterparty, and anonymity to a securities borrower which may not wish to reveal its identity. Some broker-dealers may also not wish to disclose the identity of their client, for purposes of their commercial protection.

Securities dealers also offer securities lending programmes to institutional investors (e.g. pension funds, mutual funds, etc). In what is typically referred to as an “exclusive”, institutional investors will enter into a contractual arrangement whereby the securities dealer is willing to pay a guaranteed fee to the investor for the exclusive rights to the securities lending revenue of the portfolio. The securities dealer will lend from the institutional investor’s portfolio on a principal basis. There are fixed terms to these agreements and they normally involve a custodial relationship whereby the securities firm has custody of all or part of the assets of the institutional investor. Broker-dealers are also increasingly providing agency-lending services as institutional investors look to unbundle securities lending from their custodial services. When providing agency or principal lending programmes, the services, which entail market-making and full administration of securities lending activities, are similar to those traditionally provided by custodian banks (see the section on custodian banks below).

In some jurisdictions, lenders of securities may use an inter-dealer broker to locate borrowers that wish to borrow these securities. Practices vary with respect to dealing with these “finders” but normally the trade is “blind-brokered” with the broker negotiating the trade before revealing (giving up) the identities of the counterparties. The counterparties then have the opportunity to renounce the trade if, for instance, one of them is in excess of its credit limits vis-à-vis the other party. In some instances the inter-dealer broker will act as a principal intermediary to the transaction. In other instances the loans are transacted with the located borrower, and a fee is paid to the finder.

Custodians. Custodian banks have traditionally been the leading lending intermediaries for institutional investors. As portfolio administrators for most of the major investment funds, securities lending management is a natural value-added service to offer clients. Few institutional investors lend on a scale sufficient to justify the infrastructure needed to operate a securities lending business in-house; and many smaller funds lack direct market access, especially overseas. Custodians generally rely on their knowledgeable personnel and the extensive and costly systems capabilities required to conduct securities lending activities. Offering securities lending services enables custodians to increase the yield from clients while simultaneously providing them with the opportunity to earn, with limited risk, incremental income with which to reduce their net cost of custody services.

The primary service provided by custodians is that of the agent/principal-lending programme, which is widely used in many markets. These are generally turnkey operations with little active involvement by the lending client as custodians will arrange trades, issue instructions to discharge settlement and manage all the operational and administrative aspects associated with lending. Prior to conducting loans, custodians will review potential borrowers, negotiate terms and perform due diligence with

respect to forms of lendable securities and acceptable collateral. They also provide the lender with complete collateral management services such as monitoring the receipt and delivery of collateral, valuation of securities on loan, mark-to-market calculations, delivery receipt of margin payments and safekeeping and income/dividend collection. Many custodians also provide various guarantees or indemnification to their lending clients, depending on the client relationship and business opportunity. In addition to coordinating the purchase and sale activity of other managers of a lender's portfolio, custodians provide reporting and risk management information to their lending clients.

In most countries, custodians lend in an agency capacity, arranging transactions on behalf of clients – with the client serving as the true counterparty to the deal that is ultimately liable on any legal obligation. However, in some jurisdictions – France, Switzerland and the Netherlands, for example – custodians typically act as principal intermediaries. The reason custodians act in one capacity or another is generally related to market practice rather than to legal requirements. For instance, principal lending is possible in the Dutch market because it is relatively small, although in some jurisdictions custodians are encouraged to enter trades as principal by tax or capital adequacy requirements. When acting as principal, the custodian has a much greater degree of control over the owner's portfolio. Yet even when acting as an agent, custodians typically act as fiduciaries, exercising discretion in offering securities for the benefit of customer owners.

There are also various instances where custodians are providing intermediary services to securities lending market participants outside their capacity as a lending agent. Institutional investors may choose to lend directly in the market or outsource (unbundle) their securities lending activities from their custodial services to a third-party lending specialist. In many instances, however, the custodian bank still plays an integral operational role in this mode as all activity and instructions must flow through the custodian and it will be relied upon for monitoring settlement and providing administrative services such as monitoring the receipt and delivery of collateral and margin payments.

Prime brokers. An important service for many securities borrowers is that offered by prime brokers. Prime brokers provide clients with a range of centralised record-keeping, clearing and custodial services. Prime brokerage clients tend to be traders active in financial markets such as hedge funds and other broker-dealers. Key components of prime brokerage services include financing of securities positions and access to a ready supply of both liquid and illiquid securities for borrowing at competitive rates.

Prime brokerage involves three distinct parties: the prime broker, the executing broker and the customer. The prime broker is a registered broker-dealer that clears and finances the customer trades executed by one or more registered broker-dealers (executing brokers) at the behest of the customer. The customer maintains its funds and securities in an account with the prime broker. Orders placed with an executing broker are effected through an account with the executing broker in the name of the prime broker for the benefit of the customer. The prime broker next issues a confirmation or notification to the customer and computes all credit and regulatory margin amounts. The executing broker confirms the transaction with the prime broker. The trade may be submitted for clearance and settlement following normal securities lending settlement procedures.

Prime brokerage enables active traders to centralise their clearing and record-keeping at one broker, while executing trades through several, in order to spread commissions, get the best execution and conceal their strategies. Since most securities lenders have stringent eligibility qualifications for borrowers, many hedge funds and broker-dealers rely on their prime brokers for access to borrowed securities. Prime brokers tend to be well-capitalised and active securities borrowers, thereby enabling them to intermediate securities lending transactions on a principal basis. In addition to stock borrowing activity, a prime brokerage business generates clients with a high demand for executions in the cash market, stock loan margin financing, repo financing and the use of OTC and exchange-traded derivatives. The prime brokerage customer may also obtain more favourable financing costs by having all transactions offset through a single margin account.

While prime brokers offer their services to a range of clients, during the 1990s hedge funds have become particularly significant. These funds generally have little or no infrastructure of their own and rely substantially on outsourcing most of their trade processing and administrative functions. In

addition to providing securities borrowing and financing services to hedge funds, they also onlend, or lend from their own inventory, to a wide range of other borrowers which may not readily be able to access global custodians. When facilitating short positions for prime brokerage clients, the firms may adopt a variety of approaches to ensure that the client achieves as efficiently as possible the economic objective of its strategy. In some cases, this will involve the firm itself running the short position instead of the client. In this case it will arrange for the client to take any capital benefit through a derivative arrangement, such as a contract for difference. Where firms take more risk by carrying the borrowing on their own book, they normally protect themselves through floating charges over the hedge funds' assets.

Third-party agent-lending specialists. Due to the increasingly competitive nature of the securities lending business, institutional investors have been unbundling their securities lending activities from their custody services and appointing third-party specialists to manage these activities. These agent intermediaries are sometimes small, separately incorporated organisations (“lending boutiques”), but are more frequently parts of a larger bank or broker-dealer. These intermediaries offer many of the same lending services as an institution’s custodian and may seek to provide the relatively small lending client/fund with greater loan opportunities, customisation and flexibility. In addition, the lender may be able to more closely direct the trading activities of the third-party agent, dictating to whom the securities are loaned, the terms of the transaction, acceptable collateral and collateral delivery. To the extent that all activity and instructions must flow through the custodian, the third-party lending agent will typically coordinate all of this activity so the lender is not required to do so.

Tri-party collateral management facilities. Several global custodians and the ICSDs offer tri-party collateral management facilities to participants in repo financing markets. These facilities were originally developed to address the operational demands of collateral delivery. They allow participants to pass some, or all, of the administrative processes associated with repo to a third-party agent.

Under these arrangements, the lender and the borrower sign not only a bilateral, industry-approved legal agreement with one another but also a tri-party securities lending service agreement with the agent. Once the lender and borrower have predetermined the eligibility requirements for securities and set acceptable margins, the tri-party agent then manages eligible transactions following trade execution through to loan termination.⁹ The tri-party bank first matches trades and following confirmation will receive funds from the cash investor, and securities from a dealer. The tri-party bank then credits the dealer’s cash account while simultaneously moving collateral to the cash lender’s account within the bank. The cash lender thereby possesses collateral in its own custody account at the tri-party provider, which is typically the dealer’s clearing bank.

The tri-party agent is responsible for independently pricing the collateral. It is also responsible for ensuring that the collateral given to the customer meets criteria set by the cash provider in the underlying tri-party agreement. In addition, the tri-party agent handles all administration, daily marking-to-market of collateral, notification of income and securities events and the automatic generation of securities, and/or cash transfers at deal termination. If a margin deficit occurs, the agent asks the borrower for additional collateral. If there are excess securities, it arranges for the excess to be returned to the borrower. It may also be authorised to handle substitution and the reassignment of securities held as collateral to cover other securities loans.

Tri-party arrangements are used extensively in the domestic US repo market and in facilitating cross-border repo transactions, primarily in the eurodollar repo market. The most widely used tri-party collateral management services are those offered by the global custodians. Few domestic CSDs offer tri-party collateral management services. One exception is SEGA of Switzerland, which has offered tri-party services for repo transactions since April 1998, provided through fully automated procedures.

⁹ Unlike the third-party lending agent, a tri-party collateral management facility does not provide market-making services. Eligible lenders and borrowers conduct transactions bilaterally, with the tri-party facility managing the post-trade processing.

Tri-party collateral management facilities offer various benefits to market participants. Intraday delivery minimises settlement failures and reduces the likelihood of intraday overdrafts in either securities or funds accounts. There is greater efficiency as operational flows become standardised with regard to settlement instructions and cash flows. The custodian ensures the segregation of collateral into the investing customer's individual account. Principal and interest distributions received on the collateral are automatically remitted and collateral is managed daily. Tri-party arrangements also result in substantial savings to both counterparties with respect to custody and settlement fees.

Trade comparison, matching and other trade processing services. In most securities lending transactions, trade comparison and the issuing of settlement instructions are performed directly by the counterparties to the transaction, or on their behalf by the market intermediaries, e.g. the custodian bank or securities dealer. In either instance, this requires the bilateral matching of trades, which is neither standardised nor automated and therefore tends to be costly and prone to operational inefficiencies. In very limited instances, a wholesale service provider will offer centralised trade comparison, matching and other processing services to securities lending market participants. These services can facilitate settlement by reducing matching errors and operational risks. In Switzerland, for instance, such services are provided for repo transactions by the Swiss Exchange (SWX) through an electronic platform and a direct link to SEGA, the Swiss CSD, for settlement. Similar services are also provided by MTS, the Italian trading system for European government bonds, and its subsidiary EuroMTS.

In the US equity lending market, many major participants rely heavily on the trade processing services of an independent service provider. Loanet, a private vendor, provides counterparties to equity lending transactions with completely automated trade processing services. New securities loans are queued and matched by the system and sent automatically to the CSD in 15-minute batches, where these transactions are validated against charges to market participants' CSD accounts. At the close of business each day, transactions involving share or money movement are transmitted to each of the counterparties' computer systems for inclusion in the firm's main accounting processing. Unmatched transactions are queued for the counterparties to resolve or cancel. Returns of compared stock loans are also fully automated and eliminate manual handling by securities lending personnel.

By also providing automated reconciliation of all open borrow and loan contracts, Loanet allows for a nearly straight-through processing environment for equity lending transactions in the United States. Once securities lending transactions are entered by both counterparties through designated terminals located in firms' securities lending or cashiering areas, no manual intervention is needed at any time during the life of the loan unless trade confirmations do not match or margin calls are not met. Fully compared contracts are marked to market automatically each day through the CSD accounts, thereby eliminating suspense, exposure and reclamations. The system also provides accounting services and record-keeping for all open borrow contracts, including daily bilateral balancing and rebate billing. While the system does not provide multilateral netting services for new loans, it does net collateral margins between participants. The service also enables lenders to electronically broadcast lists of available securities for loan to borrowers, although borrowers do not have the capability to effect borrowing transactions over the system.

2.1.2 Providers of clearing and settlement services

The clearing and settlement of securities lending transactions follows the same basic process as for the settlement of outright transactions. Where the settlement process tends to differ is in the hitherto relatively undeveloped use of netting and clearing, and in the additional movements of securities required, especially for margin requirements or substitution, during the life of the lending transaction.

Clearing houses acting as central counterparty. In recent years, market participants have been showing increasing interest in the development of central counterparty clearing services, including the use of clearing houses, with a focus on repo transactions. Many market participants have indicated that the related costs of clearing and information delivery are one of the biggest impediments to the growth of securities lending activity. The prevailing view is that centralised matching and clearing can potentially reduce settlement volumes and therefore costs (e.g. liquidity and collateral savings), allow multilateral netting of credit exposures and increase the scope for trading anonymously (e.g. through screen-based trading) because there is a single central counterparty to all transactions. These services can also reduce supervisory capital costs through the associated balance sheet netting of transactions. Clearing houses do, however, concentrate risk and adequate measures must be taken to ensure that they are well managed and that the distribution of risk is transparent.

In the United States, the Government Securities Clearing Corporation (GSCC), an industry service organisation that facilitates orderly settlement in the US government securities markets, has provided its participants with centralised, automated netting and settlement of overnight and term repos since 1995. In 1998, an average daily total of USD 521.2 billion in repo agreements was processed through GSCC. The 1998 GSCC repo volume amounts were nearly double 1997's total. The increase was a result of several factors, including both the increased use of blind brokering¹⁰ and an increase in the number of dealers participating in the GSCC repo system. The trade details (i.e. start date, repo rate, etc.) for all repos entering the netting and settlement system are compared to effect a match. Repos are netted along with each participant's other US government securities trading activity, including all buy/sell transactions and US Treasury auction purchases. The GSCC interposes itself between the original trading parties and becomes the legal counterparty to all netted transactions in order to guarantee settlement.

In some European markets there are also moves to establish clearing and netting arrangements for securities lending. The single currency has increased market interest in these schemes. For instance, in France, MATIF (the derivatives exchange), Sicovam (the CSD) and their parent SBF Paris Bourse (which also runs the clearing service) have jointly developed Clearnet, a trading and clearing system for cash European government bonds and repos, launched in October 1998. The system also clears outright sales and purchases, and allows margin calculations to be based on the combined risk of cash/repo transactions and MATIF derivatives. In the UNITED KINGDOM, the London Clearing House (LCH) is developing a similar service, called RepoClear. The LCH plans to offer German government bond (Bund) repo clearing from mid-1999, with clearing of repos of other major European government securities to follow. Euroclear and the GSCC have announced a joint venture that will also offer centralised clearing of euro repo markets from early 2000.

In Hong Kong, market authorities are considering proposals for a centralised borrowing and lending facility in which the clearing house will act as principal.

Central securities depositories. As with securities transactions more generally, the settlement of securities lending transactions typically occurs on the books of a CSD. Most CSDs provide settlement for securities lending in much the same way as for mainstream transactions. While few treat securities lending as a separate function (which means that there is often no means by which the CSD can identify whether a transaction reflects a sale or a loan), some CSDs have now introduced specialised settlement services that directly facilitate securities lending. Alternatively, where the lending occurs between two customers of the same custodian, settlement may occur internally on the custodian's books.

A few CSDs have introduced services that track and monitor participants' securities lending activity. These systems identify securities lending transactions, allowing the CSD to determine which securities in a participant's inventory have been lent out, which have been borrowed and which represent proprietary holdings. This enables the CSD to automatically pass on income adjustments when due by

¹⁰ In 1996, the GSCC began accepting brokered repos executed on an anonymous or "blind" basis, implemented a new facility to allow participants to submit details regarding repo rights of substitution on their comparison input, and implemented repo-to-maturity processing.

automatically debiting the settlement account, while crediting the contra participant. Similarly, if a securities issue is subject to foreign tax withholding at source, the CSD can calculate adjustments accordingly. These CSD services also track corporate actions and will adjust the appropriate accounts for stock splits and mandatory reorganisation activity (for instance, mergers or name changes). In the UNITED STATES, the Depository Trust Company (DTC) offers these securities lending tracking services, albeit on a voluntary basis. SCLV, the Spanish CSD for equities and private bonds, also provides a service that monitors loan activity and facilitates income distribution.

Some CSDs offer participants the possibility of using special transfer instructions that automatically generate the redelivery of securities at maturity and automatically revalue collateral and adjust margins each day according to requirements. In Australia, RITS (the electronic CSD and clearing house for Australian government securities) has a facility for using information on the date of the return leg and to calculate the repo rate; a similar facility is available in Italy's LDT. In the UNITED KINGDOM, CREST facilitates securities lending through a special stock loan functionality which enables users to pre-instruct the second leg of the securities loan and automatically revalues collateral and adjusts margins daily.

The Central Gilts Office (CGO), the UK CSD for government securities, introduced in the late 1980s a new collateral management facility: the Delivery-by-Value (DBV) system (it is also now available in CREST, the CSD for equities). DBVs facilitate members' ability to give and receive packages of securities as collateral more generally. The DBV system enables members to deliver and receive packages of securities, to a specified value, against the creation of an assured payment obligation, on the basis that equivalent stock is returned automatically the following business day. Each day participants seeking to borrow securities input their borrowing needs, while firms also input their securities availabilities. A selection algorithm notionally allocates the givers' securities to the multiple takers until the value sought plus the margin for each DBV has been satisfied. While the CREST DBV system facilitates members' ability to give and receive packages of securities as collateral, there is, however, no connection within CREST between stock loans by one member to another and DBVs given as collateral.

A recent trend in CSDs has been the introduction of automated securities lending procedures, to facilitate the settlement process and so reduce delivery failures. Generally, the CSD establishes a pool of lenders and conducts securities transfers as necessary on an anonymous and automated basis without requiring any instruction from lender or borrower. Such systems usually track and monitor participants' loan-related activity, identify potential short positions and generate automated adjustments to lending and borrowing accounts. The counterparty to the loan can be either the CSD or the borrowing participant, and loans are typically for very short durations. As collateral, securities lenders typically have their money settlement accounts credited on the day of the loan, allowing them to invest the funds to earn interest overnight. These services are not designed to be used regularly; rather, they are intended to provide liquidity of last resort, and are priced accordingly. Even so, they provide a useful function: from the lender's point of view, it is a source of additional income, while for the borrower, it contributes to the safety and rapidity of the settlement process.

Amongst those to have developed automated lending facilities are the National Bank of Belgium Securities Settlement System, CADE in Spain, SEGA/Inter settle in Switzerland, Deutsche Börse Clearing in Germany, INDEVAL in Mexico, and the ICSDs Euroclear and Cedel. The French CSD, Sicovam, aims to implement this type of service in the future, as a facility offered by the RGV system, while in Italy the Monte Titoli system will introduce this service in 2000. Automated lending programmes seem to have the greatest effect in emerging markets, where the facilities help to prevent securities delivery fails. The securities lending facility in INDEVAL in Mexico is estimated to have reduced fails in this market by 60%.

In addition to these automated services, some CSDs organise a pool of lenders, which can provide securities on a bilateral voluntary basis to counterparties unable to deliver. This type of service requires clear and robust procedures (covering in particular the conditions of intervention of the CSD as agent of the pool or as principal), an adequate legal and contractual framework and risk management procedures to mitigate risk arising for lenders when the borrower has to return the securities. The amounts processed through these lending facilities are as yet limited.

Some clearing houses have instituted stock borrow programmes which enable participants to cover temporary shortfalls or overall net debit positions in the clearing houses, or CSDs, at settlement time. In the UNITED STATES, the National Securities Clearance Corporation (NSCC) offers a stock borrow programme that allows clearing house participants to lend certain stocks and corporate bonds from their account at the CSD (i.e. the DTC) to cover temporary shortfalls in the clearing house continuous net settlement system. The NSCC will, however, borrow securities only to satisfy priority needs, such as buy-ins. In Australia, the ASX Clearing Corporation and the ASX option clearing organisations offer their clients securities lending facilities as lender of last resort, particularly for retail trades, and similar programmes were expected to be implemented in Hong Kong in April 1999. In the Netherlands, AEX Securities Clearing Corporation provides an automated lending facility in order to reduce settlement failures.

Providers of cross-border settlement. The providers of services for the settlement of securities lending transactions involving foreign securities fall into four principal categories: (1) local agents; (2) global custodians; (3) ICSDs; and (4) domestic CSDs with cross-border links to other CSDs.

The use of a local agent (i.e. a custodian) in the country of issue is one way to settle cross-border securities lending transactions. Local agents typically offer both residents and non-residents the full range of settlement and custody services necessary to settle securities transactions. Global custodians also settle cross-border securities lending transactions. A global custodian provides its customers with access to settlement and custody services in multiple markets through a single gateway by integrating services performed by a network of subcustodians, including the global custodian's own local branches and other local agents. The primary advantage to institutional investors of using a global custodian rather than a network of local custodians appears to be lower costs made possible by the global custodian's realisation of economies of scale and scope. By using a global custodian, an investor also avoids the burdens imposed by the need to maintain multiple communication links, conform to multiple formats for inputting settlement instructions, and receive and interpret reports from local agents in each local market in which it trades.

The ICSDs – Euroclear and Cedel – play a prominent role in the clearing and settlement of cross-border securities lending transactions, particularly where non-dollar sovereign debt is being borrowed or is serving as collateral. The ICSDs have developed links to CSDs and local agents in dozens of countries and the use of ICSDs offers several advantages. Much like global custodians, ICSDs offer access to multiple markets through a single gateway at costs that reflect the realisation of economies of scope and scale. In addition, the ICSDs have a critical mass of participants that allows them to settle a very large share of their participants' trades internally or over the "bridge" that links the two systems. Through internal settlements and intraday security loans, settlement of back-to-back loans is quite often possible, even in local markets in which the settlement of such trades through local agents is difficult or impossible. The ICSDs offer DVP settlement, although payments are not made across central bank accounts.

Settlements of securities lending transactions between ICSD participants and local market participants continue, however, to pose some difficulties. If processing cycles for the local settlement systems occur during the business day, they will occur after the ICSDs' processing and settlement cycle has been completed. In such cases, an ICSD participant cannot settle back-to-back trades in which it borrows securities in the local market and seeks to deliver the same securities to another ICSD participant or back to the local market. Instead participants must pre-deposit the securities ahead of settlement date and incur additional financing costs and liquidity pressures, or borrow the securities during the ICSDs' night-time processing cycle. The ICSDs are addressing these problems with the introduction of real-time settlement in 1999.

While numerous CSD-to-CSD links have been established, these links are seldom used to settle securities lending transactions at present. However, there are indications that securities lending participants may make increasing use of domestic CSDs with cross-border links to other CSDs. For example, the European Central Securities Depositories Association (ECSDA), a grouping of

15 national CSDs,¹¹ is developing a model for standardised links between its members and other CSDs. The ECSDA published proposals in July 1997 and subsequently established working groups to consider the legal aspects of links, the development of DVP functionality and the communication networks required to support cross-border settlement. The intention is that the links will be used initially on a free-of-payment basis only. The key principle of the ECSDA model is that the CSD of an investor's country provides a single point of entry that allows the investor to hold securities issued into any other participating CSD. The investor's CSD will be expected to provide custody services to its members in foreign securities, such as receiving dividend payments and acting on corporate events, supported by the issuer CSD.

2.2 Transaction structure: execution, processing and settlement

This section examines the execution, confirmation and settlement of a securities lending transaction. This is generally more complex than that of an outright securities trade. Each securities lending transaction requires various inter-settlement events throughout the duration of the loan in order to ensure the performance of the transaction and to minimise the participants' exposure to risk. A securities loan transaction is also distinctive in that settlement may involve either transfer of securities against the transfer of funds (DVP) or transfer of securities against the transfer of other securities (DVD). A final complexity is that the settlement of the initial delivery of the loaned security typically occurs on a shorter cycle than settlement of outright purchase transactions. The following describes the typical process. It is worth noting that technological development is facilitating the integration of these different steps; straight-through processing initiatives aim to remove the need for manual intervention between trade conclusion and settlement of the return leg of the transaction. This has the potential to reduce both settlement and operational risk.

Execution of the trade. Prior to the trade, the counterparties decide on the legal agreement that will cover the transaction and, in the absence of any central counterparty, each will check the credit quality of the other, so that the counterparty risk can be accurately assessed and the trade accurately priced.

The parties to the transaction determine which securities are eligible to be borrowed, collateral eligibility, maturity, pricing and necessary margins. In repo markets the two underlying principals to the transaction generally deal either directly by telephone or using brokers (screen-based trading is still an exception, although proposals are well advanced to introduce electronic trading in Europe). Providing the two parties have an outstanding master repo agreement, trading typically occurs at market repo rates based on indicative screen prices.

Trading practices are more diverse in securities loan markets. Within the investment guidelines set by the underlying lender, agent-lenders, such as custodian banks, typically deal with a range of borrowers with which they have continuing relationships. For example, borrowers might look first to an agent-lender based in the market in which a security is listed. In the US market, custodians have begun to provide automated feeds of available securities to selected borrowers and a handful are able to match the needs of the borrowers automatically. On occasion, direct lenders and agent-lenders use brokers to find a borrower, in which case names are given up after the transaction has been agreed. Some direct lenders now auction stocks such as equity index baskets to the highest bidder among the borrowers with which they deal. Others have exclusive relationships with particular borrowers, for which they receive a guaranteed fee.

Maturity. In all markets, securities loans are predominantly made on an open basis, such that loans can be returned, recalled or reset either on demand or after an agreed notice period (generally between one and three days). In practice, maturity varies by the type of security lent. The typical length of an open loan of equities is one to two months, whereas a loan of bonds is generally for only a matter of days.

¹¹ ECSDA members are OeKB (Austria), CIK (Belgium), VP (Denmark), APK (Finland), Sicovam (France), DBC (Germany), CSD (Greece), Monte Titoli (Italy), Necigef (Netherlands), VPS (Norway), Interbolsa (Portugal), SCL (Spain), VPC (Sweden), SEGA (Switzerland) and CREST (United Kingdom and Ireland).

Repos, by contrast, are normally done for overnight or term. They are typically of shorter maturity, especially financing trades, though maturities can extend to 12 months in most government securities repo markets.

Transaction size. Although definitive figures are not available, it is clear that the average transaction size varies between markets. Transaction sizes in cash-driven trades (typically government securities repos) are larger than in securities-driven trades (typically equity loans) – in some markets up to 10 times the size.

Pricing. Compensation to the lender is agreed to at the outset and is generally by fee for a securities loan and through the repo rate under repo. When cash is taken as collateral in a securities loan transaction, the fee takes the form of a rebate where part of the interest earned on the temporary investment of cash is returned to the borrower.

In the cash-driven market, pricing reflects prevailing money market conditions. Repo of generic government securities (general collateral) defines the benchmark yield curve in most markets, with collateral of lesser quality commanding higher rates. For example, rates for bonds rated BBB in tri-party repo will be higher.

Conversely, in the securities-driven market, pricing is determined primarily by the availability of the security to be borrowed. Repo rates will be higher the greater the demand for specific securities relative to their supply. Similarly, in securities loan transactions, the fee paid by borrowers is higher when there is greater demand for the security to be borrowed. For instance, fees can range (in the extreme) from 1,000 basis points for the least liquid securities down to (a more usual) 10 basis points for the most liquid securities, mainly benchmark government securities.

Other factors that may affect the amount of compensation include the creditworthiness of the borrower (although this tends to affect the level of collateral required rather than the lender's remuneration) and the tax status of the lender (particularly if the borrower will gain from a tax arbitrage strategy).

The proportion of the fee that is split between client and lending agent can vary considerably (although in almost all cases the client receives the majority of the fee). The primary factor appears to be the level of competition between (and the risk appetite of) lending agents.

Collateralisation. The borrower is typically required to provide collateral. The three main types of collateral used are: (1) cash; (2) securities; and (3) standby letters of credit.

- **Cash.** Where specific securities are lent in reverse repo, cash is always provided as collateral. Additionally, market convention in the UNITED STATES is that securities loans are also collateralised by cash. Cash is also common as collateral for securities loans in some European markets (e.g. 60-80% in France), in Japan, and in cross-border stock lending transactions. Cash is typically reinvested in short-term securities and the interest earned is split between lender and borrower (the rebate). Some lenders prefer not to take cash collateral in order to avoid the operational burden and risks associated with reinvestment. In Japan, some lenders do not participate in securities lending transactions because it is uncertain whether those institutions are permitted to lend securities for the purpose of investment or funding as part of their business.
- **Securities.** Where repo is used as a financing transaction, securities are always provided as collateral. The cash lender will generally specify criteria that collateral must meet (e.g. government securities or securities rated above a certain threshold) but the cash borrower will determine the actual securities provided. A borrower may delegate this role to its custodian or a tri-party custodian. The collateralisation of securities loans with other securities is the normal practice in markets other than the US market. Collateral is typically of similar quality to the securities loaned, but not necessarily.
- **Standby letter of credit.** When counterparties agree to use a standby letter of credit as collateral, the borrower will ask a bank to provide a letter of credit for a specified amount and the lender will make available the securities for as long as this amount exceeds a predetermined percentage of their market value. The lender will have the right to draw down the letter of credit once it certifies that the borrower is in default of its obligations. Except in

Hong Kong, letters of credit are used less frequently as collateral and usually in conjunction with cash or securities, mainly because they use up borrowers' bank credit limits. Some lenders also find the process of obtaining additional collateral from a borrower operationally difficult when collateral is in the form of a letter of credit, since the requirements of secure transmission of amendments and the need to verify the terms of the document are manually intensive and can be inefficient. If, however, these operational difficulties can be overcome, letters of credit have the advantage for lenders that their amount can be increased quickly without the need for delivery of securities or cash.

In certain jurisdictions government regulations dictate the type of collateral that lenders can accept, particularly where the lenders are fund managers. For instance, US law prevents mutual funds from accepting foreign securities or securities not denominated in US dollars. In Japan, the Tokyo Stock Exchange, upon authorisation of the Ministry of Finance, determines the collateral brokers must take when they lend securities to their clients as credit to the margin accounts (albeit only for stock loans arising from margin transactions).

Borrowers tend to prefer different types of collateral depending upon their own credit standing. A highly rated bank will look to give cash, which it can raise cheaply, while an A-rated entity, for example, might find it cheaper to provide a bank letter of credit and a less highly rated entity may prefer to give equities or bonds from its inventory.

Haircuts and margin. Lenders typically require margin in addition to the value of the assets loaned to the borrower. Margin may be applied as an increase in the collateral required relative to the value of cash or securities lent (initial margin) or as a reduction in the valuation of the collateral taken (haircut) (see Box 2 below). In principle, the amount of margin may depend on the quality, liquidity and price volatility of the securities lent, the term of the loan or the frequency with which collateral will be revalued and margin calls made, and/or the creditworthiness of the counterparty.

In cash-driven transactions, the cash investor in a financing trade will usually take margin where it is more creditworthy than the borrower, but for inter-dealer trades in some markets (usually bond markets) it is common practice for no margin to be taken by either party. In the securities-driven market, the securities lender usually takes margin, especially where it is more creditworthy than the borrower. The lender may take margin because it requires additional collateral cover where, for operational reasons, it is unable to undertake daily revaluations in order to mark collateral to market.

Negotiation usually occurs only where collateral is non-standard. Normally, collateral is categorised into broad groups that in practice may be defined by regulation, industry practice or the working of the securities settlement system. Where this is the case, the margins applied are typically 102% to 110%, most commonly 105%.

Box 2: Margins and haircuts

Margins and haircuts are often used in the context of securities lending markets. This box defines the different types of margins and haircuts that can be applied to collateral, and the relationship between them.

Initial margin. Counterparties provide collateral with a market value at least equal to that of the cash or securities they have borrowed, plus the value of the initial margin (e.g. 0.05). Initial margin is usually related to the price volatility of the securities borrowed.

Valuation haircut. The "adjusted value" of the cash or securities given as collateral is calculated as their market value less a certain haircut (e.g. 0.02). The "adjusted value" of collateral provided must then equal or exceed the market value of the securities or cash borrowed plus any initial margin. Haircuts are usually related to the price volatility of the collateral given.

Variation margin. If the "adjusted value" of the collateral in relation to the market value of the borrowed securities or cash falls below a certain "trigger" level, the counterparty supplies additional collateral to restore the parity – a "margin call". Conversely, if the relative value of the collateral rises above a certain "trigger" value, the excess collateral may be returned. The collateral and borrowed securities are typically revalued daily at current market prices ("marked to market").

The relationship between initial margin and haircuts is described by the following formula:

$$(1+m) s \leq (1-h) c$$

where m = initial margin, s = market value of securities loaned, h = haircut and c = market value of collateral taken.

Loan confirmation and clearing. Once a securities lending transaction is executed, the next step is for the counterparties to the trade (lender and borrower) to confirm the economic and legal terms of the loan – the securities or funds involved, the price, the type of collateral, the margin requirements, the settlement date and the counterparty. The loan confirmation process is typically performed on a bilateral basis directly between the counterparties to the trade (or with the agent representing the lender) and does not usually involve exchanges, clearing houses or settlement systems (unless it is an on-exchange transaction). Agent-lenders are not required to receive further confirmation from the beneficial owner of the securities prior to settlement. The counterparties to the loan send out confirmations immediately following the trade since borrowers seek possession of the borrowed securities within a shorter settlement cycle than for outright securities purchases. Confirmation terms often have to be compared manually via phone, S.W.I.F.T. messages or fax. Any discrepancy between the firms' respective confirmations will be reconciled and the confirmations reissued. This can result in delays in the instruction process and in the receipt of settlement information.

Loan matching and confirmation set the stage for loan clearance, that is, for the computation of the obligations of the counterparties to make deliveries or payments on the settlement date. Use of netting arrangements, whether multilateral or bilateral, prior to the settlement of transactions is rare. Once the obligations of the market participants have been confirmed, settlement instructions are transmitted to the settlement system.

Settlement of initial delivery. Once the obligations of the market participants have been calculated, the settlement of securities loans or funds involves the transfer of securities from the lender to the borrower and in most instances a transfer of collateral from the borrower to the lender. The transfer of the loaned securities effects an outright transfer of title to the borrower. The lender retains no property interest in the securities (albeit while retaining a contractual interest similar to a beneficial interest).

The instructions to transfer the securities and funds necessary to discharge the obligations are transmitted to the entity or entities operating the settlement systems. Most securities lending volume settles through CSDs. Once delivery of a loaned security and the corresponding collateral are both represented by irrevocable and unconditional transfers on the books of the settlement entities, the settlement process of the initial delivery is complete. Both parties can mutually agree to cancel a securities lending transaction as long as the initial loan has not settled and instructions can be rescinded without fear of subsequent settlement.

Settlement procedures. Depending on the type of collateral used and the settlement entity or entities employed, settlement may take place on a DVP basis, on a DVD basis (which cannot apply to cash-driven transactions), or on a free-of-payment delivery basis. In the last case, final delivery of collateral normally takes place before the transfer of borrowed funds or securities. In most instances, the settlement procedures will be the same for both legs of the deal. That is, if the initial loan occurs on a DVP basis, it is likely that the return leg will also occur on a DVP basis.

Where cash is used as collateral, securities loans are settled on a DVP basis, where delivery of securities takes place if and only if payment of cash collateral occurs at the same time. When DVP mechanisms are not in place, securities loaned settle free-of-payment following the prepayment of cash as collateral to secure the lender. Often, the delivery of the loaned security and the cash collateral will occur through separate payment or settlement systems, particularly in the case of cross-border transactions.

Where securities are delivered as collateral, and in the absence of DVD mechanisms, both the lender and the borrower have to send a free-of-payment delivery instruction to the securities settlement system. Market practice is generally for lenders to require the pre-delivery of the collateral by the borrower. The lender subsequently makes a free-of-payment delivery of securities to the borrower, with the latter thus exposed to principal risk. The transfers will be reversed at the return leg of the loan with pre-delivery of the borrowed securities by the borrower. In international markets, collateral (whether securities or cash) is received one or two days prior to the transfer of the securities to be lent.

In limited instances, securities loans collateralised by other securities settle on a DVD basis. These settlement mechanisms ensure that the delivery of the loaned securities takes place if and only if delivery of the collateral takes place at the same time. Some CSDs, the ICSDs and custodian banks offer DVD settlement.

Settlement intervals. A key feature of a securities loan transaction is that the settlement of the initial delivery of the loaned securities and pledged collateral occurs on a shorter cycle than settlement of outright purchase transactions for the same security in the same market. Settlement is T+0 in some stock lending/repo markets (for instance the UNITED STATES and the UNITED KINGDOM) and is usually T+1 in most other lending markets (these intervals reflect market convention rather than the settlement system's capability) – see Annex 5. This shorter settlement cycle reflects the purposes of securities lending, for example to avoid settlement fails on outright trades, to support short selling, and to provide immediate liquidity. While there is no true forward securities lending market, lenders may agree to lend securities for settlement several days or weeks in the future.

Conversely, the settlement interval for the return transaction is the same as the settlement cycle for a securities sale in the local market. That is, if the settlement cycle is T+3 within a domestic market, the borrower will have three days to make final delivery of the borrowed securities to the lender from the date of recall. A shorter settlement cycle may not always be feasible for the return leg of the loan if the borrower has sold the borrowed securities in the market or onlent them to another entity, and is unable to repurchase the securities in the market or borrow them from a third party in time to make timely delivery on the recall.

Inter-settlement events. Once settlement of the initial leg of the loan/repo is complete, there are various events that must be managed throughout the duration of the loan in order to ensure loan performance and manage participants' risk exposure to one another. The lender is entitled to all of the economic benefits similar to those associated with beneficial ownership of the loaned securities, while the borrower is entitled to the same for any securities provided as collateral. These economic benefits include amounts equal to cash and stock dividends, interest payments, stock splits, rights of distribution and conversion privileges.¹² Each party to the deal is therefore required to track these events and provide its counterparty with manufactured payments (i.e. substitute payments) in lieu of these events. These manufactured payments must be provided net of all tax withholdings and reclaims to which the counterparty would otherwise be entitled.

Throughout the life of the loan, the borrower has the contractual responsibility to maintain the value of the collateral held in relation to that of the cash or securities on loan. This process entails the daily revaluation at current market prices (marking-to-market) of both the loaned securities and the collateral. Both parties to the transaction typically perform this process and must agree price sources, which are typically a particular screen service provider or screen (or, alternatively, a panel of brokers in the case of illiquid securities). Real-time price information feeds are desirable to track exposures. Borrowers are notified of insufficient collateral (margin calls) while lenders must return excess collateral. Margin calls are only triggered when the value of collateral falls below a trigger point set at, or at an agreed level below, the required collateral level (e.g. 102% of the value of the cash or securities lent). Margin calls must be settled promptly: T+1 is typical for securities given as collateral, T+0 for cash.

When securities loans are collateralised by other securities, counterparties must verify each other's margin marks, clear any payment obligations, and deliver margin as required. Some agent-lenders net open loan contracts as they have the right to set off or net loans and collateral from individual borrowers such that excess collateral from one loan may be used to offset a deficit in another loan. While lenders may be contractually obliged to manage margin requirements, borrowers are contractually obliged to meet them and have an economic interest to monitor and match securities and collateral valuations with lenders.

¹² In most equity loan markets, lenders may give up shareholder voting rights unless they call back the securities.

The administrative burdens involved in taking securities as collateral explain why many direct lenders and some custodians are increasingly looking to lend securities, especially equities, using tri-party arrangements in which a third-party custodian or securities depository takes on the back-office roles.

Where securities loans are collateralised by cash, a daily valuation need only be applied to the loaned securities and then simply compared to the initial value of funds provided as collateral. However, taking cash means lenders assume investment management responsibilities throughout the duration of the loan. Lenders look to ensure that sufficient yield is generated through investment of the cash to cover the rebate payment to the borrower and provide the level of income desired by the lender. Because securities loans are generally open, lenders tend to invest cash overnight in money market instruments such as commercial paper or repo.

Most securities loans are open so that lenders have the right to recall specific securities. Most lenders seek to minimise these recalls, for example by maintaining a buffer of unlent stock in case the fund managers wish to reduce the holding; yet recalls do occur. During the recent Asian financial crisis, for instance, there were a significant number of recalls of securities supporting short positions as lenders rushed to trade out of their positions, leading to some squeezes in the market.

Other events that are required of both borrower and lender throughout the duration of a securities loan include: ensuring the timely receipt of any compensation including rebates; validation of any income charges to securities settlement systems; and periodic reconciliations to ensure that all positions are properly recorded and accounted for. If permitted under legal agreements, lenders and borrowers must also allow for substitution and reassignment of securities used as collateral to take place easily and in a secure manner.

Settlement of return leg. The final step in the process of a securities lending transaction is the settlement of the return leg of the loan. In a securities-driven transaction, for instance, this entails the borrower transferring the same securities borrowed, or equivalent securities, to the lender and the lender returning the collateral provided by the borrower. The settlement of the return transaction will first entail the notification of termination by one party to the other, usually by phone. These instructions will be confirmed, cleared and settled in accordance with the terms of the agreement between the two parties. Once irrevocable and unconditional redelivery of both the securities and the collateral have taken place, the transaction is complete.

3. Legal, regulatory and tax framework¹³

3.1 Overview

The legal, regulatory and tax frameworks relevant to securities lending transactions vary significantly from market to market. There are, broadly, three areas in which national authorities have made changes to this structure to encourage the development of the market: enhancements to clarity, removal of barriers and efficiency improvements.

The articulation of specific regulations and laws to enhance the clarity of the consequences of entering into a transaction tends to increase participants' confidence in a market. The promotion of standard legal agreements in a market and legislation addressing close-out netting have been cited as being particularly beneficial to market development. Of course, a lack of clarity of regulation, law or tax code is likely to impede market growth.

The removal of barriers or penalties applicable to this type of transaction naturally encourages the development of the market. Indeed, moves in this direction were prompted in part by the 1989 G30

¹³ See Annex 4 for more information on the respective jurisdictions of the Working Group members.

recommendation that “securities lending and borrowing should be encouraged as a method of expediting the settlement of securities transactions. Existing regulatory and taxation barriers that inhibit the practice of lending should be removed by 1990”.¹⁴ One of the most significant barriers to development may be related to taxation of these transactions. A tax authority’s granting of tax neutrality to the underlying transaction and the elimination of certain transaction taxes have served substantially to increase activity in a number of markets. Other barriers in this category may include rules that provide a disincentive for participants to use a particular transaction structure.

The elimination of rules that make participation in a market inefficient (in comparison to conducting a similar economic transaction offshore) also fosters market growth. Reductions in participants’ administrative burden may serve to enhance the efficiency of the business, though this may be balanced against requirements for record-keeping to qualify for exemption.

The remainder of this section highlights the main legal, regulatory and tax issues in securities lending markets and outlines the principal types of regulatory impediments and inducements to market development that have been undertaken by national authorities.

3.2 Legal issues

Generally, securities lending and the provision of the associated collateral are undertaken either on the basis of a title transfer approach or as a pledge of the securities. Under title transfer, securities lent are transferred against an obligation of the transferee to return the equivalent securities on the maturity of the loan. If the contract is structured in such a way that the lender (or transferor) is in the same economic position as it would be if it had not transferred the securities, the borrower typically must compensate the lender through substitute (or so-called manufactured) payments.

Many jurisdictions have taken active steps to clarify the legal certainty of transactions. Two examples where specific laws were passed for this purpose are Belgium (in 1991 for repo, and in 1998 for bond lending) and in Italy (in 1992, by which sell-buybacks were treated for accounting and economic purposes as collateralised cash lending).

Another important legal concern is whether a jurisdiction’s insolvency laws allow a set-off of mutual debts, ensuring the non-defaulting party can effectively take the benefit of the stock or collateral held. In many markets, close-out netting (when a counterparty defaults) is officially recognised, and there are no uncertainties with regard to its enforceability. In France, for instance, any uncertainty was removed by legislation in December 1993 for repo and in July 1996 for securities loans. In Switzerland, this was achieved as part of a general review of the bankruptcy laws in 1997. In Italy, the same goal was achieved within the general review of Laws on Financial Markets and Services in 1998. In Japan, a law on close-out netting came into effect in December 1998, which ensures the legal enforceability of the close-out netting of cash-collateralised securities lending transactions. However, if there is doubt about whether netting will be enforceable in a certain jurisdiction, participants will naturally be concerned about entering into transactions with those subject to that framework. In addition, some participants may wish to net their repos against other financial transactions that they have conducted – for instance, futures contracts that they have bought. With appropriate legal drafting, and legal opinions that give parties confidence that set-off and close-out netting is enforceable (and that capital benefits can be realised), this is likely to be achievable within a jurisdiction.

In some markets, sell-buybacks are sometimes documented only by confirmations of each leg of a trade and not by master agreements (usually referred to as undocumented buy/sells). However, regulatory incentives to use master agreements are having an important effect on their prevalence (netting of transactions is now recognised for regulatory capital purposes only where a master agreement is in place). In many markets, master agreements are nearly always used. A variety of

¹⁴ Recommendation 8, *Clearance and settlement systems in the world’s securities markets*, London/New York, March 1989.

different legal agreements have been developed to address various legal aspects of securities lending transactions, the roles and responsibilities of the participants and the legal framework in a particular jurisdiction. These agreements are used to establish the transfer of title (in those markets where title transfer prevails), cover the obligations regarding the receipt and delivery of securities, provide for the frequency of marking to market, and specify the events of default and other similar obligations. The agreement is also likely to dictate the treatment of manufactured dividends. In some markets, close-out netting is possible only when an approved legal agreement has been executed.

For repo and sell-buyback transactions, the most common master agreement used (although not in US markets) is the Global Master Repurchase Agreement published jointly by the PSA (now the Bond Market Association) and the International Securities Market Association (PSA-ISMA Agreement), often with a country-specific annex. This is most often used for cross-border transactions, where the agreement clarifies the governing law of the transaction (English law for the standard PSA-ISMA; the law of the annex if applicable). The contract most often used in the US Treasury repo market is the Bond Market Association Master Repurchase agreement, documented under New York law. The use of master agreements has by and large been promoted by regulators, and in some cases facilitated by legal changes. In Italy, the adoption of a master agreement (very similar to the PSA-ISMA agreement) for the regulated repo market (MTS-PCT), effective from January 1999, has encouraged the use of standard master agreements for transactions carried out by Italian intermediaries. Some jurisdictions have national master agreements, which are used widely for domestic transactions – for instance the AFTB agreement for repo transactions and the AFTI agreement for securities loans in France. In Europe, a new Euro Master Agreement is being developed and sponsored by the European Banking Federation. In 1996, a specific PSA-ISMA annex was introduced to accommodate sell-buyback transactions.

For securities loan transactions, the most widely used global master agreement is the Overseas Securities Lending Agreement (OSLA), which is also organised under English law. In the UNITED STATES, the most widely used securities lending agreement is the Master Securities Loan Agreement, published by the Bond Market Association. Again, national legal agreements are in widespread use where counterparties are domestic.

In some markets, agents to securities lending transactions typically enter into an authorisation agreement with principal lenders, which authorises the agent to lend securities on their behalf and imposes certain restrictions with respect to the manner in which such securities may be lent. Such restrictions may include cash collateral investment guidelines, acceptable borrowers, acceptable collateral, portfolio lending limitations and other similar guidelines. Similarly, the agent enters into a separate agreement with borrowers which imposes certain obligations with respect to the receipt and delivery of securities, marking to market, events of default and other similar obligations. A related legal issue that has the potential to expose a securities lending participant to risk is whether securities held by an agent will be considered part of the property of the agent in the event of the agent's insolvency.

3.3 Regulatory issues

Some securities lending markets have traditionally been very closely regulated. Over the past 20 years, in many developed markets, these regulatory burdens have been progressively relaxed. In Japan, liberalisation of regulations on short sales in 1989 made Japanese government bond lending fully possible for the first time, although at that point bond lending with cash collateral remained constrained by a ceiling on interest rates and a floor limit of 105% on the value of the cash collateral that the bond lender was required to take. These were abolished in January 1996, which made the use of cash-collateralised lending for financing possible by enabling cash borrowers to give a greater value of bonds as collateral.

In Hong Kong, regulatory changes were introduced in 1994 to complement the relaxation of the stamp duty treatment of securities lending transactions. The borrowing purposes that did not attract stamp duty were expanded to include the settlement of a sale, a future sale of stock, onlending and replacement of stock. Also in 1994, the Stock Exchange abandoned the reporting requirements to

lessen the administrative burden on participants. It also made three other changes that contributed to the development of the market: an expansion of the list of designated securities available for short selling, the elimination of the uptick rule for short selling, and a rationalisation of margin requirements. In 1998, the Stock Exchange reintroduced the uptick rule, with some exceptions for certain types of market-maker, as part of a series of measures aimed at limiting short selling activity.

Following the 1998 financial crisis, regulators in Hong Kong have begun to review their supervision of the short selling and securities borrowing and lending markets. A number of legislative changes have been proposed to enhance the transparency of the short selling market, as well as measures to improve the regulatory regime for securities borrowing and lending.

The application of reserve requirements on the cash leg of repo transactions has influenced market development. Where this imposed a cost on banks conducting repo business onshore, the activity tended to move to offshore locations where reserve requirements were not imposed. This has led to the removal of such requirements in order to encourage the development of domestic repo markets. For example, they were lifted in Italy in 1991, in Germany in 1997 and in Switzerland in 1998.

Beginning in early 1996, UK markets were subject to a series of reforms. Before market liberalisation, only market-makers were allowed to borrow stock (under London Stock Exchange rules) in recognition of their obligation to make two-way prices and to allow them to deliver stock when selling short. Borrowing had to be channelled through specialist intermediaries that in turn could borrow the stock only from lenders approved by the tax authorities. In January 1996, open gilt repos were permitted. In October 1997, the restrictions on the borrowing and lending of UK equities were relaxed and equity repo allowed.

Japan's stock lending market has been regulated under the Securities and Exchange Law in the form of a "stock lending programme", which encompasses margin transactions and loans for margin transactions. There were initially uncertainties as to whether securities firms and other institutional investors could lend outside the programme. Coupled with the close regulation, this meant that the demand for Japanese equity lending had to be met by an offshore market. Under these circumstances, the authorities and market participants worked together to reform the stock lending market by establishing a guideline on equity lending (which was introduced in December 1998) and a master agreement.

In many markets, there are restrictions on lending by insurance companies, mutual funds and other similar institutional investors. Even if these companies are permitted to lend the assets they manage, there may be a restriction on the percentage of their assets that may be lent. Further, such companies may also be subject to limitations in their dealings with parties (or affiliates) that may be considered to have an influence over the company's operations. Other restrictions on participants can further limit the assets available for lending in a given market – for instance, some fund managers are not permitted to lend to foreign broker-dealers.

In some markets agent-lenders, such as custodian banks, are independently regulated in their securities lending activities. In the United States, depository institutions acting as an agent in securities lending transactions are required to establish written policies and procedures for their securities lending operations in the following areas: record-keeping, administration, credit analysis, credit limits, collateral management and the use of "finders". The supervisory guidance to agents in these areas is relatively specific and includes a requirement that all collateral be marked to market daily, that written guidelines be established for selecting investments for cash collateral, and that written agreements be executed between the agent and the lender and the agent and the borrower.

Market authorities in certain jurisdictions can restrict the type of securities that may be used for the purposes of a securities loan or repurchase agreement (often these are securities that trade on a certain domestic exchange or an approved list of worldwide exchanges). Some market authorities also impose restrictions on permissible types of collateral. For example, in the US market, foreign currency and foreign securities cannot be accepted as collateral by many private pension funds. Market authorities may also prescribe the manner in which cash collateral can be invested, and how frequently collateral must be marked to market (usually at least daily), or may place restrictions on the amount of securities that may be loaned.

Participants in the securities lending markets are also affected by regulatory capital rules. Banks may be covered by the Basel Capital Accord or the EU Capital Adequacy Directive (which also applies to securities firms), although national regulators may set more stringent requirements. Regulators often require firms to hold capital against any net uncollateralised counterparty exposure, according to the risk weighting of the counterparty. So a bank that has reverse repoed government securities worth €98 against cash consideration of €100 will hold capital against its net exposure of €2. There may also be a capital requirement against the potential future counterparty exposure. However, regulators may require capital to be held against the gross exposure where additional safeguards have not been met. For example, they may require daily mark-to-market practices with variation margining (which would mean that sell-buyback transactions are excluded). They may also require a legal agreement between the parties and a legal opinion to verify that the collateral provisions of the agreement are enforceable under applicable law. Meanwhile, regulators in some jurisdictions may always require capital to be held against the gross counterparty credit exposure arising from the securities lending transaction. In these instances, capital often will be applied to the gross loan exposure based on the lower of the risk weights assigned to the counterparty and the type of collateral received. Additionally, regardless of the specific capital treatment of securities lending transactions, banks typically must also hold capital against their proprietary positions in securities, including those which have been repoed or loaned.

3.4 Tax issues and accounting treatment

The tax treatment of securities lending transactions is largely determined by whether the transaction is deemed to be a secured loan or a sale (and repurchase) of the securities and whether these transactions receive beneficial tax treatment in the relevant jurisdiction. Tax authorities may treat securities loans, repos and sell-buybacks differently despite the similarities in their economic consequences. For this reason, tax consequences are likely to have an important influence on a participant's choice of transaction structure.

Tax constraints on securities lending markets were particularly severe in the early years of the operation of many markets. In particular, where a loan was characterised for tax purposes as two outright purchases (more prevalent in the case of repos than of loans), many jurisdictions applied stamp duty on both legs of the transaction, effectively stymieing the market. In Switzerland, for instance, the process of liberalisation has been a gradual one, with stamp duty on securities loans lifted in 1983 and on repos in 1997. In Italy, the process of liberalisation from stamp duty for financial transactions carried out with non-residents started in 1991. As from January 1998, OTC sell-buybacks (and repos) on listed securities carried out between financial intermediaries and between the latter and non-residents are exempt from stamp duty. Since 1995, a specific tax provision has exempted securities loans from stamp duty.

In Hong Kong, securities lending for settlement purposes had taken place informally among local brokers well before 1986, when the tax authorities imposed a tax on these transactions. It was not until 1989 that a limited exemption to the stamp duty was offered for securities borrowing of up to 14 days. Despite this change, prior to 1994 there was little stock lending in Hong Kong, other than small amounts of Japanese and Australian business. Demand was limited by certain legislative constraints, especially the Stock Exchange rules constraining short selling and the restrictions imposed by the Stamp Duty Ordinance. After the relaxation of the stamp duty treatment for borrowers (exemption period extended from 14 days to 12 months) and the removal of legal and regulatory constraints on short selling (both in 1994), the Hong Kong securities lending market developed strongly. The Hong Kong government's 1999 Budget proposes to lift the 12-month exemption period restriction.

In most developed securities lending markets, it is now recognised that loans do not result in capital gains, because no disposal of the securities has occurred (although tax authorities are sometimes less accommodating in respect of sell-buybacks). In Australia, for instance, taxation rules were amended in 1990 to ensure that bond lending was not subject to capital gains or income tax. However, one tax still often applied to transactions is withholding tax. In Italy, for instance, withholding tax applies to proceeds of securities lending transactions obtained by resident individuals, whereas no such tax

applies to similar proceeds obtained by resident companies and, as a rule, non-residents (both companies and individuals).

The details of the criteria for neutral tax treatment of potential capital gains vary considerably between countries. For example, in France, tax neutrality is not available if a dividend or interest to which a tax credit is attached is paid during the period of the loan. In Belgium there is a meaningful distinction between dematerialised and materialised Belgian securities, since securities lending operations (including repurchase agreements) are regarded for tax purposes as a transfer of ownership unless they are of dematerialised securities (and only in accounts held by professional and/or foreign investors). As such, for tax purposes securities loan transactions and repos of materialised securities are treated as transferring ownership and therefore all realised capital gains and interest or dividend income are taxable events. For these reasons, in Belgium the domestic transactions of repos and securities loans relate almost totally to dematerialised public debt securities.

Liberalisation of the UK securities lending market has been dependent on significant tax changes. The development of repo markets has required the tax authorities to abolish a rule that granted tax exemptions only where borrowings were undertaken for the purpose of meeting a delivery obligation. The introduction of gilt repo was accompanied by changes to the accounting regime, under which gilt interest could be paid gross in certain circumstances, and the advent of gilt strips brought dividends on most gilt holdings out of withholding tax. It remains the case that international equities are subject to withholding tax, which provides an incentive to use a foreign lender. Approval of lenders by the Inland Revenue is no longer necessary. However, largely because of Inland Revenue concerns over possible abuse of stamp duty, equity borrowing and repo transactions qualify for stamp duty relief only when conducted on-exchange.

Tax arbitrage strategies have been responsible for a significant portion of the securities lending activity in many markets. Key issues include the treatment of the disposal and repurchase of securities with respect to any capital gains or income, the treatment of the various income streams (such as lending fees, dividend and interest payments, compensation payments, interest on collateral, etc.), any distinction between the treatment of different types of entity (for instance residents and non-residents) and whether the transaction is subject to a transaction tax, value added tax, etc. Importantly, if a market does not have specific tax provisions for the securities lending business, it is likely that potential market participants will be reluctant to enter into these transactions because of the uncertainty of their tax consequences.

Typically, the taxation of the various income streams from a securities loan or repurchase agreement is related to the accounting treatment of the transaction. In jurisdictions where no specific accounting treatment exists, the participants follow generally accepted accounting principles. These income streams include borrowing fees, rebate interest, interest and dividends received by the borrower and compensatory payments made to the lender. Whether and under what conditions these income streams are subject to taxation differs from market to market.

In many markets, the borrowing fee, i.e. the amount paid to the lender by the borrower, is treated as income for the lender and expenditure for the borrower. With respect to transactions collateralised by cash, the proceeds of investment are generally viewed as income for the lender (which has the power to direct the manner in which it is invested and assumes the risk of loss). The rebate paid by the lender to the borrower is expenditure for the lender and income for the borrower.

The tax treatment of compensatory payments (where the lender has not received the interest or dividend on the lent securities and, therefore, receives from the borrower a payment of equal value) also varies. In some markets, this “manufactured” income retains the original character (dividend or interest) of the income. As such, the nature of the original distribution will determine the tax treatment of the compensatory payment to the lender. In other markets, lenders must treat this revenue as ordinary income (without regard to whether it replaces interest or dividend income). In this case, if the loan security is a tax-exempt bond, the lender receives ordinary income (not tax-exempt interest income).

The accounting standards followed in a particular jurisdiction also have an influence on the securities lending market – particularly with respect to whether (and under what conditions) collateral must be reflected on the balance sheet. In some markets, for instance, cash collateral should be reported as an asset by the lender, while securities collateral is not reported as an asset unless the lender has the right to pledge or dispose of securities. Additionally, collateral held in a tri-party arrangement may not be required to be reported as an asset by the lender, but instead as part of a custodial risk statement. If the accounting standards require collateral to be included in a lender’s asset base, regulatory capital requirements are likely to be applied accordingly.

4. Risks and risk management

The first part of this section defines and discusses each of the types and sources of risk to securities lending counterparties and concludes with a general discussion on the nature of systemic risk. The second part describes the procedures typically used by participants in the securities lending market to manage these risks.

4.1 Types and sources of risk

Securities lending transactions take place in existing securities clearance and settlement systems. The types and sources of risk are therefore similar to those faced by participants in outright securities transactions. Consequently, the analysis of risks presented in the CPSS reports on *Delivery versus payment in securities settlement systems* (1992) and *Cross-border securities settlements* (1995) are directly applicable in the present context.

Securities lending, however, can heighten and lengthen the duration of exposures to these risks. Securities lending transactions are similar to bank loans in that there is a creditor’s agreement to advance value in exchange for a promise to pay at a later date. In a cash-driven securities lending transaction, there is a “debt obligation” comparable to the extension of bank credit where a cash investor’s agreement to advance funds is based on an estimation that the debt will eventually be repaid. Likewise, in a securities-driven deal, a borrower of securities becomes contractually obligated to redeliver a like quantity of the same securities. Additionally, there are two settlement legs inherent to each securities lending transaction. Risk for counterparties to securities lending transactions therefore lasts from execution of the trade through to the settlement of the return of borrowed securities or funds. But counterparty credit risk is mitigated by the exchange of securities for cash or other collateral of an equivalent value that can be sold in the event of a counterparty default.

4.1.1 Credit risk

Credit risk is the risk that a counterparty will not settle an obligation for full value, either when due or at any time thereafter, typically as a consequence of an insolvency. In securities lending transactions, two types of credit risk should be distinguished: (1) principal risk and (2) replacement cost risk. Principal risk is the risk of loss of the full value of securities or funds that a non-defaulting counterparty has transferred to the defaulting counterparty. Replacement cost risk is the risk of loss of unrealised gains on unsettled contracts with defaulting counterparties.

Principal risk. The largest credit risks in securities lending arise when either party is exposed to principal risk. A non-defaulting counterparty may be exposed to principal risk in two instances: (1) if the completion of settlement of either leg of a securities lending transaction does not take place as expected (settlement risk); or (2) if securities lending transactions are uncollateralised.

If it is possible to complete delivery of securities or funds without receiving delivery of collateral, the lender is at risk at the settlement of the initial loan and the borrower is at risk at the return leg. If it is possible to complete delivery of collateral without receiving delivery of loaned securities or funds, the borrower will be at risk at the initial settlement with a lender exposed to risk at the return. Principal

risk associated with the settlement process can be eliminated if a DVP or DVD mechanism is in place. In the absence of these arrangements, it is standard market practice for lenders (of cash or securities) to require pre-delivery of collateral at the initial borrow and pre-delivery of the borrowed securities, or funds, at the return. Borrowers in securities lending markets are therefore typically exposed to principal risk during each settlement interval when DVP or DVD mechanisms are not employed.

If a securities lending transaction is uncollateralised, the lender may be exposed to principal risk throughout the duration of the loan. Principal risk may also arise for lenders in a collateralised loan if the lender cannot liquidate collateral in the event that a counterparty defaults because a collateral arrangement has not been perfected in accordance with the requirements of the relevant collateral law.

Replacement cost risk. Credit risk can arise in securities lending transactions even where transactions are initially fully collateralised and where a DVP (or DVD) settlement mechanism is employed. In the event that a securities lending counterparty defaults while the loan is outstanding, the non-defaulting counterparty would typically look to effect a “buy-in”. For a lender, this entails liquidating any collateral and purchasing the loaned securities in the open market. This may expose the non-defaulting counterparty to the risk that it will incur a cost (a loss) in replacing the contract. Such a loss will occur for a lender only if, at the time of the default, the loaned asset has a positive market value relative to the collateral value. Conversely, the party borrowing securities or funds would typically have the right to the return of collateral from a defaulting counterparty and would only be exposed to a replacement cost risk if the collateral instrument had a positive market value relative to the borrowed asset.

An assessment of replacement cost risk must involve an assessment of (i) the probability of the counterparty defaulting and (ii) the credit exposure (the potential magnitude of the positive market value, if any) at the time of the default. With respect to the first component, default probabilities are often estimated by rating the overall credit qualities of counterparties to ensure their creditworthiness throughout the business relationship. With respect to the second component, the calculation of the current exposure is usually straightforward – it equals the current net market value of the loaned security relative to the collateral instrument. Problems can arise, though, where illiquid securities are taken as collateral or lent. In episodes of market illiquidity, it may be difficult to obtain or agree reliable prices for valuation purposes. By contrast, the assessment of potential future exposure (i.e. the potential for a securities lending transaction to assume a positive market value at different points during its remaining life) is considerably more complex. It will depend upon: (i) the estimated time interval from the last revaluation and margin call preceding the default to the point at which collateral held can be liquidated in the secondary market; (ii) the expected volatility of the market value of the collateral over this period; and (iii) the correlation between movements in the value of the collateral and of the securities lent. Various statistical methods can be used to estimate probability distributions for future exposures. Potential future exposure can then be defined as the peak (maximum) value of these estimates. In general, potential future exposures can be reduced by taking collateral of which the market price tends to move in line with that of the securities lent: for example, it might be debt of the same duration. The range of the distribution of potential future exposures can be reduced by avoiding excessive concentrations of risk within the collateral taken (for example, securities of the same issuer). Market participants need to be aware, however, that statistical correlations between price movements can break down in extreme market conditions.

Securities lending counterparties often have multiple transactions with one another. In such circumstances they may seek to enter into a legal agreement that provides for the netting of obligations under all contracts covered by the agreement in the event of the default of either counterparty. Provided the agreement is legally enforceable, the credit exposure is the net market value of all the contracts rather than the gross sum of positive market values, i.e. losses incurred in replacing contracts with positive market values can be offset by gains in replacing contracts with negative market values.

Collateral arrangements may therefore have a significant effect on replacement cost credit exposures. Collateral reduces the current exposure of the lender to the borrower by the amount of the collateral held. Its effect on potential future exposure is more complex, particularly if the collateral agreement provides for rather infrequent recalculation of exposures and collateral values or provides that a

counterparty can demand collateral only if the exposure exceeds a certain threshold. Even with such provisions, however, collateral may reduce potential future credit exposures considerably.

Box 3: Drysdale Securities – An object lesson in credit risk

The 1982 failure of Drysdale Government Securities, a US securities firm, had a profound impact on the securities lending industry. This one event led to, amongst other things, the standardisation of contracts, collateral margin requirements being specified, coupon accrual being established, and more careful scrutiny of counterparties and their balance sheets.

Prior to the failure, it had been common practice in the US repo market not to factor accrued interest on coupon-bearing securities in the marking-to-market process. Drysdale was therefore able to generate working capital by reversing in US government securities to make short sales to a third party, for an amount that included the accrued interest. Drysdale used the surplus cash to take large positions on the future direction of interest rates. This strategy was successful until, in the wake of higher interest rates, cumulative losses on Drysdale's investments caused it to be unable to meet coupon interest payments on the securities it had borrowed. On 17 May 1982, Drysdale filed for bankruptcy and Drysdale's securities lending counterparties realised that the missing accrual was in actuality an under-collateralised credit exposure.

In addition to illustrating the risk to repo borrowers of not including accrued interest in the initial price of the repo security, lending agents realised the importance of preserving their agency status. Drysdale had relied on a handful of custodian banks to clear their repo trades. Although the banks had not guaranteed these repo trades, by failing to disclose Drysdale's identity to the repo counterparties the banks were recognised as principal to the transactions. Rather than pose legal challenges, many of the bank agents elected to absorb the hundreds of millions of dollars of losses to Drysdale in order to preserve the reputation of their franchises.

From that point on, full accrual pricing, in which accrued interest is included in full in the initial purchase and resale prices, was adopted as standard market practice. Daily marking-to-market of collateral became much more widespread. And lending agents clearly declared their agency status in lending agreements.

4.1.2 Liquidity risk

Liquidity risk is the risk that a counterparty will not settle an obligation for full value when due, but on some unspecified date thereafter. The reason that a counterparty fails to settle may be temporary, such as from experiencing demands for securities or funds that are so large as to render an institution unable to meet its obligations when due, in which case the event would be termed a failed transaction rather than a default. Another instance may be where investors holding short positions cannot obtain the securities needed to unwind the securities borrowing positions. In most respects, liquidity risks associated with securities lending transactions are qualitatively no different from liquidity risks associated with other financial obligations.

In some circumstances, however, securities lending could give rise to significant liquidity pressures. For example, the relatively short initial settlement cycle can contribute to delayed or cancelled transactions. This could possibly force a firm to purchase funds at a higher rate or liquidate assets to avoid failing to discharge other payment or securities settlement obligations. The costs associated with such events will depend on overall liquidity of the market. Another potential source of liquidity demands stems from the fact that many securities lending transactions provide for termination on demand by either counterparty. Liquidity pressures may be greatest for borrowers of securities that typically do not have the securities in their possession and either have to recall them from other customers or purchase them in the market. Lenders of securities, however, may face liquidity pressures in instances where they have re-transferred or re-hypothecated collateral, or if the reinvestment of any cash collateral was not sufficiently liquid to meet the demands of an unexpectedly high amount of returns by borrowers. Institutional lenders may also face liquidity pressures when portfolio managers sell off unexpectedly high levels of securities that are on loan. Since many institutional lenders often do not have borrowing relationships, firms may have to purchase the securities in the market to make good on their sale obligation if borrowers do not return securities in a timely fashion.

Another potential source of liquidity demands associated with securities lending transactions, further discussed in Section 4.2.4, is the fact that securities lending transactions are collateralised. A significant decline in the value of collateral relative to borrowed securities or funds could result in substantial demands for additional collateral and thus substantial liquidity pressures. Some securities

lending agreements provide for collateral requirements to be increased in the event of an adverse credit event such as a credit rating downgrade.

Securities lending market participants also face a form of “market” liquidity risk, also referred to as marketability risk or gap risk. This is the risk that a firm is unable to conclude a transaction at anything near the current market price due to a lack of marketability of a security at prices similar to recent sales. This risk may arise because a given position is very large relative to typical trading volumes, or because of some sort of market manipulation or because markets are generally unsettled. More generally, market liquidity risk is usually reflected in a wide bid ask spread and large price movements in response to any attempt to buy or sell. In securities lending, this risk may be associated with the inability for borrowers to obtain securities to meet recalls of securities on open stock loans used to cover short positions. This may happen in instances where fund managers want to sell out of a market, putting a squeeze on shorts betting on a market fall. Market liquidity risk may also manifest itself for lenders of securities if their securities lending exposures are under-collateralised because the collateral can only be liquidated at a discount, as was the case for some securities lending portfolios during the market volatility of the summer and autumn of 1998.

4.1.3 Market risk

Market risk is the risk of loss from adverse movements in the level or volatility of market prices of assets. Market risk can be meaningfully analysed only on a portfolio basis, taking into account offsetting positions in particular underlying risk factors (for example interest rates, exchange rates, equity indices or commodity prices) and correlations among those risk factors. In securities lending transactions, market risk can materialise in such cases as (i) a counterparty default, (ii) inappropriate margining, and (iii) reinvestment of cash collateral.

As discussed in the section on replacement cost risk, firms may be exposed to market risk in the event of a counterparty default. Default may leave the solvent party with an unhedged or open market position or deny the solvent party unrealised gains on the position. In an uncollateralised loan, the lender would be exposed to market risk from an upward movement in the market price of the borrowed securities during the loan. Since the overwhelming majority of securities lending transactions are collateralised, a principal’s true potential exposure is subject to movements in the market price of the loaned asset relative to the collateral.

Counterparties that enter into term securities lending transactions are exposed to prevailing market conditions and may be exposed to market risk. For example, a cash borrower locked into a fixed-term repo financing arrangement is exposed to interest rate risk to the extent that an initially attractive borrowing rate becomes costly if short-term interest rates decline substantially while the loan is outstanding. Likewise repo financing arranged on an “open” or continuing basis is typically renewed each day with the repo rate adjusted to reflect prevailing market conditions, potentially making transactions costlier than originally anticipated.

Another source of market risk is the acceptance of cash collateral. This introduces an additional element of leverage to the securities lender that is absent from transactions collateralised by other securities. To obtain the necessary incremental yields on the cash reinvestment to ensure loan performance, lenders of securities will typically match only part of the term of the loan with the term of the cash investments. For example, the rebate rate may be based on an overnight lending rate while cash collateral will be invested in a 30-day money market instrument. This creates an open interest rate position that generates market risk. Cash collateral reinvestment can also result in a mismatch between a fixed rate paid by the borrower and the floating rate indices of the investments. This basis risk can also be seen as a strategic exposure since it grants a securities lender another opportunity to enhance returns by arbitraging between indices.

The market risk associated with the acceptance of cash collateral became apparent in the United States in 1994. Securities lending firms that had invested cash collateral in longer-term and derivative instruments experienced negative earnings following a series of unanticipated increases in US short-term interest rates. As the value of longer-term cash investments declined, and as shorter-duration loans were maturing, these lenders were unable to increase rebate rates on new loans to match interest

rate increases.¹⁵ These lenders were therefore required to liquidate cash reinvestments at depreciated values. The 1994 experience demonstrated the need for comprehensive asset liability management by short-term investment managers when accepting cash collateral. There has also been an increased awareness overall that securities lending performance must be evaluated within a risk context. In markets where the acceptance of cash collateral is common there have been recent efforts to develop and adopt standard approaches to quantifying risk exposures.

Apart from the market risks inherent in securities lending transactions, firms are also often exposed to the market risk associated with the various investment strategies where securities lending is an integral component. A firm that borrows securities in order to transfer them to a third party may be exposed to the risk that the price of the securities will rise. It may be required to purchase the securities later at a higher price in order to unwind the borrow obligation. Firms that borrow securities to arbitrage price differences in markets are typically exposed to movements in the level or volatility of market prices of assets. Arbitrage strategies may also be dependent on the completion of a corporate merger, takeover or recapitalisation. When firms choose not to match the maturities of repos and reverses on their repo books, they may be exposed to an unanticipated movement in interest rates. A dealer could experience a loss if it finances a longer-term reverse repo through a number of shorter-term repos and interest rates unexpectedly rise. The shorter-term repos may have to be arranged at successively higher rates.

4.1.4 Legal risk

As with any financial contract, there are legal risks associated with securities lending transactions. Legal risk can be defined as the risk of loss because of the unexpected application of a law or regulation or because a contract cannot be enforced. A securities lending contract may be invalid or unenforceable for various reasons. For example, a legal agreement may be unenforceable because the counterparty lacks the capacity or authority to enter into a contract under local law. An institution may have a limited authority to grant security interests, which may affect its ability to post collateral for a securities loan. Entities can also be subject to limits on their capacity or authority to engage in securities lending because of restrictions in corporate charters and by-laws. Since securities lending arrangements are two-way transactions where both parties have a legal obligation to return either securities or funds at a later date, the enforceability problem is relevant in both directions.

Even if a securities lending contract constitutes a legal, valid and binding obligation of the parties, certain provisions may not be enforceable. For example, close-out netting under a master agreement may not be enforceable upon counterparty insolvency. The insolvent counterparty's bankruptcy representative may be permitted to repudiate securities lending contracts with a positive market value to the non-defaulting counterparty and enforce contracts with a negative market value to the non-defaulting counterparty. With respect to a collateral arrangement, the collateral taker may not be able to liquidate the collateral because the collateral arrangement has not been established or perfected in accordance with the requirements of the relevant collateral law. Repo is often used to avoid the need to perfect collateral, which can be cumbersome in some jurisdictions. However, use of repos runs the risk that a court will re-characterise the transaction as a collateralised loan.

Even if the collateral arrangement has been set up correctly, there is the risk that the relevant insolvency law may impose a stay that prevents the collateral taker from quickly liquidating the collateral. Local law may invalidate the collateral arrangement if it was not implemented sufficiently well in advance of a counterparty's insolvency or create a preferred class of creditors and force the collateral taker to share collateral with such creditors. The collateral transferee should be aware whether or not it has the right to have collateral returned in the event that a counterparty defaults or whether it can set off the value of the collateral provided against the obligation to return the loaned securities.

¹⁵ This dynamic was exacerbated as many borrowers began to unwind short sale and arbitrage positions due to the changed market conditions.

Cross-border securities lending transactions raise more complex legal issues. Securities lending, or short selling, may not be permitted under local law or may have complex regulations governing transactions. Some countries may limit foreign ownership of certain categories of securities that may make it difficult to borrow securities or re-register securities returned from loan. A primary difficulty arises in determining which law governs the enforceability and perfection of the security interest in collateral. Each country may have different technical rules for enforceability of the security interest and more than one country's law may apply. Market participants must also anticipate national differences relating to corporate actions, securities settlement procedures and the recognition of netting schemes.

4.1.5 Operational risk

Operational risk is the risk that deficiencies in information systems or internal controls could result in an unexpected loss. The costs can be related to either a loss of a fraction or the whole value of a transaction, or to penalties imposed on the institution by a counterparty. Operational risk is inherent in any financial activity and is of particular importance in the case of securities lending. Timely and accurate information is critical to the management of counterparty credit risks and market risks associated with securities lending transactions which can change rapidly and dramatically as a result of developments in the markets or changes in market values. Securities lending transactions entail settlements at two instances and procedures and controls need to be in place to ensure effective and timely settlements. Between settlements, sound management procedures are required to monitor daily income, counterparty credit limits, rebate rates and securities lending internal accounts relative to general ledger balances. Procedures are also required to effect the distribution of the appropriate substitute payments. Controls are needed to ensure that exposures are identified between the market value of the securities on loan and any collateral. Lenders of securities also have to closely monitor the trading activity of their portfolio managers to ensure that securities lending activities do not negatively impact the rest of the firm's investment activities.

Operational risks may be greatest when conducting securities lending in foreign markets. Many cross-border markets have not benefited from the advances in trade confirmation and clearing and settlement that exist in several jurisdictions. Therefore even the most sophisticated firms rely on manual intervention when conducting transactions in foreign markets, which results in more discrepancies and transaction failures. Significant manual intervention is still required in monitoring margin calls and interfacing with subcustodians in foreign markets that may not yet be highly automated.

Because securities lending involves a variety of complex administrative, trading, operational and accounting activities, firms rely on complex business relationships and mutual commitments from internal personnel regarding credit evaluation, loan sales, cash management and operations management. Managing these complex relationships especially at times of market volatility is critical. Internal control weakness can lead to losses from fraud, such as unauthorised positions taken by traders, from the failure to adhere to policies or simply from the assumption of risks in excess of those acceptable to the board of directors. Such weaknesses can be controlled to a great extent through division of duties and firewalls (e.g. loan negotiators not doing their own verification of receipt of collateral), management oversight, escalation procedures for approvals, restricting systems and data access and compliance, oversight and periodic testing of restrictions and controls.

4.1.6 Settlement risk

Settlement risk refers to the risk that the completion or settlement of individual transactions will not take place as expected. Two major sources of settlement risk are (a) a time-lag between the execution of the transaction and its final completion and (b) a time-lag between the completion of the two legs of the transaction (i.e. any lag between payment leg and delivery leg). As discussed previously, securities lending participants may be exposed to principal credit risk when either leg of a securities lending transaction is not conducted on a DVP or DVD basis. Credit risk may arise if any further financial activity is undertaken on the basis of "unsettled" securities lending transactions. This is the case, for example, where a borrower has previously sold a security to a third party and there is a settlement

failure on the borrow which was to be relied upon to make delivery on the sale. Settlement lags may also result in liquidity risk. The failure to receive securities, or funds, when expected may give rise to liquidity pressures.

Due to the lack of DVP and DVD settlement mechanisms available, settlement risk is heightened in cross-border securities lending transactions, where fails are not uncommon, particularly on returns. CSDs often operate in different time zones and settle securities transfers at different times throughout the day that can prevent same-day settlements. There is also the potential inability of both the borrower and the lender to receive good settlement information on returns. The following example illustrates this fact:

Once a lender in London recalls a security on loan from a borrower in Hong Kong, the borrower is contractually obligated to return the security in T+3, i.e. 72 hours. Yet due to differing time zones, a borrower in Hong Kong will actually receive notification of a Monday 10:00 a.m. recall (London standard time) on Tuesday morning (Hong Kong standard time). Therefore the borrower will assume it has until Friday morning (Hong Kong standard time) to return the security. If the borrower returns the security at the latest possible moment this will be after the close of business on Thursday in London and considered a failed trade by the lender. To prevent a buy-in in these instances global lenders are required to have London operations staff process recalls 24 hours a day.

Securities registration procedures can also adversely affect the settlement of securities lending transactions.¹⁶ When registration is a prerequisite for settlement, there are typically two different sources of delay that can result in settlement lags. First, registration delays may be a factor in markets where securities have been dematerialised and immobilised yet where there is a lengthy re-registration process. The time needed to perform registration can take up to two or three weeks in some less developed markets. Second, some jurisdictions have binding foreign ownership limits for local securities. If a non-resident lends securities to a resident, the foreigner surrenders its ownership in the registration system. The domestic borrower may then be responsible for restoring the lender's "foreign" ownership position. This may be difficult to achieve if a "foreign ownership limit" has been otherwise reached due to unrelated market activity or where there are no other foreign sellers in the market at that time. If there is a slow registration process, the foreign ownership regulations can be temporarily circumvented, yet ultimately the securities lending transaction may have to be cancelled. Moreover, slow registration on the return leg of the transaction could deprive the lender of the right to receive distributions on, or vote with respect to, securities despite the fact that the securities have been returned.

4.1.7 Custody risk

Custody risk is the risk of loss of securities held with a custodian as a result of insolvency, negligence or fraudulent action by the custodian. Custody risk is influenced by a variety of factors including the legal status of the securities, the accounting practices and safekeeping procedures employed by the custodian, the custodian's choice of subcustodians and other intermediaries, and the law governing the custody relationship. Custodian insolvency, however, should normally not by itself cause a loss for market participants as securities should be kept in an account separate from other holdings of the custodian and therefore be separable in case of bankruptcy. A loss of securities implies that some problem exists within the custodian with respect to its separation and safekeeping of securities, for example due to legal problems or unauthorised disposal of the securities by the custodian. The accounting practices and safekeeping procedures employed by a custodian and subcustodians are an important factor in determining the participants' potential exposure to risk of loss.

In securities lending transactions, custody risk arises principally under collateral arrangements. Since collateral providers are typically subject to the choice of custodian of the collateral taker they will look

¹⁶ Registration is defined as the process of listing securities ownership in the records of the issuer, which is typically performed by a CSD or intermediary agent.

to impose certain restrictions and obligations with respect to the custody of collateral. Legal agreements may limit or restrict the ability of the custodian to pledge, re-pledge, hypothecate, re-hypothecate, lend, re-lend, sell or otherwise transfer the collateral, or register it in any name other than that of the collateral provider. However, collateral providers relinquish much of the daily management of assigned collateral, including the reinvestment of any cash collateral.

Because custodians often act as agents in securities lending transactions, a related source of risk involving custodians is that of agency risk, that is the possibility that an agent will unfairly exploit a principal's confidence.¹⁷ This exploitation does not require an act of outright fraud, which can almost never be fully prevented if an agent so intends, but rather may arise when an agent interprets an ambiguous situation or duty to its own benefit. Many agent-lending agreements grant the agent the responsibility or authority to perform acts determined to be desirable, necessary or appropriate to implement and administer the securities lending programme. In the course of managing a securities lending programme, it may be ambiguous as to whether certain actions are desirable from the viewpoint of the lenders' beneficiaries or the agent's shareholders. Principals to securities lending transactions may be at risk, therefore, if they do not know or understand the terms of the agency agreement. Agents face the risk that they may be expected to compensate counterparties in situations where it is not required in their contracts in order to retain confidence in the market and the long-term viability of the franchise. Agent custodians should also be cognisant of liability that may arise due to their fiduciary responsibilities as a safe-keeper of the lendable assets. It is to the mutual benefit of principals and agents to avoid ambiguities in legal agreements.

4.2 Practices and procedures for managing risk

This section describes the key procedures typically used by participants in the securities lending markets to manage risk. It begins by describing the processes that establish the overall parameters of counterparty relationships: the approval of counterparties and the negotiation of legal agreements. It then turns to the processing of individual transactions, from trade execution to settlement procedures to managing information and internal controls. It then examines the techniques employed to mitigate counterparty risks, notably collateralisation and the reliance on agent indemnification. It concludes with specific practices for anticipating and managing failed transactions.

4.2.1 Counterparty evaluation/credit limits

Market participants typically conduct formal credit evaluations and impose counterparty credit limits vis-à-vis each counterparty prior to conducting securities lending transactions. Firms will formulate an approved list of borrowers that they will trade with. Credit reviews typically entail a formal analysis of a counterparty's financial condition where policies and procedures pre-establish the approval process. It is a common practice for counterparties to be formally reviewed by a credit group separate from the securities lending department to ensure their creditworthiness. There is some variance between market participants with respect to counterparty approval policies; some firms will lend only to those who have a formal credit rating of a certain level. Within those guidelines, they may require differing amounts and types of collateral depending on the credit rating. Other firms feel that their internal risk management systems are sufficiently sophisticated to allow them to deal with firms with lower credit ratings and use margin and position limits to contain any risk in the event of default.

A firm's credit department typically imposes a credit and concentration limit vis-à-vis each counterparty and has policies and procedures outlining the methodology for establishing these credit limits. It is common for credit limits to be approved by management or a supervisory committee external to the securities lending department to take into account other extensions of credit to the counterparty and its affiliates. Market participants vary in their techniques for assigning credit limits.

¹⁷ Agency risk extends beyond the scope of custodians and applies to any institution acting in the role of agent to securities lending transactions.

Some assign risk-adjusted credit limits; others assign notional and fractional exposure limits. The amount of credit actually applied against a limit for a given loan is often based upon a correlation between the price volatility of loaned securities and any collateral assigned. For example, in a securities-driven trade, if a counterparty seeks to borrow less liquid, more volatile securities, it will use more of its credit line.

Where netting of transactions is legally enforceable, exposures are usually measured on a net basis. Credit limits are closely monitored, ensuring that extensions of credit beyond any limits receive proper review and authorisation. Some credit limits are maintained online in the securities lending system so that when a limit is reached additional loans may not be booked. Credit limits are reviewed regularly and whenever significant events affecting counterparties occur, such as acquisitions and divestitures. Credit limits will also be reviewed as portfolio values fluctuate, especially in volatile markets. For example, an institution lending securities in the securities-driven market may lower a €50 million credit lending limit to a €750 million investment fund if decreases in the fund's market value or withdrawals reduce the fund's value to €500 million.

To mitigate the risk related to a lack of diversification of counterparties, some firms establish sub-limits by type of security or securities market (e.g. no more than 20% of the aggregate limit in a particular foreign market). Some firms spread their exposure around as broadly as possible to minimise counterparty credit risk. However, where only a few counterparties are clearly providing significant volumes or better lending spreads, firms will manage this concentration in counterparty exposure through strict maintenance of adequate collateral at all times and frequent review of the counterparty's credit quality. Some firms establish procedures to promptly reduce credit limits, stop new loans and/or begin an orderly recall of existing loans to counterparties exhibiting financial strain.

Where lending agents are assigned to manage a firm's securities lending activities, the agent will perform most, if not all, of the above credit controls. The agent may insist on selecting eligible borrowers, conducting credit reviews and setting credit limits and negotiating all loans. The principal lender, however, will periodically review the list of eligible borrowers. The principal lender may also seek annual ratification of the approved borrowers. While lending agents manage securities lending programmes on a disclosed basis, industry practice does not require agents to disclose the identity of the principal lender to the borrower for each individual transaction. Borrowers of securities instead rely on a list of eligible lenders on whose behalf the agent may be acting. Borrowers of securities typically receive monthly statements from lending agents detailing their positions vis-à-vis individual lenders. Borrowers can also receive this information upon request and can instruct lending agents not to lend from a particular client's portfolio if there is a credit concern.

4.2.2 Legal agreements/master agreements

Firms in all 16 jurisdictions surveyed use some form of legal agreement to establish the terms and conditions of securities lending transactions. In all the G10 countries, firms use master agreements to establish these terms and conditions. A master agreement sets forth the terms that apply to all or a defined subset of transactions between parties, including remedies in the event of counterparty default. Future transactions between the parties are made subject to the master agreement, typically through the use of confirmations that include economic terms and supplement the master agreement. One key benefit of using a master agreement is that it reduces the inefficiencies associated with negotiating legal and credit terms transaction by transaction. Another is that firms can dispose of collateral and/or buy in securities immediately on occurrence of an event of default.

A most important benefit of master agreements is the potential for reducing counterparty exposure on outstanding transactions through the use of close-out netting provisions. If one party becomes insolvent or otherwise defaults on its obligations, close-out netting provisions permit the non-defaulting party to accelerate and terminate all outstanding transactions and net the loans' mark-to-market values so that a single sum will be owed by, or owed to, the non-defaulting party. Close-out netting is relied on as a key risk management tool by market participants. The extent to which netting reduces counterparty credit exposures depends on the size and nature of securities lending activity. The greatest reductions arise where there is a large number of trades with a counterparty, some of

which will at any time have a positive value and others a negative value. In calculating their exposures to counterparties with whom they have netting agreements, firms recognise the effect of netting on both current and future exposure.

Master agreements are generally not used across multiple securities lending products (e.g. repo, securities loan, etc.) or across other financial products (e.g. derivative transactions). They do, however, usually include whichever offices of the counterparty are located in jurisdictions where close-out netting is enforceable. In addition to minimising credit exposures, this serves to free credit lines and reduce collateral and capital costs.

In some jurisdictions, master agreements are not widely used. In Mexico, for example, the central securities depository, INDEVAL, requests that equity lenders and borrowers sign a specific standard master agreement. There is no close-out netting, so if the lender becomes insolvent the borrower will have to give back the securities and sue the lender in order to get cash back. In other jurisdictions it is still common for transactions to be documented only by confirmations of each leg of a trade and not by legal agreements (usually referred to as undocumented buy/sells). Most market participants acknowledge that the failure to complete a master agreement can increase credit risks and jeopardise the firm's ability to close out and net obligations in the event of a counterparty's default. For this reason, when executing transactions with such counterparties, especially cross-border transactions, firms may seek to obtain the benefits of close-out netting by including specific statements in the negotiated agreement or in trade confirmations. Conversely, other market participants will only use one of the standard international master agreements and will not conduct the transactions if they are not accepted by a foreign counterparty.

More recently, regulatory factors have contributed to greater use of master agreements as the potential capital benefits of netting has gained widespread acceptance. An equally important factor has been the certainty of the enforceability in insolvency of the close-out and default provisions. While in some jurisdictions there has been no case law to test the enforceability of legal agreements,¹⁸ standard annexes to the PSA/ISMA repo agreement have been produced for a number of jurisdictions and ISMA has obtained legal opinions on the enforceability of the contract from 25 countries.

In many jurisdictions there are multiple legal agreements covering securities lending activities. For example, in Switzerland the PSA/ISMA Agreement and OSLA Agreement are used in international repo and securities loan transactions respectively while the Repos Settlement Contract and Swiss Securities Lending and Borrowing Agreement are used in domestic transactions. Firms also often choose to sign separate agreements with individual offices of a counterparty when these branches are located in countries where the enforceability of netting is in doubt. Some market participants have therefore indicated the need for a reduction in the number of legal agreements in the global marketplace. In addition to extending the scope of netting, it has been argued that this would reduce costs – including costs of obtaining legal opinions regarding the enforceability in insolvency of the close-out netting and default provisions. In the absence of any reduction in the number of legal agreements, industry groups have mounted exercises to obtain legal opinions on agreements in many jurisdictions.

4.2.3 *Transaction processing and settlement*

This section examines some of the procedures used in the market for managing the execution, confirmation and settlement of securities lending transactions. From a risk management perspective, the objective of market participants is to reduce credit, market and legal risks by ensuring that transactions are accurately recorded in internal systems, that the details of trades are agreed as soon as possible after execution with the counterparty and that the firm's settlement obligations are met when they become due. This section also examines some of the practices firms use to manage operational risk more broadly.

¹⁸ For example, securities loan agreements have never been brought to court in Germany, Hong Kong, Canada or Australia.

Many firms will look to maintain a high degree of separation of duties for trading, operations, accounting, client services, marketing, asset/liability and risk management, product development, legal services and compliance. While trading, operations, administrative and accounting functions may exist in several locations, all securities lending activity is typically managed in one location. Most firms with a global presence limit their trading activities to a handful of locations. Traders are typically responsible for ensuring all trades fall within credit limits for the counterparty and overall trading limits. In some cases, traders have access to online systems showing the availability of credit lines for counterparties; in others, they need to apply to a risk management or relationship officer prior to the execution of a trade.

Back office staff, independent of traders in the front office, typically prepare confirmations and oversee clearance and settlement processes. Securities lending clearance and settlement activity is typically integrated operationally with other securities settlement and funds activities. Broker-dealers, however, typically separate securities lending operations between matched book (conduit) transactions and proprietary (in-house) clearing transactions. The matched book is typically cleared through separate CSD clearing numbers with no commingling of customer securities. The securities lending transactions enacted within the 'house' clearing account are integrated with the clearance of customer and firm securities.

Due to a lack of centralised automated trade confirmation and clearing services in most jurisdictions, firms generally have to rely on manual intervention to match trades, mark collateral to market and monitor income distributions. This often prevents a straight-through processing environment for securities lending. With respect to settlement, firms look to employ DVP or DVD mechanisms to reduce the potential exposure to settlement risk, if they are achievable. When DVP or DVD mechanisms are not available, the collateral taker will typically require the pre-delivery of collateral to cover any credit exposure at settlement. Lenders of securities will not accept pre-delivery of collateral from borrowers without a valid trade confirmation.

To the extent that specialised securities lending facilities are utilised (e.g. clearing houses, tri-party repo) market participants are provided with automated comparison of transactions which reduces the uncertainty and inefficiency associated with manual confirmation procedures. These services also alleviate the operational burdens associated with the manual monitoring and processing of coupon payments, dividend distributions and other inter-settlement events. Participants also benefit from automated collateral substitutions and automated settlement of the close leg of securities loans and repos. Entities that provide centralised clearing may also reduce credit exposures through multilateral netting and the involvement of a high credit quality counterparty. Although clearing house members would be exposed to the clearing house itself, current exposures may be eliminated each day (or several times a day) by the clearing house collecting and paying out variation margin.

With securities lending activities being fairly complex operationally, many principals to securities lending transactions rely on custodian banks or broker-dealers with substantial clearing and custodial services to manage securities lending activities and oversee trade processing and settlement. These institutions rely on complex automated administration systems, and access to clearing houses and tri-party repo services, to reduce operational risk.

Management's ability to measure, monitor and control credit risks and market risks is critically dependent on timely and accurate data capture and reporting. For those firms for which trade data capture is an automated process, with trade details entered at the trading desk flowing automatically into risk management as well as trade processing systems, risk management systems are generally updated with trade information on the trade date, providing management with real-time reports. For those firms where capturing trade data is a manual process, requiring extraction of data from trade tickets, risk management systems may only be updated once a day, typically using data generated by end-of-day batch feeds from other systems. In these cases updated risk management reports are available to management, at most, only once per day.

Firms employ automated systems and produce internal management reports to monitor counterparty securities concentration, mark-to-market exposure and credit limits on a daily basis. Firms often rely on automated feeds from independent pricing vendors to value positions using the previous day's

closing prices or in some cases use current day prices from information providers such as Bloomberg or Reuters. Undersecured loans or borrows are reviewed and approved daily by senior management. Many firms will not lend or borrow securities that are not formally priced in the marketplace. Clients of lending agents and borrowing intermediaries are provided with various forms of reporting, both online and hard copy, that at a minimum provide monthly notification of all loan activity. Certain clients may be provided with daily updates of loan activity on a next-day basis either on hard copy or online reports.

4.2.4 Collateralisation

Collateralisation of credit and liquidity exposures, the primary protection firms have against substantial loss in the event of counterparty default, is widely practised in the securities lending markets. Firms use collateral to mitigate their credit exposures and thereby engage in more transactions than would otherwise be possible. Providing collateral can give the transferor a greater incentive to avoid imprudent behaviour (since such behaviour may result in forfeiture of the collateral) and it also protects the transferee against the residual risk.

Standard legal agreements govern the specific provisions for collateralisation and the use of collateral.¹⁹ Legal agreements will typically specify the type of collateral acceptable, margin requirements and delivery requirements, and that the borrower grants the lender a security interest in, and a lien upon, the collateral that will cease upon the return of the loaned securities from the borrower. The title to securities assigned as collateral is typically transferred to the underlying lender, which generally prevents the possible double pledging of collateral. Agreements will also provide instructions about how collateral is to be transferred.

If a borrower transfers collateral to a lender and the lender does not deliver the loaned securities, borrowers have the absolute right to the return of the collateral. Legal agreements may provide that upon reasonable notice to the lender, the borrower may (taking into account all relevant factors including industry practice, the type of collateral to be substituted and the applicable method of transfer) substitute collateral securing a loan. There will usually be provisions that substituted collateral should have a market value equal to or exceeding the agreed margin percentage of the market value of the loaned securities. It is standard practice that the lender may use or invest cash collateral at its own discretion.

The parties to a securities loan transaction specify the types of collateral that can be posted, which are broadly dictated by local market convention. In most jurisdictions, initial margin requirements are fairly standard, reflecting market conventions or dictated by accounting or capital requirement rules. This leaves limited room for negotiation between counterparties. It is less common for initial margins to be negotiated freely between counterparties on a transaction-by-transaction basis. In such cases, firms typically take into account correlations between the probability of counterparty default and the likelihood of the collateral value being impaired and set margin rates accordingly. In some cases they will impose particularly high margins. Conversely, some firms may not distinguish among the different risk levels of securities, and set fairly standard margin rates. Rather, only blue-chip securities are available for lending and since the borrowing client will be considered a good credit risk, the lender does not see the need for a great deal of dynamic monitoring of risk. The focus in these cases will be on client creditworthiness, with the view that if there are credit concerns the loan should not exist in the first place. In other countries, government authorities or exchanges mandate margin rates.

As discussed in Section 2.2, it is standard practice for lenders, of cash or securities, to require margin in addition to the value of the cash or securities lent to the borrower. It is also standard practice for lenders to have the collateral value of the underlying securities adjusted daily (marked to market) to reflect changes in market prices and to calculate exposures. Mark-to-market margining is typically a

¹⁹ The collateralisation of credit exposures in repurchase agreements is implicit to the transaction structure; as such there is no specific provision for collateral in standard repo legal agreements.

contractual feature and lenders ensure they have the right under the lending agreement to call for new or additional collateral from the borrower every day. This is typically done on a next-day basis where the market value of collateral is compared to the closing price of the loaned securities of the previous business day. Most legal agreements require borrowers to meet a collateral call by delivering cash or securities no later than the day after the call is made so that additional collateral, when added to the market value of other collateral for the loan, equals at least 100% of the market value of the loaned securities. Legal agreements will also provide that in the event that the market value of collateral is greater than the margin requirement, the borrower may, on giving notice to the lender, require the latter to return the excess collateral. Borrowers are also entitled to receive all cash distributions made on or in respect of non-cash collateral to the full extent to which they would be so entitled if collateral had not been transferred to the lender.

Disagreements over the amount of collateral owed may be difficult to resolve if both parties are unable to receive accurate information from custodians or subcustodians or if loaned securities or collateral are not regularly priced in the market and difficult to value. Lending agreements may provide that securities lending transactions to a single counterparty may be cross-collateralised by the aggregate amount collateral for all transactions (i.e. netting of collateral exposures), which may provide some protection from an under-collateralised transaction. However, many market participants have indicated that this provision is no substitute for the daily marking to market of individual transactions and prompt margin calls.

Risk management. Market participants acknowledge that, while collateral reduces credit risk, it can add to other risks such as legal, operational, liquidity and market risk. One major risk for firms is that the agreement granting the lender the right to liquidate collateral may be unenforceable. Many firms are now seeking legal opinions on enforceability both in jurisdictions where the collateral is located and in those where the counterparty is incorporated. To address operational risk, many firms are seeking to automate as far as possible the handling of collateral movements. Firms have developed internal collateral management systems, with automated links to processing and risk management systems, to handle collateral calls and to ensure counterparties deliver collateral. The use of third-party collateral management services offered by custodians and the ICSDs to manage the collateralisation process has been growing.

Collateralisation imposes additional liquidity risk on firms that have to post collateral. Swings in the value of collateral relative to loaned securities or loaned funds can result in substantial demands for additional collateral. Some firms simulate the effects of potential price moves and estimate potential demands for collateral arising from market volatility and assess their ability to meet those demands in those market conditions. Some firms diversify their securities lending portfolio, including collateral pledged for loans, so that they are not too exposed to changing conditions in a particular securities market or country. Firms may focus their activities in liquid markets to alleviate situations where a borrower has sufficient assets overall but lacks assets in a needed category to meet a margin call or a recall. A few firms try to anticipate liquidity strains by estimating collateral requirements under counterparty credit downgrades.

Collateral takers in securities lending transactions may also be exposed to liquidity pressures when faced with an unexpectedly high number of returns. These liquidity pressures will often be mitigated, however, when legal agreements provide for a margin threshold be reached before firms have to return any excess collateral. For example, legal agreements may contain a provision that collateral values must exceed 108% of the market value of loaned securities or funds before lenders have to return any excess collateral.

Accepting cash collateral may subject firms to additional exposure to market risk. Firms generally manage this exposure by maintaining a short asset liability maturity mismatch window and a short weighted average portfolio maturity, and by investing in a diversified portfolio of liquid assets of high-quality issuers. Market risk is also managed by investing in highly correlated indices.

Recently, some firms have been developing more sophisticated methods to quantify risk exposures associated with accepting cash collateral. These include modelling the historical risk-adjusted performance of cash collateral reinvestment where variability is measured through the standard

deviation of historical returns. Such models measure the market risk of the cash collateral reinvestment portfolios – that is the risk that the market value of the portfolio changes at various confidence levels as a result of changes in interest rates, foreign exchange rates, equity prices or commodity prices. One global custodian has recently introduced value-at-risk (VAR) calculations designed to give lending clients a sense of the maximum gain or loss under normal market conditions that their respective collateral pools could incur over a given time horizon at a specified confidence interval.²⁰

4.2.5 Indemnification

In some jurisdictions, securities lenders rely on a variety of indemnifications provided by their custodian agent-lenders. Indemnification is an agreement to compensate for damage or loss. Explicit indemnifications are provided solely in the securities-driven market and may vary across custodian banks.²¹

A fairly standard practice is for agent-lenders to offer indemnification against losses arising from borrower default. In borrower-default indemnifications, the agent will replace loaned securities even if there has been an adverse market shift that results in insufficient collateral being available to cover the cost of the replacement securities. Agent-lenders will cover any shortage of collateral caused by an increase in the market value of loaned securities or a decrease in the value of securities held as collateral (they will not compensate a loss from the investment of cash collateral). In these instances, the agent will typically liquidate the borrower's collateral and purchase the securities itself in the open market. Conversely, the agent-lender may provide the equivalent cash value if the security cannot be obtained. Much of the counterparty credit risk associated with securities lending has therefore been alleviated for the principal lender and assumed by the agent-lender. Most agents control this added exposure by retaining the right to determine the eligibility qualifications and selection of borrowers and by maintaining adequate collateral. They also often restrict the indemnification to a fixed percentage of the loss.

Custodians and sometimes third-party agent-lenders may also provide settlement indemnification. This is essentially a “sale/fail” policy whereby custodians provide contractual or provisional settlement for clients in instances where securities on loan are sold, and such securities are not returned on time. This form of indemnification does not require an actual counterparty default, but simply the borrower's failure to return loaned securities when due. Again, the agent may advance the proceeds of the sale to the lender's account or may provide contractual settlement on sales of securities that are on loan. Through settlement indemnities, much of the liquidity risk is alleviated for the lending client. Ultimately, however, the value of any agent indemnification will only be worth as much as the financial strength of the creditor and its underlying capital adequacy.

Although rare, custodians acting as lending agents may offer revenue, or return, guarantees to client lenders. In highly competitive markets, agents may be more inclined to offer such guarantees to gain or simply maintain clients. While this may reduce the lender's exposure to risk, it may also create an environment whereby agent-lenders assume more risk in order to assure a guaranteed return or revenue stream. Lending agents typically refrain from explicit income guarantees because revenue is

²⁰ Additionally, industry consultants have developed quantitative techniques that measure the broader range of risks associated with securities lending, and not simply those associated with cash collateral reinvestment. These techniques often segregate and quantify lending activities by their level of risk as defined in the design of the lending program. These measurements identify all the dominant risks in securities lending (e.g. borrower exposure, collateral exposure, relative reinvestment exposure) and then examine characteristics embedded in the guidelines or operating procedures of the securities lending programs to assess a client's, or an overall program's, appetite for risk. These risk measurements therefore compare performance results to risk expectations.

²¹ In addition, ex post facto indemnifications have occurred in the cash-driven securities lending market where banks have shielded clients from certain event-driven losses even where there was no contractual obligation to do so.

based on a number of factors beyond a lending agent's control such as portfolio composition, borrower demand and the short-term interest rate environment.

A more common practice, rather, is an agent guaranteeing to credit the lender for any distributions (e.g. income and dividends) on loaned securities on the day such distributions are typically made, regardless of whether the borrower fulfils its obligation to remit such distributions. Lending firms are also typically held harmless from any losses related to a custodian's negligence in the operation of the lending programme such as a failure to mark collateral to market or collect entitlements from borrowers for corporate actions and/or interest payments.

4.2.6 *Managing fails*

Failed trades are not uncommon in securities lending markets, especially on recalls in cross-border transactions, and are usually the result of operational default and settled in short order. Liquidity shortfalls and the lack of definitive settlement information are also primary sources of transaction failures. Market participants have indicated that there are various ways firms attempt to mitigate and manage fails either through anticipating unique securities borrowing situations or by taking certain steps once a securities lending transaction has failed.

While lenders may be generally unaware of the underlying motivation for a counterparty borrowing a particular security, certain lending situations can be anticipated and avoided. Loans of securities with limited floats due to a tender offer or a "short squeeze" may present greater lending risk due to the lack of liquidity of these securities. The lending of securities with limited float, however, may only cause disruptions if the amount on loan represents a significant portion of the security's typical trading volume. Firms nonetheless often monitor the amounts of a security on loan relative to the security's typical trading volume. Some lenders also protect themselves in these situations by limiting the borrowers that they will lend to. Because these securities are often in high demand, lenders can limit their lending to borrowers that have proven themselves most reliable in returning loaned securities on a timely basis and responding to requests for additional collateral in the past.

A common way to manage the overall liquidity of a lending portfolio is through the use of buffer stocks to control the proportion of stocks in the inventory that a lender is willing to lend. A lender may maintain a float of lendable securities but not lend out all the available stocks – instead maintaining a buffer that varies from stock to stock. Buffers allow fund managers to make sales while avoiding recalls of lent stock. The size of buffers is determined partly by the lender's willingness to lend and partly by the lender's own risk management policy – a higher buffer being maintained for high-volatility, potentially illiquid securities. One methodology, for example, is for the lender to loan out no more than three days' worth of the underlying security's turnover.

In the event of a lack of definitive settlement information regarding the return of a borrowed security by the due date, securities lenders often protect themselves by refraining from returning collateral and (in markets where cash is taken as collateral) by immediately lowering the rebate rate to zero. The lender can also attempt to initiate a buy-in. These efforts will continue until the sale is settled and the borrower will incur all buy-in and overdraft costs. However, if a lender's settlement information subsequently proved incorrect, and the fault was with the lender's custodian, the borrower would be compensated for these costs and the lender would typically have to pay the borrower the equivalent to the interbank overnight loan rate for erroneously holding collateral.

The decision by a lender to foreclose on the collateral (exercise a buy-in) has to be carefully evaluated as certain practical difficulties exist. Legal agreements usually give the lender the right to liquidate collateral in order to purchase the loaned securities if they are not returned by the due date. However it is probable that a lender can foreclose on collateral only if a serious event of default has already occurred such as a sustained failure to return borrowed securities or outright insolvency. Also, depending on the contract, prior notice to the borrower may be required. If a lender anticipates that a borrower is facing default and chooses to immediately recall any loans, it still runs the risk that the borrower will file for bankruptcy or be subject to an involuntary proceeding during the settlement interval. Additionally, upon bankruptcy it may take some time for the lender to buy back the lost securities and the eventual buyback costs may exceed the liquidation value of the collateral that the

lender must accept. Conversely, if a lender improperly forecloses on collateral and triggers a chain reaction in the market in which other lenders foreclose on the borrower, resulting in the borrower's financial collapse, the borrower could win a suit against the lender and be awarded significant damages.

To manage the risks associated with exercising a buy-in, lenders may protect themselves through a number of defaults contained in lending agreements. Contracts may specifically provide for foreclosure by the lender for breach of a borrower's obligation to provide timely financial information to the lender or the appropriate regulatory agencies such as: (1) failing to give notice to the lender of any material adverse change in connection with its business or financial condition; (2) failing to notify the lender of any regulatory investigation, complaint, or proceeding; (3) any breach of representation by the borrower; or (4) failing to remit substitute payments or respond to requests for additional collateral. Additionally, these risks may be mitigated through borrower-default indemnifications provided by custodian lending agents.

4.3 Summary of risk management procedures

The Working Group's interviews with market participants suggest that market practices are broadly similar across most jurisdictions. Market participants typically conduct formal credit evaluations and impose counterparty credit limits vis-à-vis counterparties prior to conducting securities lending transactions. Standard legal agreements and confirmations are typically used to document transactions. Operational risk is being addressed by automating as far as possible the processing of transactions. Collateral is overwhelmingly used to mitigate credit exposures.

Yet it is clear that market practices vary across jurisdictions, and amongst participants within jurisdictions. Collateral valuation and administration practices differ. There is greater reliance on agent indemnifications in certain jurisdictions. Uncollateralised lending occurs in some markets. And it is only in a few countries that centralised trade comparison and matching services are available. Likewise, in many instances many of the more sophisticated risk management practices are being employed only by a small number of leading market participants.

It is important for market participants to continue to develop sound practices that identify and control risks associated with securities lending. Due to the size of securities lending markets, securities lending transactions are a significant source of credit and liquidity exposures, especially between the very largest global institutions. Therefore, should one of these institutions experience financial difficulties, counterparty credit losses on securities lending transactions could in principle be a significant conduit for the transmission of financial shocks. As discussed in the final section, central banks are particularly concerned about the possibility that securities lending markets, as is the case with many other major financial markets, could give rise to systemic risk. That is, that defaults or technical failures might result in losses or liquidity pressures so severe, and that cannot be managed or contained with existing arrangements, that the liquidity and stability of key financial markets could be impaired or payment and settlement systems disrupted.

5. Implications of securities lending

This section points out the main conclusions of the report and is organised in four parts:

- The role of securities lending in the overall market.
- Implications of securities lending for market participants.
- Implications of securities lending for market infrastructure, including securities settlement systems.
- Implications of securities lending for market authorities, including central banks and securities regulators.

5.1 Role of securities lending markets

Securities lending transactions have grown very substantially in recent years. While such transactions have been important for some time in several national markets, their overall significance within the financial system has increased notably in the last decade. Today, securities lending is an integral component of nearly all active securities markets, both domestic and international.

The cash-driven market provides a means for market participants to finance securities positions at rates generally below unsecured borrowing rates and gives cash lenders access to a flexible money market instrument. The securities-driven market increases the liquidity of securities markets by providing a means for participants to borrow securities on a temporary basis, usually against cash or other collateral. This reduces the potential for failed settlements. It also facilitates investment and trading strategies that would not be possible without a liquid supply of securities available for borrowing, including “fundamental short” strategies as well as market-neutral arbitrage strategies such as cash versus futures arbitrage, convertible bond arbitrage, or dividend-related arbitrage. In addition, many market participants now borrow securities to hedge offsetting positions they have taken on through derivative instruments.

In the most active markets, securities-driven lending is no longer a specialised activity, but is widespread among many different types of market participants. It allows portfolio managers and institutional investors to earn incremental income by lending out idle securities held in custody on a collateralised basis. This activity may also increase repo market liquidity since the cash collateral for securities loans is frequently reinvested in the repo market. Securities firms and their customers depend on the ability to borrow securities to hedge risks and to arbitrage price differentials across markets. The extent of this arbitrage has an important effect in increasing the efficiency of market prices and in increasing the linkage between securities markets and other markets, such as associated futures and options markets.

The growth of securities lending is attributable in large measure to the positive effects securities lending has had on both investment activity and securities settlement arrangements. These benefits should continue to promote the development of liquid securities lending markets. Other factors may also influence the rate of growth in securities lending. For example, securities lending activity needs to be supported by an adequate and efficient legal framework and also depends critically on safe and efficient settlement arrangements. In addition, growth can be influenced significantly by the attitudes and policies of national market regulators, as well as by the approaches taken by market participants.

Overall, it is reasonable to expect that securities lending activity will become an ever more deeply embedded part of contemporary securities markets. The perceived benefits of securities lending are seen as important by most national regulators, and thus it is likely that most national and international markets will continue to see increased levels of activity. It is in this context that market authorities and market participants need to have a sound understanding of this important market segment. The following sections outline potential implications of the continuing importance of securities lending for market participants, market infrastructure and market authorities.

5.2 Implications for market participants

Market participants should continue to develop sound practices that identify and control risks associated with securities lending. As the scale and importance of securities lending activity continues to increase, it is critical that market participants ensure that their approaches to managing the associated risks keep pace. In this context, it is especially important that the managerial responsibility for and internal oversight of securities lending activities appropriately reflect their importance and risks to the firms involved. In addition, there are a number of specific areas where market participants could usefully focus on risk management improvements.

Market participants should ensure that appropriate collateral is received in exchange for loaned securities. Market participants should have written policies covering the requirement for collateral, the types and amount of collateral considered appropriate, and the methods used to value this collateral. Policies should also be in place covering the procedures for transferring collateral and should strongly

encourage the use of DVP mechanisms where relevant. If cash collateral is reinvested, market participants need to carefully assess the risks associated with these transactions, and the rights and responsibilities of each principal and intermediary associated with these transactions. If collateral is not taken in exchange for loaned securities, the lender should carefully monitor the risk of transactions in the same manner as that in other uncollateralised credit extensions.

Market participants also need to consider the possibility that market prices for loaned securities and for collateral will fluctuate. In this regard, sound risk management practice calls for daily marking to market of such positions against reliable price sources, with discrepancies in collateral values adjusted accordingly. Market participants should have in place written policies for the marking to market of positions and of collateral associated with securities lending transactions. Delays between collateral valuation, margin calls and the settlement of those margin calls should be minimised.

The use of excess collateral to protect against adverse movements in market prices can also be an important tool to help market participants mitigate this risk. Market participants should review the risks of each securities lending transaction carefully to ensure that excess collateral amounts are appropriate to the risks involved and do not simply reflect the minimum required by regulation or industry convention. Market participants are also encouraged to ensure the benefits of excess collateral and mark-to-market adjustments can be realised by both parties to a transaction.

A key issue for market participants in considering the risk management implications of securities lending is the role of leverage and the participation of highly leveraged institutions (HLIs) in securities lending markets. A recent report published by the Basel Committee on Banking Supervision has addressed the issues of leverage and HLIs directly.²² Key conclusions of this report are relevant in the context of securities lending. A general point that applies to all counterparties – not only HLIs – is that the use of collateral does not eliminate the need for market participants to undertake a thorough credit review of their counterparties. The report emphasises that in the case of HLIs this should include a review of meaningful information on the financial position and risk profile of the HLI. Moreover, market participants should improve their methodologies for measuring potential future credit exposures in addition to current credit exposures.

An important tool in assessing potential exposures associated with securities lending transactions is the use of stress testing. Stress tests should consider the potential impact of extreme movements in the value of both sides of securities lending transactions (i.e. the loaned securities and the reinvested cash collateral). In addition, stress tests should consider the details of the procedures under which variation margin may be called for on different transactions, in particular whether there are mismatches in the timing of margin flows between two related transactions. In extreme market conditions, markets for particular securities may become highly illiquid and may lead to valuation disputes; these possibilities should also be considered as part of a stress testing programme. Market participants should also consider the stresses that could be created for their positions by a large-scale recall of loaned securities. Finally, a comprehensive stress testing programme should include the development of policies and procedures that integrate the results of stress tests into the ongoing risk management procedures for securities lending transactions.

Efforts to improve the transparency of securities lending transactions could also be useful. For example, participants should aim to ensure that principal and agent relationships are clearly understood and that all risks (including credit and market risks) are appropriately disclosed to those who ultimately bear such risks. An important issue in this regard is the existence of indemnification provisions. Market participants acting as agents need to clearly specify the risks covered by any such provisions. Moreover, a lack of clarity about who will ultimately bear risks not explicitly covered by indemnification provisions can contribute to insufficient management of such risks by both parties.

²² Two related reports, *Banks' interactions with highly leveraged institutions* and *Sound practices for banks' interactions with highly leveraged institutions*, were published together by the Basel Committee on Banking Supervision in January 1999.

In regard to operational risk, participants need to ensure that they have appropriate systems in place for managing and processing securities lending transactions throughout the entire life of the transaction, including management of the relevant collateral. These systems should be capable of addressing sharp increases in volume that may accompany stressful market conditions and should be supported by backup arrangements appropriate to the scale of activity.

Prior to entering into any securities lending agreement, market participants should become familiar with the terms and conditions of documentation used to evidence securities lending transactions. This includes determining whether counterparties are acting as principal or agent and whether the transaction is prohibited or subject to restrictions or limitations under any applicable rules, regulations or investment policies. In addition, it is important for market participants to evaluate transfer methods, loan termination procedures and indemnification policies. Most transactions are governed by master agreements or incorporated forms (terms incorporated by reference rather than directly) rather than on a transaction-by-transaction basis. These documents and the trade confirmations under these agreements should be signed by all parties before entering into any transactions.

Finally, market participants should consider the risk management challenges associated with cross-border transactions. In particular, care should be taken to ensure the legal enforceability of transactions within all relevant jurisdictions. The complex operational challenges associated with cross-border transactions should also be considered, and participants should become familiar with the rules, procedures, and conventions of each market in which they are operating. In addition, market participants should be aware that differences in national market infrastructure can have significant implications for risk management.

5.3 Implications for market infrastructure

As discussed in the 1995 CPSS report on *Cross-border securities settlements*, the relationship between the development of securities lending markets and securities settlement arrangements is reciprocal. The existence of liquid markets for securities lending reduces the risks of failed settlements and promotes the efficiency of securities settlement systems. In turn, more efficient arrangements for the processing of securities lending transactions promote more liquid securities lending markets.

Securities lending transactions have several aspects that distinguish them from ordinary purchase and sale transactions. Securities lending transactions often settle on a shorter settlement cycle than outright transactions, thereby putting additional time pressure on the parties involved in processing these transactions. A second distinguishing characteristic of securities lending transactions is the fact that the transactions have both an opening and a closing leg, both of which require settlement. In addition, during the period between the opening and closing legs of the transactions, the loaned securities may generate interest or dividends that the securities borrower is contractually obligated to pay over to the securities lender. These features of securities lending transactions have a number of implications for market infrastructure.

In many markets, the processing of securities lending transactions is still heavily reliant on manually intensive procedures. As the volume of the securities lending transactions has grown, however, the need for more automated procedures for addressing the features of securities lending transactions has become apparent. In the absence of more robust procedures, errors and operational risks increase and it becomes more difficult for market participants to settle securities lending transactions on time. The scope for continued improvement in the processing of cross-border transactions is particularly great.

Because of the need for rapid settlement, market participants in a number of markets have indicated that bilateral manual trade comparison can be costly and subject to operational risks that might otherwise be reduced through automated trade comparison services. In jurisdictions with automated comparison services, market participants have indicated that trade errors are detected and corrected rapidly through standardised trade reporting requirements and that trade comparison costs are reduced. In addition, in some markets, participants have begun to use screen-based systems that permit counterparties to rapidly receive trade comparison data, confirmations, position market values and access to inventories of lendable securities. Market participants should consider the potential

efficiency and risk-reducing benefits of implementing such services in markets where they are not currently in place.

In recent years, market participants have also indicated an interest in developing centralised clearing facilities. There has been more evident interest for such facilities in repos and other cash-driven transactions rather than for securities-driven transactions since repos have been more active and standardised transactions. Through these facilities, market participants may be able to reduce the number of securities movements as well as counterparty credit risk through multilateral netting with a central counterparty of high credit quality. Moreover, in some jurisdictions, centralised clearing facilities have facilitated the development of more liquid repo markets by providing market participants with trade comparison services and the ability to trade on an anonymous basis. In considering the potential benefits of centralised clearing services for securities lending transactions, market participants should understand that, while these systems have the potential to reduce risk, they do not eliminate it. Market participants and authorities should ensure that these systems have strong risk management procedures and that they are structured so that both the clearing facility and its participants have continuing incentives to control risk. The rules and procedures of the clearing facility, in particular default rules and procedures including loss-sharing rules, should be transparent.

CSDs in several jurisdictions have begun to offer settlement services tailored to the securities lending markets. These services include automated identification and tracking mechanisms that separate securities lending activity from other market transactions. The identification and tracking mechanisms allow CSDs to make income adjustments, account for market events such as stock splits or corporate reorganisations, and provide for the redelivery of securities and collateral upon maturity of securities lending transactions. While the benefits and costs of providing such services will depend on the specific circumstances of each CSD, it is clear that CSDs will increasingly need to consider whether the growing volume of securities lending transactions raises the need for the development of specialised services.

Certain CSDs have also begun to introduce automated securities lending facilities which pool members' lendable securities for lending to other members that need the securities to satisfy their delivery obligations. These facilities are intended to reduce the risks of failed transactions, and CSDs should continue to develop policies aimed at reducing the costs and risks associated with failed transactions.

Securities lending, as well the development of CSDs and book-entry transfer systems generally, has been an important element in shortening settlement cycles. Further improvements in the infrastructure supporting securities lending are likely to support the move to shorter settlement cycles and thus reduce settlement risks associated with securities transactions. As market authorities and participants consider efforts to reduce normal settlement cycles, it will be critical to address how the market infrastructure will support shorter processing intervals for securities lending transactions. Market authorities and market participants may also wish to consider whether other improvements, such as the introduction of DVD mechanisms, could be helpful in reducing settlement risks associated with securities lending transactions.

In the cross-border context, a number of infrastructure developments are relevant to securities lending. These include the development of linkages between CSDs, including ICSDs, and the growing use of tri-party custodians. Each of these approaches offers a different mix of costs and benefits to market participants seeking to settle securities lending transactions. Looking ahead, there is likely to be continued evolution in the options available to market participants for settlement of cross-border transactions, offering the potential for increases in efficiency and benefits and challenges for risk management.

A final issue relevant to the market infrastructure for securities lending transactions is the collection of data. Few jurisdictions currently collect statistics targeted specifically at securities lending. CSDs in several jurisdictions have developed systems to distinguish securities lending activities from other market transactions and can through these systems gather statistical information on securities lending activities. Recently, market participants and industry groups in several jurisdictions have also begun to make available aggregate information on the securities lending market. CSDs, market participants and

industry groups are encouraged to continue improving their efforts to provide information on the overall state of the securities lending market.

5.4 Implications for market authorities

Market authorities, in particular central banks and securities regulators, clearly have a strong interest in securities lending. First, securities lending markets typically form part of, and are closely related to, domestic and international money markets, a key area of interest for central banks. Second, securities lending activity accounts for an increasing share of securities settlement turnover, making it important for the overseers of securities settlement systems to understand the risks arising in the securities lending markets and any threats to the smooth operation of settlement systems. Third, both central banks and securities regulators are responsible for supervising and/or regulating firms that conduct these financial transactions and therefore have an interest in the impact of securities lending activity on these firms. Fourth, since securities lending markets are of significant size, central banks and securities regulators need to understand the linkages that securities lending activity may create between markets in order to better understand the potential evolution of disruptions to financial markets. Finally, central banks themselves may participate in repo and securities lending markets and in that capacity desire to promote the safe and efficient functioning of these markets.

Central banks and securities regulators share a common goal in encouraging sound market practices and in ensuring that their own regulatory approaches support these practices. In this regard, the key implications of securities lending for market authorities can be grouped into four areas:

- Understanding the securities lending market.
- Supporting improvements in the securities lending market.
- Monitoring potential abuses associated with the securities lending market.
- Concerns about market stability.

5.4.1 *Understanding the securities lending market*

Central banks and securities regulators recognise that government regulations affect market development. For example, it is clear that regulatory changes can be one of the biggest influences on the growth and size of securities lending markets. National regulations can also affect the relative competitive positions of firms in the local or global securities lending market. Rules covering accounting treatment and financial reporting, such as whether a transaction is accounted for as a single transaction or as a separate purchase and sale, can also have an impact on market development and growth.

In this environment, it is critical that market authorities seek to develop a sophisticated understanding of how the regulatory environment in their jurisdiction shapes the markets for securities borrowing and lending. In evaluating how prospective regulatory changes might affect securities markets, authorities should include consideration of securities borrowing and lending activity. Authorities should also consider the possible response of market participants to proposed regulations to ensure that the overall result will not be counterproductive (e.g. by driving market participants offshore or into other, possibly more risky activities).

It might also be useful to review the appropriateness of information currently available on the securities lending markets so as to better understand these transactions.

5.4.2 *Supporting improvements in the securities lending market*

Authorities should seek to develop policies that support and encourage safe and efficient market practices. Consultation with market participants should be viewed as a key step in the development of these policies. Sound policies can be particularly important in four areas:

1. the legal underpinnings of securities lending activity;
2. the accounting and capital treatment of securities lending transactions;
3. the market infrastructure and settlement arrangements for securities lending; and
4. policies related to the risk management of securities lending activity.

Market participants and regulatory authorities should take steps to reduce legal uncertainty about the enforceability of securities lending transactions and particularly collateral arrangements. In some jurisdictions, this may require legislation. The use of standard legal agreements can reduce risk and provide greater legal certainty to participants.

In regard to the accounting and capital treatment of securities lending transactions, market authorities should seek to develop policies that provide for clarity and comparability of treatment. In the short run, it will probably not be possible to reconcile all the different national accounting and capital frameworks for securities lending transactions. Nevertheless, in the longer run, authorities should consider the advantages that a more unified approach could provide in promoting disclosures that are more easily understood across markets and in ensuring that incentives do not arise for transactions driven solely by regulatory differences across jurisdictions.

Policies adopted by market authorities can have a significant role in shaping the development of market infrastructure, including securities settlement systems. Authorities should consider the need for these systems to promote sound risk management by market participants and to protect the integrity of the systems themselves. In particular, market authorities should make the achievement of DVP settlement mechanisms a critical policy goal.

In the area of risk management, securities regulators and central banks should promote efforts by market participants to improve market practices, if necessary by implementing appropriate policies. As described earlier in the report, market participants have begun to apply sophisticated risk measurement methods (e.g. quantitative models) to securities lending transactions. While there is still considerable debate on the merits of particular methods and models, market authorities should encourage further work aimed at improving these risk measurement tools, particularly in the context of stressful market conditions.

5.4.3 *Monitoring potential abuses associated with the securities lending market*

As with most types of financial market transactions, securities lending can be subject to abusive practices or be used by some market participants to advance inappropriate or disruptive objectives. Because of the key role played by securities-driven lending in modern securities markets, it is important for market authorities to develop a thorough understanding of this activity in order to develop a balanced assessment of the approaches that can be used to address concerns over the possible abuse of securities lending.

One concern that is sometimes raised in the context of securities-driven lending is the potential for market manipulation. Some have argued, for example, that fundamental short selling activity has the potential to excessively influence the level of market prices, while others have taken a view that this is not a cause for concern. Other instances of potential market manipulation might include cases where investors holding short positions are “squeezed” and cannot obtain the securities needed to unwind their positions because some market participants purposely withhold securities from the market. National market regulators have adopted varied approaches to reducing the potential for manipulative practices, reflecting differences both in the structures of their markets and in what they deem to constitute market manipulation.

A second concern sometimes associated with securities lending activity is the potential for securities lending to facilitate tax avoidance, for example if jurisdictions impose taxes that have differential impacts on different classes of securities holders (e.g. foreign vs. domestic holders). Although this report is not focused on such issues, it is clear that national authorities must address such concerns in the manner that is appropriate for their jurisdiction. Consideration of this issue should be based on a sound understanding of the underlying market activity by the relevant authorities. Most jurisdictions where this has been an issue have found it possible to accommodate both a developed securities lending market and measures that limit tax avoidance.

5.4.4 *Concerns about market stability and systemic risk*

A final question that market authorities face in connection with securities lending is assessing the potential for securities lending transactions to affect market stability or contribute to systemic risk. Several points can be made in this regard. First, securities lending transactions can play an important role in facilitating the ability of market participants to take on leverage, although they are not unique in this respect. Securities lending can also create channels through which market shocks may flow from the securities markets to money markets and vice versa. For example, during periods of stress in securities markets, a large amount of loaned securities may be recalled. This could in turn lead to the unwinding of transactions involving the reinvestment of the associated collateral, thereby affecting other markets. In addition, margin calls related to securities lending transactions may create liquidity pressures for market participants, leading to attempts to unwind large securities positions in order to raise funds to meet the margin calls.

On the other hand, to the extent that securities lending increases the overall liquidity of securities markets, it can reduce the chance that any given shock will be systemic in nature. Thus, while in principle securities lending transactions could be a significant conduit for the transmission of financial shocks during periods of stress, in practice it is difficult to assess the overall effect of securities lending on market stability.

From a practical perspective, this reinforces the need for market authorities to develop their understanding of securities lending markets to better understand the evolution of potential threats to financial market stability. Securities lending markets serve to link securities markets, money markets and derivatives markets in various ways, so that a complete understanding of how market disruptions could evolve requires an appreciation of the workings of the securities lending markets and of these linkages. That is, when the condition of a major market participant comes under stress, it is natural for authorities to consider the role of that participant in foreign exchange markets, money markets, securities markets and derivatives markets. Given the size of securities lending markets today, it is important that authorities consider the impact that a disruption could have on these markets as well.

5.5 *Final remarks*

Securities lending transactions have become and are likely to remain an important element of modern securities markets. This development has a number of specific implications for market participants, for securities market infrastructure, and for market authorities, including central banks and securities regulators. The common theme connecting all of these various implications is the need for a clear understanding and identification of the risks and risk management approaches associated with securities lending.

Annex 1

Glossary

Agent: an entity, such as a fund manager or a custodian, that undertakes a securities loan and negotiates the terms with the borrower on behalf of a customer-owner.

Arbitrage: profiting from a difference in price when the same security, currency or commodity is traded on two or more markets.

Back-to-back transaction: a chain of securities transactions among three or more counterparties involving the purchase and sale of a single security, for settlement on a single date. The simplest back-to-back trade is a pair of transactions in which one party agrees to purchase securities from a second party and then agrees to sell them to a third party.

Beneficial ownership/interest: entitlement to receive some or all of the benefits of ownership of a security or financial instrument (e.g. income, stock splits, power to transfer). Beneficial ownership is usually distinguished from “legal ownership” of a security or financial instrument.

Book-entry system: an accounting system that permits the electronic transfer of securities without the physical movement of certificates.

Broker-dealer: a person or firm sometimes acting as broker and sometimes as principal intermediary in securities transactions. A broker is a firm that communicates bid and ask levels to potential principals and otherwise arranges transactions as agent for a fee, without acting as counterparty in the transactions.

Buy-in: a purchase of securities in the open market by the lender, where the borrower is not able to deliver the securities to the lender in accordance with the terms of the transaction (e.g. on the settlement date). All costs are borne by the borrower in this case.

Cash deposit risk: credit risk resulting from cash deposit. See credit risk.

Cash-driven securities lending transactions: transactions motivated by the wish to borrow/invest a cash amount through a repo (or loan) of securities.

Central securities depository (CSD): an institution for holding securities, which enables securities transactions to be processed by means of book entries. Physical securities may be immobilised by the depository or securities may be dematerialised (so that they exist only as electronic documents).

Clearance (or clearing): the term “clearance” or “clearing” has two meanings in the securities markets. It may mean the process of calculating the mutual obligations of market participants, usually on a net basis, for the exchange of securities and money. It may also signify the process of transferring securities on the settlement date, and in this sense the term “clearing system” is sometimes used to refer to securities settlement systems.

Clearing house: a department of an exchange or a separate legal entity that provides a range of services related to the clearance and settlement of trades and the management of risks associated with the resulting contracts. A clearing house is often central counterparty to all trades to be settled through the clearing house, that is, the buyer to every seller and the seller to every buyer.

Close-out netting: an arrangement to settle all existing obligations to and claims on a counterparty by one single net payment, immediately upon the occurrence of a defined event of default.

Closing (or back) leg: second leg of a pair of transactions in the same securities, i.e. a securities lending transaction – one for a near value date, the other for a value date further into the future. See opening (or front) leg.

Collateral: an asset or third-party commitment that is accepted by the collateral taker to secure an obligation of the collateral provider. Collateral arrangements may take different legal forms; collateral may be obtained using the method of title transfer or pledge.

Combination of an outright sale with put and call option: a derivative financial arrangement that has a similar economic effect to a securities lending transaction. In this arrangement, a dealer simultaneously (1) sells shares outright to a cash investor, receiving market value, (2) purchases OTC at-the-money call options from the cash investor giving the dealer the right to buy the shares at a specified date at the original price, and (3) sells to the cash investor OTC at-the-money put options that give the cash investor the right to sell the shares at the original price. This results in the dealer having a synthetic long position of the shares, retaining any positive or negative return on the shares, while the cash investor is hedged against a loss on the value of the shares, but must also pay away any gain to the dealer. The options are cash-settled at expiration. An option pricing model will produce premiums for the put and the call which net out to a predetermined financing cost.

Confirmation: the procedure for verifying trade details with a counterparty. This is generally done by exchanging via fax or mail a document (i.e. a confirmation) identifying the trade details and any governing legal documentation and verifying the accuracy of the information provided by the counterparty (i.e. matching).

Contract for difference (CFD): a financial contract in which the difference between the agreed fixed price of an asset and its prevailing market price is periodically credited to the counterparty in the money. Since there is no transfer of principal, a CFD covers hedging or speculative needs.

Counterparty credit limits: limits set by a trading party to restrict the largest amount of its credit exposures to different counterparties.

Credit (or Counterparty) risk: the risk that a counterparty will not settle an obligation for full value, either when due or at any time thereafter. Credit risk includes replacement cost risk, principal risk and cash deposit risk.

Custodian: an entity, often a bank, that safekeeps and administers securities for its customers and that may provide various other services, including clearance and settlement, cash management, foreign exchange and securities lending.

Custody risk: the risk of loss of securities held in custody occasioned by the insolvency, negligence or fraudulent action of the custodian or of a subcustodian.

Default: failure to complete a funds or securities transfer according to its terms for reasons that are not technical or temporary, usually as a result of bankruptcy. Default is usually distinguished from a “fail”.

Delivery versus delivery (DVD): a link between two securities transfer (settlement) systems that ensures that a delivery occurs if, and only if, another delivery occurs and vice versa.

Delivery by value (DBV): a mechanism in some settlement systems to assist a participant to borrow money from or lend money to another participant against collateral held in the system. The system will select and deliver securities (based on the preset specifications of the giver and the taker) to the appropriate party and arrange that equivalent securities be returned the following business day.

Delivery versus payment (DVP): a link between a securities transfer system and a funds transfer system that ensures that delivery occurs if, and only if, payment occurs.

Dematerialisation: the elimination of physical certificates or documents of title which represent ownership of securities so that securities exist only as accounting records.

Derivative: a financial contract the value of which depends on the value of one or more underlying reference assets, rates or indices.

Event of default: an event stipulated in an agreement as constituting a default. Generally, the occurrence of a failure to pay or deliver on the due date, breach of agreement and insolvency are events of default.

Equity swap: a swap which involves an exchange of return on a recognised stock index or a specified basket of individual stocks for a fixed or floating rate of interest.

Fail (or failed transaction): a failure to settle a securities transaction on the contractual settlement date, usually because of technical or temporary difficulties. Fail is usually distinguished from “default.”

Free-of-payment delivery: delivery of securities with no corresponding payment of funds.

General collateral: securities that satisfy the general requirements of a lender of cash to collateralise its cash lending. General collateral comprises securities which are not in particular demand in the market; categories of general collateral are usually defined by market convention. See special (collateral).

Global custodian: a custodian that provides its customers with custody services in respect of securities traded and settled not only in the country in which the custodian is located but also in numerous other countries throughout the world.

Haircut: a percentage subtracted from the market value of a security to give its value when used as collateral. The haircut is intended to protect a lender of funds or securities from losses owing to declines in collateral values.

Hedge fund: a private investment fund, often leveraged, and often engaging in active trading strategies (including arbitrage). Hedge funds are typically subject to limited regulatory oversight.

Indemnification: an agreement to compensate for damage or loss. Custodians sometimes offer it to lending customers in a variety of forms.

International central securities depository (ICSD): a central securities depository that settles trades in international securities and in various domestic securities, usually through direct or indirect (through local agents) links to local CSDs.

Legal ownership: recognition in law as the owner of a security or financial instrument. It is usually represented by holding “legal title” and sometimes distinguished from beneficial ownership/interest. See legal title and beneficial ownership.

Legal risk: the risk of loss because of the unexpected application of a law or regulation or because a contract cannot be enforced.

Legal title: one recognisable or enforceable in law or one which is complete and perfect as regards the apparent right of ownership, and possession, which may carry no beneficial interest.

Liquidity risk: the risk that a counterparty will not settle an obligation for full value when due, but on some unspecified date thereafter.

Long position: a condition that the buyer or holder of securities owns more securities than it contracts to deliver. See short sale.

Manufactured payment: an equivalent payment made by the borrower of securities to the lender in lieu of actual dividends or other income earned on the securities (net of any applicable taxes), which the lender would have received if it had not lent the securities.

Margin: the amount or percentage by which the collateral value exceeds the value of securities (funds) on loan (e.g. 2%, 5%, etc). It sometimes refers to the total value of the collateral as a percentage of the loan value (e.g. 102%, 105%, etc). Margin serves to reduce replacement cost exposures resulting from changes in market prices. Initial margin is deposited at the start of the transaction. On the other hand, variation margin is called to deposit following the revaluation, through marking to market, of securities or financial instruments that are subject of unsettled transactions.

Margin call: a demand for additional funds or collateral, following the marking to market of a securities lending transaction, if the market value of underlying collateral falls below a certain level relative to the loaned asset. Similarly, if the value of the underlying collateral assets, following their revaluation, were to exceed the agreed margin, the return of collateral may be required.

Market risk: the risk of losses in on- and off-balance sheet positions arising from movements in market prices.

Marking to market: the practice of revaluing securities and financial instruments using current market prices. In some cases unsettled contracts to purchase or sell securities are marked to market and the counterparty with an as yet unrealised loss on the contract is required to transfer funds or securities equal to the value of the loss to the other counterparty.

Master agreement: an agreement that sets forth the standard terms and conditions applicable to all or a defined subset of transactions that the parties may enter into from time to time, including the terms and conditions for close-out netting.

Matched book: portfolio of assets and portfolio of liabilities having equal maturities. The term is used most often in reference to money market instruments and money market liabilities. In reference to securities lending, this entails borrowing securities and then relending the same securities for an equivalent period for the purpose of borrowing and lending money at a locked in rate. In contrast, an unmatched book refers to borrowing and lending of the same securities for different maturities to take a short or long interest rate position.

Matching (or comparison): the process for comparing the trade or settlement details provided by counterparties to ensure that they agree with respect to the terms of the transaction.

Net settlement: a settlement in which a number of transactions between or among counterparties are settled on a net basis.

Onlend: to borrow a security from one party and then lend the same security to another party.

Opening (or front) leg: first leg of a pair of transactions in the same securities, i.e. a securities lending transaction – one for a near value date, the other for a value date further into the future. See closing (back) leg.

Open transactions: transactions with no fixed maturity date, with the possibility of terminating the transaction or refixing its terms or substituting collateral daily.

Operational risk: the risk of loss because of human error or a breakdown of some component of the hardware, software or communications systems that are crucial to trading, risk monitoring or settlement.

Over-the-counter (OTC): a method of trading that does not involve an exchange. In the over-the-counter markets, participants trade directly, sometimes through brokers, with each other, typically by telephone or computer links.

Pledge: a delivery of property to secure the performance of an obligation owed by one party (debtor/pledgor) to another (secured party). A pledge creates a security interest (lien) in the property so delivered. See security interest.

Prime brokerage: the provision by firms (e.g. large securities houses) of credit, clearing, securities lending and other services to clients (typically hedge funds).

Principal: a party to a transaction that acts on its own behalf. In acting as a principal, a firm is buying/selling (or lending/borrowing) from its own account for position and risk, expecting to make a profit. A lender institution offering customers' securities on an undisclosed basis may also be considered to be acting as principal.

Principal risk: the risk that the seller of a security delivers a security but does not receive payment or that the buyer of a security makes payment but does not receive delivery. In this event, the full principal value of the securities or funds transferred is at risk.

Property interest: a generic term that refers to the exclusive right or interest of possessing, enjoying and disposing of a specific property.

Proprietary (trading): trading in securities or derivatives for the account of a firm itself, rather than on behalf of clients.

Real-time gross settlement (RTGS): the continuous (real-time) settlement of funds or securities transfers individually on an order-by-order basis (without netting).

Rebate: the interest rate that a securities lender pays the borrower on cash collateral. This will normally be a below-market rate to reflect the lending fee.

Recall: a demand by a securities lender for the return of securities from the borrower where they are lent on an open transaction.

Registration: the listing of ownership of securities in the records of the issuer or its transfer agent/registrar.

Replacement cost risk: the risk that a counterparty to an outstanding transaction for completion at a future date will fail to perform on the settlement date. The resulting exposure is the cost of replacing, at current market prices, the original transaction. See credit risk.

Repricing/revaluation: the act of marking to market.

Repurchase agreement (repo): a contract with a counterparty to sell and subsequently repurchase securities at a specified date and price.

Reverse repurchase agreement (reverse repo): a contract with a counterparty to buy and subsequently resell securities at a specified date and price, the mirror image of a repo.

Repo rate: the return earned on a repo transaction expressed as an interest rate on the cash side of the transaction.

Rolling settlement: a situation in which settlement of securities transactions takes place each day, the settlement of an individual transaction taking place a given number of days after the deal has been struck. This is in contrast to a situation in which settlement takes place only on certain days – for example, once a week or once a month – and the settlement of an individual transaction takes place on the next settlement day (or sometimes the next but one settlement day) following the day the deal is struck.

Screen-based trading: trading conducted through a network of electronic terminals.

Securities-driven securities lending transactions: transactions whose motivation lies in borrowing/lending specific securities via a repo or securities loan. See cash-driven securities lending transactions (repos).

Securities loan: a loan of specific securities, usually against collateral (cash or other securities).

Securities settlement system (SSS): a system in which the settlement of securities takes place.

Security interest: a form of interest in property that provides that the property may be sold on default in order to satisfy the obligation covered by the security interest.

Sell-buybacks (or buy-sellbacks): transactions that have the same economic effect and intent as a repurchase agreement and which consist of two distinct simultaneous purchase and sale transactions for different value dates – one for immediate settlement and the other for forward settlement. Typically sell-buybacks do not allow for marking to market and margin calls.

Settlement: the completion of a transaction, wherein the seller transfers securities or financial instruments to the buyer and the buyer transfers money to the seller. A settlement may be final or provisional.

Settlement interval: the amount of time that elapses between the trade date (T) and the settlement date typically measured relative to the trade date, e.g. if three days elapse, the settlement interval is T+3.

Settlement risk: general term used to designate the risk that settlement in a transfer system will not take place as expected. This risk may comprise both credit and liquidity risk.

Short sale (or short position): a sale of securities which the seller does not own and thus must be covered by the time of delivery; a technique used (1) to take advantage of an anticipated decline in the price or (2) to protect a profit in a long position.

Special (collateral): securities that, for any reason, are highly sought after in the market by borrowers. Repo rates for these specific securities tend to be higher than the prevailing repo rate for general collateral. See general collateral.

Stamp duty: a tax in the form of the cost of stamps which are required to be affixed to legal documents such as certificates, receipts and the like.

Substitution: recalling the securities lent from a borrower and replacing them with other securities of equivalent market value during the life of the lending.

Systemic risk: the risk that the inability of one institution to meet its obligations when due will cause other institutions to be unable to meet their obligations when due.

Term transactions: transactions with a fixed end or maturity date.

Title transfer: conveyance of the ownership interest in property from a counterparty to another. Title transfer is used as one method of collateralisation. The title transfer method employs an outright transfer of the ownership interest in property serving as collateral.

Total return swap: an OTC swap with a fixed maturity, in which a dealer agrees to receive the total return on the shares of stock sold to the cash investor, counterparty of the swap, and in exchange to pay a floating rate of interest for the maturity to the counterparty. Payment to the cash investor at the termination of the swap is therefore the floating rate of interest plus any fall in the share price or minus any rise in the share price; on the other hand the cash investor sells the shares to get back his investment in the market. The end result of this arrangement is that the dealer borrowed cash at the floating rate for a set period of time, using his equity position as collateral. The total return swap is combined with an outright sale of stock in this way where the dealer is looking to finance an equity position and functions economically similarly to securities lending.

Tri-party repo: repo in which bonds and cash are delivered by the trading counterparty to an independent custodian bank, clearing house or securities depository that is responsible for ensuring the maintenance of adequate collateral value during the life of the transaction.

Withholding tax: a tax on income deducted at source, which a paying agent is legally obliged to deduct from its payments of interest on deposits, securities or similar financial instruments.

Annex 2

IOSCO/CPSS questionnaire on securities lending activities

Background and overview

The Technical Committee of the International Organisation of Securities Commissions (IOSCO) and the G10 Central Bank Committee on Payment and Settlement Systems (CPSS) are working together on a project to develop a clearer understanding of the development of securities lending and its implications for securities regulators and central banks, in particular its implications for securities clearance and settlement systems.

A joint working group of the two committees is taking this project forward, and the members of this working group are planning to conduct a series of interviews with key market participants during the spring of 1998 to assist in their work. These interviews will be based on the attached survey questionnaire, with the goal of drawing on the knowledge and expertise of market participants in helping the working group better understand the major aspects of securities lending.

For the purposes of this project, “securities lending” is being defined broadly to include a range of transactions including loans of securities without collateral, loans of securities against collateral, buy-sell-back transactions, as well as repurchase transactions.

This work is an extension of earlier work by both IOSCO and the CPSS to understand the risks associated with securities settlements, including the potential for settlement arrangements to form a source of systemic weakness during episodes of financial stress. To better evaluate the importance of risks – including operational risks – associated with securities lending, it is also important to understand the market context in which this activity occurs.

It is further hoped that this project will provide insight to the members of the CPSS and IOSCO in regard to the market benefits of securities lending, risk management procedures for market participants involved in securities lending, and the effects of the legal and regulatory environment on the facilitation of securities lending activity.

The members of the working group from each jurisdiction will conduct interviews on a one-on-one basis with a variety of market participants in their jurisdiction, including custodian banks, securities dealers, and institutional investors. Specialised discussions with other important intermediaries in individual markets (e.g. depositories) will supplement these interviews.

Information provided to working group members in connection with these interviews will be treated as confidential and will not be released outside of the working group in a manner that would associate the information with particular firms. Working group members will write up the results of each interview and provide these write-ups to the interviewed firms for comment before submitting the response to the other members of the working group. Firms may also wish to shield their identity from all members of the working group except those conducting the interviews in their jurisdiction.

Interview questions

Instructions

This questionnaire asks a number of questions on different aspects of the securities lending market. Many of the questions may have different answers for different segments of the securities lending market (e.g. government securities vs. equities). Respondents should indicate whether their responses

apply generally to the securities lending markets in which they are involved, or whether the responses apply only to specific market segments. If feasible, respondents may wish to provide different responses for different market segments (e.g. US government and agency securities, Japanese equities). In general, however, respondents are not expected to provide more than one complete response.

That is, the interview need not cover more than one market segment. However, it would be helpful if the market segment addressed can be defined as precisely as possible, including for example the types of securities included, as well as whether it covers lending of these securities in all trading locations or whether it is specific to particular trading locations (e.g. New York, London, other).

In some cases, responses to the questions below may be implicit in industry standard master agreements. In such cases, it would be appropriate to simply make reference to this fact and to provide a copy of the master agreement during the interview.

I. Description of respondent

- (a) What type of organisation is your institution (e.g. commercial bank, securities firm, insurance company, investment fund, pension fund, etc.)?
- (b) What departments or subsidiaries of the organisation undertake securities lending activity?
- (c) In what capacity does your organisation participate in securities lending activity (lender as principal, lender as agent, borrower as principal, borrower as agent, clearinghouse, broker, service provider, other)?
- (d) From what geographic locations does your organisation undertake securities lending activity?
- (e) To what types of securities and/or transaction types will the responses to the questions below apply?
- (f) For what geographic locations will the responses to the questions below apply?

II. Basic market information

Please respond to the following questions with respect to the types of securities or transactions (i.e. market segment) identified in section I.E. above:

- (a) What are the daily average amounts of outstanding securities loans over the last month (including Repos and buy-sell-backs) for your organisation in this market segment on a gross basis (i.e. please indicate loaned and borrowed amounts separately)? Please indicate whether these amounts are as agent or as principal.
- (b) Please estimate the daily average aggregate amount of outstanding securities loans (including Repos and buy-sell-backs) in this market segment over the last month.
- (c) Please estimate the proportion of securities lending in this market segment undertaken by the following types of market participants as principal: insurance companies, pension funds, mutual funds, other institutional investors, central banks, securities dealers, hedge funds, banks, other.
- (d) Please estimate the proportion of securities borrowing in this market segment undertaken by the following types of market participants as principal: securities dealers, mutual funds, hedge funds, banks, other.
- (e) Please answer one of the following two questions:
 1. If the market segment covered relates to securities that are domestic to the geographic trading locations covered (e.g. US government securities in New York), please estimate

the proportion of borrowing and lending activity by residents of this jurisdiction relative to non-residents.

2. If the market segment covered relates to securities that are issued outside of the geographic trading locations covered (e.g. Japanese government securities in London), please estimate the proportion of borrowing and lending activity by residents of this trading location relative to non-residents.
- (f) Please estimate the importance of the following motivations for lending securities in this market segment: income, financing, hedging, other.
 - (g) Please estimate the importance of the following motivations for borrowing securities in this market segment: avoiding settlement fails, financial arbitrage strategies, tax-related arbitrage strategies, hedging, naked short positioning, secured cash lending, other.
 - (h) Please estimate the current annual growth rate of securities lending activity in this market segment. What do you expect the average growth rate to be over the next three years?

III. Transaction structures and legal arrangements

Please respond to the following questions with respect to the types of securities or transactions (i.e. market segment) identified in section I.E. above:

- (a) Please indicate the relative importance of the main transaction structures for securities lending (securities loan, repurchase agreement, buy-sellback).
- (b) For each transaction type, please describe the associated legal documentation (standard master agreement, tailored master agreement, other written contract, oral agreement, none).
- (c) For each transaction type, please indicate whether the legal title to the underlying security is transferred. What law governs the transaction?
- (d) For each transaction type, what is the average size and range of sizes of the principal amounts of the securities transferred?
- (e) For each transaction type, what is the average duration and range of durations of typical transactions (overnight, 1-7 days, 7-30 days, 30-90 days, over 90 days)?
- (f) For each transaction type, what proportion of transactions are open-ended vs. specific term transactions?
- (g) For each transaction type, what proportion of transactions are forward transactions?
- (h) For each transaction type, please describe how lenders are compensated (loan fee rate, rebate, repo rate)?
- (i) Please describe the typical compensation and the major factors that affect compensation (type of security, term of transaction, type of counterparty, counterparty credit quality).
- (j) For each transaction type, please describe how the transaction would be recorded on the lender and the borrower's balance sheets.
- (k) For each transaction type, is the transaction a taxable event? Does the transaction have tax consequences for the underlying security (e.g. withholding tax)? To what extent are tax laws neutral to borrower and lender?

IV. Role of intermediaries

Please respond to the following questions with respect to the types of securities or transactions (i.e. market segment) identified in section I.E. above:

- (a) Does a central securities depository (CSD) facilitate securities lending?
 1. Please estimate its relative importance as a share of the overall market.
 2. Have securities lending facilities at the CSD reduced the proportion of fails? If so, by how much?
 3. Have securities lending facilities at the CSD facilitated reductions in the length of the settlement cycle? If so, by how much?
- (b) Does a clearinghouse or clearing corporation facilitate securities lending?
 1. Please estimate its relative importance as a share of the overall market.
 2. Does the clearinghouse or clearing corporation do any of the following:
 - Act as a principal or an agent in securities lending transactions?
 - Provide trade matching or comparison services for securities lending transactions?
 - Provide trade netting services for securities lending transactions?
 - Provide guarantees or indemnification to counterparties in securities lending transactions? If so, of what type (a guarantee to return the securities, a guarantee to protect against market risk or cash investment risk, other)?
 3. What risk management measures does the clearing corporation have in place regarding securities lending transactions? (margin requirements, participant limits, clearing fund, other)
- (c) Do custodians facilitate securities lending?
 1. Please estimate their relative importance as a share of the overall market.
 2. Do custodians act as principals or as agents for lending transactions? If agents, what information do the principals have about the identity of their counterparties?
 3. What related services do custodians provide (valuation, administration, investment of collateral, tri-party services, other)?
 4. Do custodians provide guarantees or indemnification to counterparties in securities lending transactions? If so, of what type (a guarantee to return the securities, guarantees to protect against market risk, cash investment risk, other)?
- (d) How are securities lending transactions arranged (direct dealing, voice-brokered, electronic broking service)?
 1. Is the market blind-brokered or fully-disclosed? If blind, when does name give-up occur?
 2. At any point are inter-dealer brokers the effective counterparty to the transaction?

V. Settlement procedures

Please respond to the following questions with respect to the types of securities or transactions (i.e. market segment) identified in section I.E. above:

- (a) Please briefly describe the major elements of the systems used to transfer securities or securities ownership in this market segment (e.g. book-entry depository, registration system, other).
- (b) How is the transfer of a loaned security executed? Does the transfer of the loaned security typically occur over accounts held at the CSD or over accounts held with custodians?
- (c) Are securities in this market segment registered? If so, is the transfer of a loaned security reflected on the registration system?
- (d) What is the convention for the settlement of a securities lending transaction (T+0, T+1, etc.)?

- (e) Does settlement of lending transactions typically occur on a shorter cycle than settlement of purchase transactions?
- (f) At what time of day does the transfer of the loaned securities typically occur? At what time of day does the transfer of the associated collateral, if any, typically occur?
- (g) At what point are participants notified that each leg of a securities lending transaction has occurred? How are they notified?
- (h) Does the transfer of collateral in conjunction with the securities loan occur on a DVP (delivery vs. payment) or DVD (delivery vs. delivery) basis or does it move free? Are the same or similar procedures in place for the return leg?
- (i) In the case of automated lending facilities, how are participants notified that their securities have been loaned or that securities have been borrowed on their behalf?
- (j) To what extent are netting arrangements utilised before settlement of transactions and who provides these services?

VI. Collateral management and administration

Please respond to the following questions with respect to the types of securities or transactions (e.g. market segment) identified in section I.E. above:

- (a) What types of collateral are pledged against loans of securities (cash, other securities, letter of credit, guarantee, other, none)?
- (b) Does the borrower of the securities always provide collateral or are there cases in which an intermediary provides collateral to the lender? If the latter, how does this affect the risks faced by the parties to the transaction?
- (c) What factors determine the type of collateral used for a particular transaction (convention, type of security being loaned, type of counterparty, regulatory requirement, availability of collateral, other)?
- (d) What is typically done with the collateral (held at a custodian, reinvested, lent to others, other)?
 1. Is cash collateral reinvested? If so, how (repo, commercial paper, other money market instruments, money market mutual fund, bank obligations, other)?
 2. What factors affect the choice of reinvestment vehicle for cash collateral (expected return, market risk, features of the security loaned, regulatory rules, client guidelines, other)?
 3. Does the provider of the collateral have any rights with respect to how the securities lender or their agent may reinvest it?
- (e) Please describe the typical size of and range of haircuts or margins applied to different types of collateral.
- (f) What are the major factors affecting the size of these haircuts or margins (type of collateral, credit quality of counterparty, term of transaction, existence of daily margining, regulatory requirements, other)?
- (g) How frequently is the collateral revalued on a mark-to-market basis (Daily, intraday, less than daily, never)?
- (h) Is mark-to-market margining a contractual feature of transactions lasting beyond one day? (always, in most cases, seldom, never)?
- (i) How frequently is the mark-to-market value of the loaned security compared to the mark-to-market value of the collateral?

- (j) Do custodians credit customer accounts prior to final settlement in the relevant systems? In particular, do custodians allow irrevocable transfer of cash collateral prior to the final receipt of that collateral?
- (k) What control or controls exist to prevent the possible double-pledging of collateral?
- (l) Do depositories, clearinghouses or clearing corporations provide collateral management services for the securities loans that they facilitate?

VII. Risk management

Please respond to the following questions with respect to the types of securities or transactions (e.g. market segment) identified in section I.E. above:

- (a) Custody risk
 1. Do borrowers of securities re-lend or re-pledge the borrowed securities? If so, what happens if the second-level borrower defaults while in possession of the security?
 2. Do custodians guarantee return of the security or provide indemnification to the lenders? If so, what events are covered by these protections?
 3. To what extent do custodians employ subcustodians (e.g. for foreign securities)? Does the use of subcustodians have any implications for securities lending activity?
 4. How are dividend and interest payments and corporate actions such as voting or takeover offers associated with the security handled for a security on loan?
- (b) Settlement, market, and liquidity risk
 1. What risk measurement or risk management procedures are used to monitor and/or limit risks stemming from securities lending activity (DVP or DVD settlement procedures, mark-to-market valuation of securities and collateral, daily margining, collateral haircuts, monitoring of counterparties, other)?
 2. Are there risk measurement or risk management procedures specific to transactions involving less liquid securities (e.g. additional or more frequent margining)? What methods are used to identify securities that should be subject to this treatment?
 3. Please discuss the existence of risk measurement or risk management procedures specific to forward transactions (e.g. whether margin is collected prior to the transfer of the loaned security).
- (c) Operational risk
 1. Is securities lending activity integrated operationally with other securities settlement or funds settlement activity?
 2. Is securities lending activity managed in one geographic location, or is control passed to various centres around the globe during the operating day?
 3. To what extent is manual intervention required in the daily operations of transactions and settlement?
 4. To what extent is there a separation of trading and operations, administrative, or accounting functions related to securities lending activity?
- (d) Legal risk
 1. Where applicable, are master agreements or other relevant legal contracts always in place prior to the booking of securities lending transactions?
 2. Are there backlogs of such agreements waiting to be signed?

3. Are securities lending transactions subject to close-out netting agreements? If so, what other transactions are included in these agreements?
 4. Is there any uncertainty regarding the enforceability of securities lending agreements in the circumstance where the value of the cash collateral is greater than that of the loaned securities and the securities lender becomes insolvent?
- (e) Management of fails
1. How often do fails of securities lending transactions occur?
 2. What are the major causes of fails on securities lending transactions (operational failure, failure to obtain the security via other means, other)?
 3. At what point is it possible for participants to unilaterally cancel a securities lending transaction?
 4. What is the legal recourse available if the counterparty fails to deliver on its portion of the transaction, including failures to meet margins? Are there any difficulties in realising this recourse in practice?
 5. How is compensation for the fail determined and what does this compensation consist of?

General discussion questions

Goals

The questions below are intended to stimulate general discussion among one or more market participants on the current and prospective market environment for securities lending.

Questions

- Please discuss how changes in legal, regulatory, accounting, or market structures (e.g. shortened settlement cycles, legal uncertainties, tax changes) have influenced the growth of securities lending activity in this market segment.
- Please discuss any other important incentives or impediments to securities lending activity in this market segment.
- Please discuss what changes in the legal, regulatory, accounting, or market structure could further the safe and efficient development of the securities lending market in this market segment.
- Do market rates of compensation for securities lending activity appropriately cover the risks associated with the transactions?
- Are firms currently entering or exiting the business (e.g. as intermediaries, custodians, agency lenders, borrowers, lenders)? To what extent does market share or profitability change over time? Please discuss the major factors underlying these changes.
- From the perspective of an individual firm, what factors lead to greater or lesser involvement in securities lending activity (e.g. synergies with other related businesses, economies of scale)?
- Are there other transactions that function as economic substitutes for securities lending transactions (e.g. total return swaps)? To what extent will the use of these instruments affect the market for securities lending?

- Please discuss the major economic benefits that are associated with securities lending activity in this market segment. Does securities lending activity enhance the overall ability of market participants to manage risks in funds and securities transactions?
- Would more statistics on securities lending activity be useful to market participants? If so, what types of breakdowns would be useful?
- Please discuss potential causes and implications of a loss in the depth and liquidity of securities lending markets in this market segment. What are the implications of such a loss for other market segments?

Annex 3

Current size of securities lending markets in Working Group members' jurisdictions

The following reflects information on the current size of securities lending markets for each of the sixteen jurisdictions represented on the CPSS/IOSCO Joint Working Group on Securities Lending. In most instances, the data and supporting information reflect estimates of the current size of the domestic market based on available official statistics and from the Working Group's informal survey of market participants. To the extent that data are maintained by central banks, securities regulators or treasuries, exchanges, securities settlement systems or by periodic surveys conducted by industry trade groups, the Working Group has attempted to capture this information. Often, the information reflects unofficial estimates made by key market participants obtained through interviews conducted by the Working Group.

Australia

Fixed income lending is dominated by the repo market in Australian government treasury bonds. There is also a large trade in state government paper. Increasingly, although for a small base, there is some trading of corporate bonds. However, the size of most corporate issues is too small to allow a deep repo market. Daily turnover in the fixed income lending market was estimated at AUD 4+ billion in 1998. Estimates of trading volume done onshore vary between 50% (general custodial market) and 90% (interbank market). The annual growth rate of this market segment was 30% between 1997 and 1998, which is the estimated annual growth rate over the next three years.

Equities lending in Australia is still relatively small, although it has received a recent increase in volume with expansion by several US securities firms into the market. Daily turnover is estimated at AUD 550+ million with estimates of onshore trading activity between 50% and 90%. Like the fixed income market, equity lending operates on the basis of a well-developed derivatives market, few specific restrictions and a relatively neutral tax regime.

Belgium

In the domestic securities lending market, repos on Belgian public debt instruments have by far the greatest share. Coming from nil in the beginning of the 1990s, the turnover rose to more than BEF 78,000 billion in 1998. The annual growth rate is now slowing (+ 13% in 1998).

Securities loans on Belgian debt instruments are estimated to be between 5 and 10% of the volume of repos. According to market sources, operations in foreign debt instruments are below 10% of the size of the BEF market, but reliable data are not available.

The use of equities in securities lending is deemed to be very low for fiscal reasons, but, here also, no reliable figures can be collected.

Canada

There is no complete compilation of quantitative information on securities lending activity. A wide variety of institutions, including securities dealers, banks and insurance companies, transact in securities lending markets on a regular basis. The vast majority of repo and securities lending transactions involve securities issued by the Government of Canada.

France

Reliable data are available on the repo market insofar as primary dealers provide the Treasury with statistics related to the volume of transactions, the outstanding amounts and the proportion of different categories of counterparties. Another source of available statistics relies on figures provided by the French CSD, Sicovam SA. The assessment of the activity on other securities lending activity is more difficult. No overall figure is available, either for securities loans or for sell-buyback transactions.

Germany

The overall repo and lending volume is estimated by market participants to be approximately DEM 300 billion (including government bonds, Pfandbriefe, corporate bonds and equities). Repo transactions are carried out mainly in government bonds. To date, corporate bonds do not play an important role, but this is likely to change in the future. After minimum reserve requirements were lifted in 1997 the repo business showed a dramatic rise. In addition to an increase in the overall volume of repo transactions the number of participating banks active on both sides of the repo market (reverse repo and repo) doubled to 30 institutions in the period from March 1996 to April 1998. The current growth rate of securities lending is 20% and market participants expect it to continue to grow at 20-30% per year in the next few years.

Hong Kong

Prior to 1994, there was very little equity lending in Hong Kong, other than the small amount of Japanese and Australian business which was transacted there. Stock Exchange rules constraining short selling combined with restrictions imposed by the Stamp Duty Ordinance undermined the demand for equity borrowing and lending services. However, since the relaxation of the stamp duty treatment for borrowers in July 1994, the Hong Kong equity lending market appears to have grown substantially. Inland Revenue's semi-annual reports show that there has been a steady increase in activity, measured by the number of participants (from 112 in 1994 to 845 as reported in June 1997) and by transactions (from 1,235 in 1994 to 12,025 in June 1997).

All fixed income securities lending is conducted by the Hong Kong Monetary Authority (HKMA) in its market-making arrangement with authorised institutions (i.e. licensed banks, restricted-licence banks or deposit-taking companies). The daily average amount of outstanding securities lent by the HKMA through securities repo was approximately HKD 70 billion (USD 9 billion) in February 1998.

Italy

Securities lending activities on Italian equities are performed mostly outside Italy by foreign banks. Italian banks are estimated to deal with ITL 7,700 billion per day, which represents 15% of the estimated global volume (about ITL 50,000 billion). Recently, the Italian market has witnessed a large increase in value of both overall stock market transactions and equity lending transactions. In 1997, the daily average value of stock market transactions was ITL 1,000 billion; in the first five months of 1998 it was ITL 4,000 billion. Similarly, the value of equity lending transactions has experienced an annual increase of over 100% and intermediaries estimate that the market will grow annually by 30% for the next three years.

Securities lending activity on Italian government bonds is carried out by a large number of banks and investment firms, mainly through buy-sellback transactions. The securities lending market on government bonds is composed of two segments, an OTC market, where counterparties trade on a bilateral basis, and the MTS-PCT, which is a regulated screen-based market launched in December 1997. The annual growth rate of buy-sellback activity for 1997 was 30-40% and an average annual growth of approximately 5-10% is expected for the next three years. In particular, the MTS-PCT showed a large increase in the volumes of transactions, whose daily average value was equal to ITL 40 thousand billion in the first quarter of 1999.

Data collected by the Bank of Italy for supervisory purposes show that, in the first five months of 1998, the outstanding end-of-month average amount of government bonds lent (through buy-sellbacks) by Italian banks was approximately ITL 220 trillion, while government bonds borrowed by Italian banks were equal to about ITL 110 trillion. As regards the government bonds lent, non-resident counterparties account for 15% of the total amount, while as to government bonds borrowed, the same counterparties account for 70% of the total amount.

Japan

Since its reform in 1996, the Japanese government bond (JGB) lending market has grown tremendously. As of February 1999, JGB lending transactions outstanding totalled JPY 57.2 trillion, a 310% increase over February 1997 levels. The majority of these transactions, JPY 44.5 trillion, were collateralised. Japanese market participants have indicated that the offshore market can be as large as the domestic market. Recently, however, the growth is slowing as the market is maturing. Some market participants have indicated that recent market volatility due to the hedge fund crisis induced US banks to reduce their positions in the JGB market.

Due to recent changes in stock trading (large-value trading, basket trading, stock option transactions, arbitrage, etc.) and deregulation, the stock lending market is steadily growing and attracting new participants to the market. Market participants estimate the current outstanding levels at more than JPY 5 trillion, of which the domestic market accounts for 20-30%. This reflects an annual growth rate of 50% over the past two years and market participants expect the growth rate to double over the next few years.

Malaysia

Securities lending activity, which consists only of plain-vanilla securities loans, has been minimal. Given the minimal current level of development of the Malaysian securities lending markets, official market information is either not available or very limited. As of 30 June 1997, only four market participants had conducted any transactions. Total value traded amounted to around MYR 260 million (about USD 100 million at prevailing exchange rates). One respondent surveyed by the Working

Group suggested that total volume up to that point might have amounted to no more than 50-100 trades.

Mexico

Almost all borrowing and lending of equities is done in an electronic system developed and operated by INDEVAL, the Mexican CSD. The system started in 1997 and the daily average is USD 5-10 million. Equity lending is primarily conducted by banks acting on behalf of clients and broker-dealers acting as principal and on behalf of clients. Broker-dealers do more than 90% of all borrowings. The average growth rate is expected to be above 100%.

Due to regulations, banks and broker-dealers are the only participants allowed to transact repos and reverse repos. The average daily aggregate amounts are USD 9 billion and up to 90% of all repos are transacted by residents. The average annual growth rate is expected to be around 15%.

Netherlands

The Dutch securities lending market may be characterised as a small, relatively open market with only a few players. While there are no official data available on the market size, it is understood that the securities lending market has shown steady growth over the past few years. This has been due to several factors. One was the introduction of a "securities lending pool" (the free delivery facility) for the stock exchange. Later, the strong growth of derivatives trading also boosted securities lending turnover. Other factors have been the introduction of a fixed settlement period on the stock exchange and the expansion of short selling transactions.

Spain

In the equity market, bilateral loans must be reported to the settlement service (SCLV). Stock markets, through the daily Bulletins, disclose information regarding the open position of bilateral loans in each listed stock. According to the last figures available (March 1999), the outstanding balance is EUR 9.4 billion, which represents 947.2% over the daily average trading on equities and 3% of the market.

In the public debt market, the Bank of Spain publishes a monthly bulletin including figures on the repo market. At the end of February 1999 the total value of government bonds on repo was EUR 42,193 million, which represents 23% of the total value of government bonds issued.

Sweden

Statistics on the turnover of the Swedish repo markets have existed since 1993. The turnover has increased from SEK 6,000 billion in 1993 to SEK 32,000 billion in 1998, which can be translated into an average annual increase of 40%. Growth has been slowing down in the two last years, with an increase in turnover of around 15%. Compared to the spot market, the turnover on the repo market is about twice as high. The underlying instruments on the market are treasury bills, government bonds and mortgage bonds. Turnover in mortgage bonds have generally constituted about 15% of the total turnover on the repo markets.

Statistics are not available for the equity lending markets. Market participants' very rough estimates of the outstanding amount of equities on loan were on average around USD 5 billion in May 1997.

Switzerland

The Swiss National Bank has been collecting and publishing data on securities lending activities on a monthly basis since 1993. These data cover domestic and foreign operations of Swiss banks. Since mid-1998, they include securities loan transactions as well as (the securities side of) repo transactions. For 1999 it is planned, however, to provide more detailed figures. Swiss banks act as primary intermediaries, usually on a principal basis.

As of end-1998, Swiss banks had CHF 158.6 billion in total securities loans on their balance sheets; CHF 134.8 billion were to banks and CHF 23.8 billion to other customers. The majority of those loans were to foreign counterparties. As regards securities borrowing, Swiss banks had CHF 264.5 billion outstanding at the end of 1998. There is less of an imbalance between domestic and foreign operations. Corporate customers, moreover, are more common counterparties than banks in securities borrowing activities. Partly due to the introduction of a Swiss repo market in 1998, there has been a tremendous growth in these activities. Since 1995 securities lending and borrowing levels have grown by 470% and 611% respectively.

United Kingdom

Government bonds: Prior to the establishment of the open gilt repo market in January 1996, securities loans of gilts typically ran at a level of GBP 10-15 billion outstanding. Subsequently, securities loan volumes have grown to GBP 20-30 billion. Over 80% of transactions are open or next day. Meanwhile, gilt repo has developed rapidly, growing to over GBP 70 billion by end-1998.

Equities: Prior to 1997, only equity market makers were allowed to borrow stock. Moreover, borrowing had to be channelled through specialist intermediaries, which in turn could borrow stock only from lenders approved by the UK tax authorities. In October 1997, the restrictions on the borrowing and lending of UK equities were relaxed and equity repo allowed. Outstanding stock borrowing in the equities market is currently around GBP 12 billion – as measured by the range of the outstanding value of stock borrowed through CREST, the settlement system for UK and Irish equities.

London is also a major international market, with global custodian banks and securities dealers channelling substantial securities lending business from Asia and the rest of Europe through their London offices. Present data are unavailable on these values.

United States

The United States has the largest securities lending markets in the world and they have been continuing to experience significant growth. Repo agreements are widely used as a source of financing by primary dealers, securities firms, banks and institutional investors and to a lesser extent as a market trading activity.²³ Available official data suggest that the size of the US repo market is at least USD 3.2 trillion dollars. The 33 primary dealers alone averaged USD 2.5 trillion in weekly outstanding repo and reverse repo agreements in government-issued debt and US banks had USD 782 billion in total outstanding repos and reverse repos as of 30 September 1998.

In the United States, securities loan transactions are primarily relied upon to conduct trading activities revolving around specific securities. With respect to the size of the securities loan market, available data also only exist for dealers and banks, but suggest that the size of this market could be close to USD 1 trillion. Data collected by the SEC reflect that all carrying and clearing broker-dealers had

²³ There are 33 designated primary dealers authorised as market-makers in the primary US government securities market.

USD 699 billion in securities borrowed outstanding as of September 1998 (and USD 309 billion in securities loaned). Data compiled from a recent trade group survey and from the Working Group's interviews reflect that, by end-1997, 20 of the largest US custodian banks alone had over USD 460 billion in outstanding securities loans (from a portfolio of USD 2.4 trillion in total lendable securities). These figures exclude the agent lending activity of other custodians, the activity of institutional investors lending directly in the market.

Annex 4

Summary framework of the securities lending market in Working Group members' jurisdictions

Australia

1. Basic market information

The majority of securities lending in Australia is repo transactions in government bonds. The Reserve Bank (RBA) is one of the major repo counterparties. Equities lending is growing slowly. A wide variety of institutions participate in the securities lending market (both equities and bond repos). There are very few buy-sellbacks. There are very few uncollateralised securities loans where legal ownership does not transfer.

2. Access and reporting

There are no restrictions of access to the securities lending markets. Australian banks and financial institutions regulated by the RBA or the Australian Prudential Regulatory Authority (APRA) must report their operations, including repos. Members of the Australian Stock Exchange (ASX) must report monthly to ASX including equity securities loans. All equity repos must be reported as such to qualify for stamp duty exemption.

3. Legal issues

The Corporations Law regulates the securities industry generally in Australia, but contract law applies to the operation of most repo contracts. The stamp duty and taxation laws recognise, and facilitate, repos and securities loans.

There is legal transfer of ownership of securities in securities loans and repos.

Australian equities transactions are conducted under a standard Australian Securities Lending Association adaptation of the OSLA. Most bond repos are conducted under the ISDA master agreement with an Australian annexure prepared by the Australian Financial Markets Association.

4. Taxation issues

Under Australian taxation laws, a fully completed repo transaction or returned securities loan is deemed not to involve any change in ownership of the securities. Capital gains are not recorded. Repo costs and revenues are recognised. Standard repos and securities loans are exempt from stamp duty.

Foreign transactions are not adversely treated.

5. Accounting standards

Under Australian accounting concepts, the lender of securities is considered to continue to own the securities in substance. Hence, no sale is recorded, and any fees are recorded as income over the period of the loan. Conversely, the borrower is not recognised as the owner of the securities and can expense the fees over the period of the loan.

Belgium

1. Access and reporting

There are no restrictions of access to the securities lending markets. The Belgian professional intermediaries have to report their operations, including repos and securities loans, on Belgian public debt instruments to the “Fonds des Rentes”.

2. Legal issues

For securities loans the Civil Law is relevant. There is a legal transfer of ownership of the securities.

Repo transactions are the subject of specific legislation that aims at promoting the use of dematerialised public debt instruments, but is also applicable for all kinds of securities.

Aside from statutory rules, the Belgian operators widely use the Global Master Repurchase Agreement (GMRA) with the Belgian annex.

3. Taxation issues

There are specific fiscal rules relating to dematerialised Belgian securities. According to this legislation, professional and/or foreign parties are taxed as if the transaction had not taken place. The fees or remunerations are considered as interest and are taxed as such. Private Belgian investors are not allowed to use dematerialised bonds for securities lending operations.

For foreign securities or materialised Belgian securities the common fiscal law is applicable. This has no negative impact for foreign bonds, but prevents an actual use of Belgian materialised bonds (otherwise withholding tax would be charged on accrued interests) and equities.

4. Accounting standards

(a) Repos

For credit institutions, repos have to be considered as collateralised loans: the legal transfer of ownership does not trigger any record of securities moves in the balance sheet. The cash is recorded in the balance sheet as a short-term claim (for the buyer against the seller) or as a short-term debt (for the seller against the buyer).

For non-credit institutions, the “Commission des normes comptables” recommends that the accounting procedures should be aligned with the principles described above.

(b) Securities loans

No specific rules have been laid down. According to the usual accounting rules concerning loans of consumables, the borrower should book the securities as assets while the lender should record a claim for the reimbursement of the securities on its assets side. For operations with dematerialised securities between professional counterparties, the taxation neutrality has to be maintained.

Canada

1. Basic market information

The vast majority of repo and securities lending transactions involve securities issued by the Government of Canada.

In Canada, there is no complete compilation of quantitative information on securities lending activity. A wide variety of institutions, including securities dealers, banks, insurance companies and pension funds, transact in securities lending markets on a regular basis. The securities dealers and pension funds constitute the most active participants. Mutual funds are not allowed to participate in securities lending transactions.

The Bank of Canada participates in securities lending for monetary policy purposes only.

2. Transaction structures and legal arrangements

Securities lending transactions are usually structured as loans. The legal document used is the standard securities lending agreement of the Investment Dealers Association of Canada for local transactions.

3. Role of intermediaries

A central depository (Canadian Depository for Securities Limited, “CDS”) facilitates securities lending by clearing and settling electronically securities lending transactions in a very short time frame. A securities lending transaction is processed through CDS as a sale transaction, rather than as a pledge.

Custodians play a role in the securities lending market mainly as agents. They provide clearing services, custody valuation and administration including investment.

4. Collateral management and administration

Cash, government bonds, Canadian treasury bills and letters of credit are the form of collateral used most frequently.

The mark-to-market value of the loaned securities is compared on a daily basis to the mark-to-market value of the collateral. Settlement is done on a DVP basis.

Risk management procedures are: DVP, daily margining, marking to market and valuation of borrowed securities, collateral and pledges. In addition, master agreements are always in place prior to the booking of securities lending transactions.

5. Regulatory framework

The Securities Act of the relevant province or territory regulates securities lending transactions. Regulations of the relevant exchange or self-regulatory organisation also regulate the securities lending transactions.

6. Legal framework

The rights and obligations of the parties to securities lending transactions are not governed by any specific legislation, but rather by several principles of contract laws.

Regulatory changes clarify the tax treatment of securities lending transactions, which are treated as a loan of assets and are exempted from withholding taxes on interest payments to non-residents.

France

1. Regulatory framework

(a) *Repurchase agreements*

Repos (“pension livrée”) in France are governed by the law of 31 December 1993 and by the legal master agreement (“convention-cadre”) approved by the Governor of the Bank of France on 15 December 1994. Under the definition provided for by the law, repo transactions consist of a sale of securities whereby both the seller and the buyer irrevocably commit themselves respectively to repurchase the said securities and to retrocede them at an agreed price and date.

Any French or foreign legal entity (as opposed to private persons) as well as collective investment schemes may enter into a repo transaction. However, only credit institutions may enter into repo transactions on private claims. Securities eligible to be lent through a repo transaction include: securities listed on a French or foreign regulated market; negotiable short and medium-term debt instruments (“titres de créances négociables – TCN”); private or public claims.

Transactions may not be carried out on securities which, during the repo period, give rise to the payment of a dividend or of interest subject to specific withholding taxes or to a tax credit (“avoir fiscal”). The duration of a repo transaction is freely agreed upon by the parties; it may be either open-ended or with a specific term.

(b) *Securities loans (stock lending and borrowing transactions)*

For stock lending and borrowing transactions, the main regulations are set forth in a law of 17 June 1987, amended in December 1988, July 1991 and July 1996. The provisions of the Civil Code relating to consumption loans also apply to securities loans.

The law of 17 June 1987 aimed at facilitating the development of stock lending transactions by providing a neutral tax treatment for latent capital gains (or losses) arising from securities lending and borrowing transactions (see Tax issues below). Where the need to avoid the taxation of capital gains arising from the transfer of legal ownership is not relevant, the characteristics of the stock lending transactions may differ from the requirements listed in the Law of 1987. The loan would then be governed by the general provisions of the Civil Code relating to consumption loans, or by a foreign law.

The same collateral and netting provisions apply to repos and securities loans. Cash or securities collateral received by the lender against delivery of the securities lent, or later as a margin call, pass into the legal ownership of the lender. The netting of debts and claims arising from securities loans is enforceable when such loans are made under a legal master agreement.

Securities loans and repo transactions are subject to the EU capital adequacy directive requirements. There are no specific reporting requirements for such transactions.

2. Legal issues

(a) *Repurchase agreements*

Under the law of 31 December 1993, a repo transaction is considered as an outright transfer. Throughout the repo transaction period, the borrower becomes the legal owner of the securities borrowed. The borrower may relend or sell the securities.

The French standard legal agreement approved by the Governor of the Bank of France sets out the rights and duties of parties to a repo transaction and provides legal certainty as to the enforceability of netting arrangements. This standard, widely used, legal agreement played a major role in the

development of the repo market in France (domestic market and cross-border transactions). The Governor also approved the PSA/ISMA master agreement in March 1997, with some restrictions.

(b) Securities loans

Under the Law of 17 June 1987, a securities loan (stock lending and borrowing) is also considered an outright transfer, like any consumption loan. The borrower becomes the legal owner of the borrowed securities and may sell or, since 1988, relend them.

A standard legal agreement for securities lending transactions was formally endorsed by the professional associations in February 1997. This standard legal agreement governs securities lending transactions taking place within the legal framework and tax exemption of the Law of 7 June 1987.

3. Tax issues

(a) Repo transactions

The law of 31 December 1993 provided for the neutral tax treatment of latent capital gains for repo transactions. The fees/rebates received by the purchaser for providing cash are taxable as an interest payment income. There is no stamp duty or VAT applicable to repo transactions in France.

If interest is paid on the securities during the transaction period, the interest is paid to the purchaser at the payment date as a consequence of the transfer of legal ownership. However, at the end of the transaction period, the interest will be given back by the purchaser to the seller, with a value date corresponding to the date of payment (from which interest starts running). The interest payment tax will be paid at the usual rate by the seller.

(b) Securities loans

In order to benefit from a neutral tax treatment with respect to potential capital gains arising from the transfer of legal ownership of the securities lent, the securities loan transaction must meet a series of criteria set out in the Law of 17 June 1987. The specific “neutral” tax regime would not be available if, during the loan, either a dividend to which a tax credit is attached or an interest subject to withholding tax is paid. When foreign securities are lent, the benefit of the tax regime would not be available if the loans cover the date of payment of a dividend or interest to which a tax credit for foreign tax is attached.

The fees/rebate received by the lender are taxable as an interest payment at the standard rate and are deductible for the borrower as an interest payment, provided it is not excessive.

4. Accounting treatment

(a) Repo transactions

Although under the law of 31 December 1993 a repo transaction entails the transfer of legal ownership of the securities purchased, the securities “sold/lent” remain in the balance sheet of the lender. The lender records, on the liabilities side, a debt representing the cash received while the securities sold/lent are transferred to the account “titres mis en pension livrée” (securities sold through a repo transaction).

The purchaser/borrower records in its balance sheet, on the assets side, the cash lent and, on the liabilities side, the securities purchased/borrowed in a specific account “titres reçus en pension livrée” (securities received through a repo transaction).

(b) Securities loans

Under the regulation issued by the Comité de Réglementation Bancaire, the securities lent may no longer appear in the balance sheet of the lender, as a consequence of the transfer of ownership from the lender to the borrower.

In the balance sheet of the lender, the historical value of the securities is replaced by a receivable of the same amount, for the securities loans made under the neutral tax regime of the law of 1987, and by a receivable of the fair market value of the securities lent for loans made outside this framework. The securities borrowed are recorded in the accounts of the borrower at their fair market value, together with a debt of the same amount. If the loan period covers the account's closing date, the securities borrowed (and the corresponding debt) are marked to market.

Germany

1. Regulatory framework governing securities repurchase agreements and loans on collateral securities

Under German banking supervision law, only the transferee in a genuine securities repurchase agreement conducts banking business and is subject to licensing (lending business pursuant to section 1(1) 2 of the German Banking Act); enterprises acting as transferees are therefore subject to supervision by the Federal Banking Supervisory Office and the Deutsche Bundesbank. However, institutions subject to supervision still have to inform the supervisory authorities when they start securities purchase transactions and loans on collateral securities.

For loans on collateral securities, the Deutsche Börse Clearing AG has published general terms and conditions which govern the contractual relationship between the depository banks, and between the depository banks and the lending customers.

In accordance with the provisions of the EU directives on large exposures, on the solvency ratio and on capital adequacy, other items – in addition to the transferee's claim – of securities repurchase agreements and loans on collateral securities may also be included in the concept of exposure contained in the regulations governing capital adequacy (Principle 1) and lending supervision (sections 13 and 14 of the Banking Act). As long as these transactions constitute exposures to another institution from a Zone A Country (roughly the OECD area) and run for less than one year, they are not counted towards the limits on large exposures. Transactions with Zone A institutions are weighted with only 20% under Principle 1.

2. Accounting and tax treatment

(a) Securities lending transactions

Under German GAAP, the transfer of the securities is to be reported by the lender as a neutral exchange of a security into receivables in kind. The borrower has to account for the securities at fair market value.

Accordingly, for tax purposes, the borrower qualifies as beneficial owner of the securities transferred. As the German Tax Revenue qualifies the receivables in kind ("Sachdarlehensforderung") at the lender's level as a surrogate for the security transferred, the transaction is not a taxable event. Transfer taxes or VAT will not be levied.

Substitute payments (manufactured dividends), fees, etc. are treated as ordinary business income or expenses without being subject to withholding taxes. With regard to collateral investments, the general accounting and tax rules apply.

As the borrower qualifies not only as the legal, but also as the beneficial owner of the securities transferred, he will be taxed on any income (dividend or interest) on the securities borrowed. Thus he is entitled to underlying corporation tax credits and relief for withholding taxes. Non-resident lenders and borrowers will not be subject to German income taxes.

(b) Repurchase transactions

According to Art. 12 of the EC Directive on the Annual Accounts of Banks and the corresponding provision in German accounting laws, securities transferred under a repo contract continue to be reported by the transferor and thus do not generate a capital gain. Consequently the transferor will report the dividend or the interest payments although the transferee legally is the recipient of the respective payments. Both the transferor and the transferee have to account for the cash position entered into under a repo contract.

The taxation of repurchase agreements is the following: in 1982, the Supreme Tax Court (Bundesfinanzhof) ruled that dividend or interest payments are taxed with the transferee legally holding the securities.

3. Legal framework

(a) Securities lending transactions

Under German Civil Law securities lending could be qualified as a loan of securities leading to the full transfer of ownership in the securities lent to the borrower. Therefore, the borrower is entitled to freely dispose over those securities (i.e. transfer or pledge them to a third party). It is only obliged to deliver to the lender on the due date securities of the same kind and to the same amount of those lent.

(b) Repurchase transactions

Under German Civil Law, repos are agreements where parties agree to sell/buy securities spot while simultaneously agreeing to repurchase/resell the same kind of securities at a predefined price at a future date (cf. the statutory definition of repos in sec. 340b of the German Commercial Code). In fulfilment of such transaction, the seller transfers full ownership in the securities sold to the buyer against payment of the purchase price while the buyer delivers (i.e. transfers full ownership in) the same kind of securities to the seller on the forward date against payment of the predefined repurchase price.

Under German Law, the enforceability of both repo and securities lending transactions does not require the parties to enter into a master agreement. Nevertheless, standard market documentation under German Law exists and comprises (a) for repo transactions the Deutscher Rahmenvertrag für echte Pensionsgeschäfte, while (b) for lendings the Deutscher Rahmenvertrag für Finanztermingeschäfte could be used. In the case of insolvency, German law would support the enforceability of a repo with a view to both the buyer's ownership (no risk of re-characterisation) and the availability of a statutory set-off mechanism providing for close-out netting even if no specific agreement to that effect has been entered into between parties.

Hong Kong

1. Laws governing securities lending in Hong Kong

*Stamp Duty Ordinance s19 - Contract notes in respect of sale and purchase of HK stock*²⁴

This ordinance contains the formulation and execution requirements of contract notes, as well as details that a contract note must contain, to meet the requirements for exemption or payment of Stamp Duty.

*Inland Revenue Ordinance Section 15E – Profit Tax relief*²⁵

This section was added to the Ordinance in July 1994 to allow the lender to disregard any chargeable profit (apart from the borrowing fee) which would otherwise arise in respect of both the disposal of the stock and the subsequent reacquisition in a stock borrowing and lending transaction.

Securities Ordinance Chapter 333 - Securities (Dealers, Investment Advisers, Partnerships and Representatives Rule) – s15 Written agreements for securities borrowing by dealers

This section requires dealers to enter into written agreements before becoming a party to a securities borrowing. Requirements that must be met by these written agreements are also detailed in this section. These requirements include that both the securities and the collateral are marked to market daily. The borrower should also always ensure that the market value of the collateral deposited is greater than the securities borrowed and that the agreement specifies the rights and liabilities of each party in the event of counterparty default.

Chapter 333 – s75 – Issue of contract notes This regulation details requirements that must be met by individuals (and their agents) in the formulation and execution of contract notes.

Financial Resources Rules Notes for the Use of Securities Dealers

These Notes define a number of terms including:

- (a) what qualifies as “assets” from both the lending and the borrowing perspectives
- (b) which parties are considered to be “reputable”²⁶
- (c) requirements for “liquid assets” for repurchase transactions
- (d) different disclosure requirements of the lender

The Notes also refer to dealer disclosure of excess collateral (minus haircut) over admissible value of securities borrowed. This disclosure is not considered necessary if excess collateral is provided in the form of a letter of credit. Any excess collateral over admissible value of securities borrowed (minus haircut) must be added to the lender’s Ranking Liabilities.²⁷

²⁴ See Appendix 2, s19 Stamp Duty Ordinance.

²⁵ See Appendix 3, s15E – Inland Revenue Ordinance.

²⁶ Only cash deposits held with reputable parties can be regarded as constituting “liquid assets” of a short-selling dealer.

²⁷ Ranking liabilities are on-balance-sheet liabilities

less approved subordinated loans and any liabilities not required to be settled within 12 months and are incurred for the purpose of financing the purchase or the holding of property and equipment to the extent of their net realisable value *add* redeemable shares issued by the dealer which have not been approved by the SFC for FRR purposes *subject to* position and counterparty risk adjustments and off-balance sheet risk adjustments.

For FRR purposes, securities borrowing covers borrowing and lending of all securities, conducted in Hong Kong or elsewhere, and is not restricted to stock borrowing as defined in Section 19 of the Stamp Duty Ordinance. A recent consultation paper has also improved the clarity of the Financial Resources Rules,²⁸ which refers to these issues. These improvements have not been implemented at this time.

2. Regulations governing securities lending in Hong Kong

Rules of the Exchange – Securities Borrowing and Lending Regulations in the Sixth Schedule

Securities lending transactions of the Stock Exchange members in Hong Kong are governed by the SBL Regulations in the Sixth Schedule of the Rules of the Stock Exchange. These Regulations specify the contents of the securities borrowing and lending agreement including, amongst other things, the prescribed rights and obligations of borrowers and lenders.

A ledger of securities borrowing and lending transactions must be kept and be available for inspection upon request. The ledger should maintain specific collateral information including the collateral deposited and outstanding, and its marked-to-market value. Contract notes should also be maintained, as should be the securities and lending agreements.

The SBL Regulations also require the filing of returns with Inland Revenue by the borrower whenever a transaction is completed. This return should outline particulars including the number, detail and nature of any transaction.

3. Contracts governing securities lending in Hong Kong

The Overseas Securities Lending Agreement (OSLA) is the standard contract used by a majority of market participants for securities lending in Hong Kong. Hong Kong regulations may be written into this agreement or may be appended. Any specific rules or regulations regarding other issues of jurisdiction may also be appended in a similar manner. This document functions as a master agreement governing initial and subsequent securities lending transactions between the specified parties. Some groups may also have the specialised Intra-Group Securities Lending Agreements (ISLAs). There are no legal restrictions on foreign ownership of the majority of domestic securities.

4. Impact of changes of regulation and law on the development of the market

Impact of regulations on the development of the securities lending market in Hong Kong

The rationalisation of regulations applicable to securities borrowing and lending combined with the relaxation in requirements²⁹ imposed by the relevant law in recent years have facilitated the development of the securities borrowing and lending industry.

²⁸ See Appendix 1, SFC – A Consultation Paper on the Review of the Financial Resources Rules – Hong Kong, March 1997 – “Stock Borrowing and Lending/Repo Transactions”.

²⁹ For example, the SEHK abandoned some reporting requirements, expanded the list of designated securities available for short selling, eliminated the “uptick” rule of the short-selling market and rationalised margin requirements for securities borrowing and short selling. The “uptick” rule was reinstated in September 1998.

Impact of laws on the development of the securities lending market in Hong Kong

Subsequent to the relaxation of the stamp duty treatment for borrowers in July 1994,³⁰ the Hong Kong securities lending market grew at a steady pace. Borrowing rights were extended to everyone, including domestic and international funds and individuals. The purposes of borrowing were also expanded to include the settlement of a sale, a future sale of stocks, onlending and replacement of stock.

Italy

1. Legal/regulatory framework

(a) General rules

In Italy there are no specific rules for securities lending transactions (“prestito titoli”); however, general principles and provisions set forth in the Civil Code and in the bankruptcy law are applicable. Special regulations restrict the securities lending business carried out by investment funds and insurance companies.

The temporary transfer of securities without any limitations, that is peculiar to securities lending transactions, can be obtained through some of the standard contracts regulated by the Italian Civil Code: (i) the “mutuo” (loan) – art. 1813 c.c.; (ii) the “riporto” (contango) – art. 1548 c.c.; (iii) the so-called “anticipazione bancaria impropria” (bank advance) – art. 1851 c.c.

Furthermore, another contract, called “pronti-contro-termine” (buy-sellback), is available. It is standardised in market practice but it is not governed by the civil code. Accordingly, there are at least three legal models that can be used to “structure” securities lending transactions in Italy; this situation is reflected in the legal documentation drawn up by market participants and market associations.

All these contracts, and also the expression “securities lending” (“prestito titoli”), have been mentioned in laws and regulations which entered into force in recent years (e.g. Legislative Decree no. 58/1998 and tax regulations). In 1998, a specific regulation issued by Consob together with the Bank of Italy allowed Italian CSDs to offer securities lending services.

(b) Market regulations

As regards buy-sellback transactions on Italian and other government bonds, a wholesale regulated screen-based market (MTS-PCT) was introduced in December 1997 by a Treasury Decree (24 October 1997). Intermediaries are free to choose whether or not to trade on this market. The market and the private company MTS S.p.A. that manages the market are supervised by both the Bank of Italy and Consob. The “Market Rules” are laid down by MTS S.p.A. upon approval by the Treasury Minister in agreement with the Bank of Italy and Consob.

(c) Legal documentation

Securities loans: Before carrying out securities loans transactions with an Italian counterparty, Italian participants sign a master agreement which is generally governed by Italian law. The master agreement may be: (i) drawn up by the intermediary concerned; (ii) a standardised master agreement drawn up by Italian intermediaries associations (such as ABI, ASSOSIM), which is governed by the Civil Code.

³⁰ The exemption period was extended from 14 days to 12 months.

Before carrying out securities loans transactions with a non-resident counterparty, Italian participants usually sign the OSLA standard master agreement together with an Italian Annex. Such an Annex may: (i) make the entire agreement governed by Italian law; (ii) not amend the original governing law of the agreement (English law).

Buy-sellbacks: The GMRA PSA/ISMA Master Agreement is mainly used in buy-sellback transactions with non-residents, including the specific ISMA Annex envisaged for this type of contract. This agreement is governed by English law.

Italian participants carrying out buy-sellback transactions with an Italian counterparty generally do not use any master agreement. In February, MTS S.p.A. drew up a Master Agreement (very similar to the GMRA-ISMA) which is governed by Italian law; this agreement is expected to become one of the standard master agreements signed by MTS participants.

(d) Close-out netting

According to article 203 of Legislative Decree no. 58/1998 (New Consolidated Italian Law on Financial Markets and Services), close-out netting arrangements are legally enforceable in case of bankruptcy of the counterpart.

(e) Prudential rules

Repurchase agreements (and sell-buybacks): according to the Capital Adequacy Directive provisions banks and investment firms must include reverse repurchase agreements (reverse repos) among their risk assets for market risk³¹ if reverse repos respect the conditions defined by this directive.

As for investment firms, they are not authorised to trade on own account; reverse repos have to be included in the calculation of the solvency ratio.

Banks must include repos in the market risk requirements if the underlying securities belong to the trading book or if they are originated by reverse repos included in the trading book.

The reverse repos not included in the market risk requirements are to be taken into account in the solvency ratio the same way as loans guaranteed by securities.

Securities loans transactions: according to the provisions of the Capital Adequacy Directive, securities borrowings and securities lendings are taken into account in capital requirements for counterparty risk, if they meet the conditions defined by this directive.

(f) Accounting treatment

Repurchase agreements (and sell-buybacks): according to the provisions of Directive 86/635 “on the annual and consolidated accounts of banks and of financial institutions” the securities “sold/lent” remain in the balance sheet of the securities “transferor”.

The securities “transferor” records, on the liabilities side, a debt representing the purchase price received by the securities “transferee” while the “transferee” records, on the assets side, a credit representing the purchase price paid to the “transferor”.

Securities loans: securities loans transactions have to be reported in the balance sheet following criteria similar to repos. Then, the securities lender continues to record lent securities in his balance sheet.

³¹ General risk and counterparty risk.

2. Tax treatment

(a) Indirect taxes

All securities loans and most buy-sellback transactions are exempt from stamp duty; they are exempt from value added tax (VAT).

(b) Capital gain taxes

Securities loans and buy-sellbacks are not subject to any capital gains tax.

(c) Direct taxes

Residents' proceeds from securities loans and buy-sellbacks, as well as proceeds of the underlying securities (interest, dividends, etc.) and manufactured payments, are fully subject to income tax: via withholding tax for resident individuals and as part of total income for resident companies.

The applicable tax rate depends on the nature of the activity carried on by the company receiving the proceeds: (i) banks and other financial institutions are subject to the corporate income tax and to regional tax on productive activities (IRAP); (ii) non-financial companies are subject only to corporate income tax (since financial costs and proceeds are not relevant for IRAP purposes); (iii) individuals discharge their tax liabilities with a flat-rate withholding tax (12,5% or 27%, depending on the nature of the underlying asset); (iv) non-residents are generally exempt from direct taxes; when they are liable, taxes are deducted at source.

3. Market infrastructure

The regulated screen-based market (MTS-PCT) enables trading of buy-sellback contracts, both "general" and "special", on Italian and other European government bonds. The market is based on a continuous quote-driven trading system and there are no primary dealers; it is expected that as of May 1999 trading will become anonymous. Accordingly, bilateral credit limits, managed on a centralised basis, will be introduced.

Securities lending transactions are mainly settled through the Bank of Italy's securities settlement procedure (LDT) on a DVP or DVD basis. Clearing and settlement facilities include automatic trade matching, calculation of repo interest and automatic managing of the "closing leg" for buy-sellback transactions traded on MTS-PCT.

Japan

1. Overview

Until short sale of bonds was fully liberalised in 1989, *gensaki* (a transaction similar to buy-sellback) had been the only available form of JGB lending. The use of *gensaki* has been limited, however, because securities transaction tax is levied on sellers of bonds.

A bond lending market was established along with the liberalisation of regulations on short sale in 1989, but it was not active. Since January 1996, when the restrictions on cash-collateralised bond lending was abolished, the bond loan market has grown significantly.

Stock lending associated with margin transactions (“loans for margin transaction”) was established in 1951 for the settlement of margin transactions.³² The Securities and Exchange Law (SEL) and the relevant regulations stipulate eligible entities, period and initial margin requirement for such stock lending transactions. The inflexibility of the domestic stock lending market led to the development of an offshore lending market for Japanese stocks. The authorities and market participants, concerned about the hollowing-out of the domestic lending market, worked on reforming the stock lending market. In December 1998, a guideline on stock lending outside the “stock lending programme” was introduced by the Japan Securities Dealers Association (JSDA).

2. Regulatory framework

The JSDA sets out rules on eligible securities for securities loans and *gensaki* and the collateral haircut for securities loans. These rules are applied to members of JSDA.

There is uncertainty on whether some entities can conduct securities lending in relation to the laws regulating such entities. For example, it is not certain whether insurance companies (the major players in securities lending) can conduct cash-collateralised stock loans for the purpose of funding.

According to an ordinance issued by the Federation of Bankers Associations (which was reorganised as “Japanese Bankers Association” from 20 April 1999) in 1997, where margin call is stipulated in a contract of bond lending and a lender exercises margin call, only the risk weighting of securities issuers is applied to securities lent for the BIS capital adequacy rule.

3. Tax treatment

Securities transaction tax is levied on sellers of securities in Japan. Securities loans are not subject to securities transaction tax. Market participants, therefore, prefer securities loans to repo or *gensaki* transactions.³³ The lending fee and interest payment on cash collateral in securities loans, and the difference between the selling price and buying price in *gensaki* transactions, are both subject to income tax.

The securities transaction tax was abolished at the end of March 1999. It is anticipated that the abolition will change market participants’ preference for types of securities lending, and may cause a shift of transactions from cash-collateralised securities loan to repo or *gensaki*.

4. Accounting treatment

In a securities loan transaction, legal ownership of the underlying securities is transferred to the borrower. However, securities lent continue to appear on the balance sheet of the lender and also on that of the borrower. Cash collateral accepted by the lender appears on its balance sheet as well. In a loan transaction, profit or loss of the portfolio is not realised because transfers of securities do not change the book value of the portfolio.

Gensaki transactions are recognised either as financing transactions or as outright purchase transactions depending on the accounting standard the firm complies with. For certain institutions such as banks, *gensaki* must be recorded as outright purchase transactions where profit or loss of the portfolio is realised.

³² Stock lending in Japan has long taken a form of “stock lending program”. In the stock lending program, a securities firm lends stocks to a customer when the customer sells the stocks short by a margin transaction. If the securities firm itself cannot finance the stocks for the customer, it borrows the necessary stocks from a securities finance company (a specially licensed company for lending stocks or funds to securities firms) through loans for margin transactions.

³³ *Gensaki* transactions of treasury bills (TBs) and financing bills (FBs) or those with the Bank of Japan are exempt from the securities transaction tax.

5. Legal framework

There are master agreements for bond lending and stock lending, both of which are drafted by the JSDA. Most participants use the standard master agreement and its annex for bond lending. The annex of the master agreement stipulates ways of marking to market and margin maintenance. For stock lending, the master agreement drafted by the JSDA was only introduced in December 1998, so the extent of the use of the agreement by market participants is not known.

The Close-out Netting Law came into effect in December 1998, which diminished uncertainty with regard to the enforceability of the close-out netting of cash-collateralised securities loans.

Malaysia

1. Regulatory framework

The lending and borrowing of securities in Malaysia constitutes “dealing in securities” as defined under section 2(1) of the Securities Industry Act 1983. A person who wishes to carry on the business of securities lending in Malaysia must be either a licensed dealer or an exempt dealer under the Act.

Foreign securities firms and Khazanah Nasional Berhad, the government’s investment arm, which are not licensed dealers under the Securities Industry Act, have been conferred the status of exempt dealer through the Securities Industry (Exempt Dealer) Order No. 2 of 1996 for the purpose of carrying out the business of securities lending.

The Securities Commission has formulated and released a set of guidelines on securities lending practices to ensure that market participants adhere to proper business practices. These include, among others: ensuring sufficient collateralisation of transactions; using a standard form agreement; keeping proper records and having explicit reporting and risk management procedures.

The Kuala Lumpur Stock Exchange (KLSE) has also amended its rules to allow securities lending by member companies. Rule 22 of the KLSE’s rules relating to member companies and its prescribed regulations became effective on 15 July 1996. Among other things, they set out terms and conditions for participation by KLSE member companies. These include requirements for risk disclosure to clients and conditions for the use of securities held in custody for the purpose of securities lending.

2. Tax issues

Under the relevant income tax and stamp duty exemption orders of 1995, securities lending transactions attract the following concessions:

- exemption from stamp duty on the contract note;
- exemption from tax on any income (other than dividends, lending fees, interest earned on collateral and rebate) arising from a loan and return of securities listed on the KLSE and the corresponding exchange of collateral under a securities borrowing and lending agreement.

Exemption orders attract certain terms and conditions so that they conform to section 127 of the Income Tax Act and section 80 of the Stamp Act. To prevent abuse of any tax and stamp duty concessions granted:

- all lenders and borrowers who wish to enjoy tax and stamp duty concessions for securities lending documentation must first be authorised by the Securities Commission;
- borrowers must return to the lender securities which are equivalent to the loaned securities;
- parties to a securities lending transaction must deal at arm’s length;
- the securities lending agreement must be a written agreement incorporating all the terms and conditions imposed by the Securities Commission;

- the securities lending agreement must be lodged with the Office of the Collector of Stamp Duty within one month after it has been executed.

3. Market participants

The Ministry of Finance has approved the following “institutional structure” for securities lending:

- domestic stockbroking companies may borrow or lend securities in various capacities, e.g. principal, agent and finder;
- domestic banks, including custodial banks, may lend securities as principal or agent;³⁴
- institutions, such as state funds, may lend securities as principal;
- foreign securities houses may borrow securities directly from Malaysian residents who are authorised lenders but may only lend securities through licensed stockbroking companies.

Insurance companies, other companies and individuals may participate in securities lending by channelling their requests through licensed stockbroking companies as is currently required under section 2(1)(a) of the Securities Industry Act. Institutions that participate in securities lending directly are individually authorised by Securities Commission.

4. Basic market information

Securities lending activity consists mainly of securities loans. Loanable securities are mainly those held in custody by stockbrokers and banks for their clients. Income enhancement is thought to be the major motivation for lending securities. Potential reasons for borrowing securities are thought to include the settlement of failed trades, onlending for the purpose of participating in back-to-back agreements, covering short sales, and hedging and arbitraging derivatives portfolios.

5. Transaction structures and legal arrangements

All securities lending transactions must be based on a master agreement designed specially for the Malaysian market. There are, however, plans to introduce a Malaysia addendum to the Offshore Securities Lending Agreement.

Legal title to the underlying security is transferred upon a lending and borrowing transaction in accordance with Malaysian laws. This would include laws regarding contracts, insolvency and so on. Lenders are compensated by fee, which tends to be quoted in absolute terms because of the small size of transactions. Securities lending transactions are recorded off-balance sheet daily. Participants have to report their transactions to the Securities Commission at the end of every calendar month.

Mexico

1. Overview

The securities lending market is segmented in two main groups: loans of equities, bank and government securities, and repos on government and bank securities. Banks and broker-dealers can

³⁴ Under the current regulatory framework, banks may not deal directly with the counterparties, but there are plans to remove this impediment. Only banks from the top tier set by the central bank based on capital may participate in the lending market.

participate, as principals, in both markets, acting as borrowers or lenders/cash receivers or cash providers. While loans were authorised in 1996, repos go back to the 1980s.

2. Regulatory framework

Participation for banks and broker-dealers in the repo market is regulated by the central bank. The loan market is regulated by the CNBV and the Bank of Mexico (Authorities) for broker-dealers, and by the Bank of Mexico for banks. In both market segments legal title to the underlying security is transferred to the borrower. The legal framework allowing loans is established in the “Ley del Mercado de Valores (LMV)”, the “Ley de Instituciones de Crédito (LIC)”, and the “Ley del Banco de México (LBM)”. Also, the Authorities have issued secondary regulation. For repos, the legal framework is established in the “Ley General de Títulos y Operaciones de Crédito”, the LIC, the LMV and the LBM. In addition, the By-Laws of the Central Securities Depository (CSD), which acts as an agent in the market, establish operational rules. As to the reporting to regulators, secondary regulations issued by the Authorities require banks and broker-dealers to report every month all securities held as at the end of the month.

3. Accounting and tax treatment

Accounting treatment for loans and repos is issued by the CNBV. Mexican GAAP split accounting treatment for lender and borrowers/cash receivers and cash providers.

For the lender, the lending fee received is deferred as an income over the life of the loan. The securities lent are derecognised on the lender’s balance sheet, charging them to a securities/cash account receivable, which is marked to market during the life of the transaction. Upon termination, the securities receivable are derecognised, entering the securities received. For the borrower, the borrowing fee paid is deferred as an expense over the life of the loan. The securities borrowed are recognised on the borrower’s balance sheet, charging them to a securities/cash account payable, which is marked to market during the life of the transaction. Upon termination, the securities payable are derecognised, cancelling the securities received.

For the cash taker, a securities receivable and a cash payable account are recognised. The receivable is marked to market during the term repo and the payable accrues the implied price differential. At termination the cash taker recognises the assets received on his balance sheet, cancelling the receivable, and settles the payable delivering cash at the forward price, including the price differential. The cash provider recognises a cash receivable and a securities payable account. The receivable accrues the price differential implied and the payable is marked to market over the term repo. At termination the cash provider derecognises the assets delivered against the settlement of the payable on his balance sheet. The receivable is cancelled when cash is received.

The tax treatment for loans and repos is mainly contained in the federal tax code, income tax law, and value added law. The federal tax code does not consider the loan as the sale/buy of an asset and therefore the sale is not a taxable event when securities are received. Only in the event that the borrower returns the lender cash and not the securities is the profit realised from lending the securities taxed as a sale. The sale of a repo is not considered a taxable event. Lending fees for loans, and price differentials for repos do constitute a taxable event. All participants are exempted from value added taxes for loans and repos.

4. Legal framework

Repo participants use a non-standard master agreement, while the CSD requests lenders/borrowers to sign its own standard agreement.

Netherlands

1. Regulatory arrangements

In the Netherlands, securities lending and repo markets are largely unregulated. Securities lending operations can be conducted both on-exchange and over the counter (OTC). There are no restrictions on access to the securities lending market other than authorisation as an investment firm. Supervisory guidelines and reporting requirements are in accordance with the Capital Adequacy Directive (CAD, 93/6/EEC). Securities lending and repo transactions are subject to capital charges depending on the market value of the collateral in accordance with the counterparty risk described in Annex II of the CAD.

According to the rules of AEX, certain requirements have to be met before clients may enter into short selling transactions. These requirements aim at ensuring an adequate system of controlling risks stemming from short selling. For instance, twice monthly clients of AEX are required to report the overall short position per fund. This information will be published whenever the short position of a client exceeds 1,000 shares. Also, clients need to post collateral which covers the daily monitored short positions (130%/110% of the market value of the short position in case of shares/government bonds). The absence of very strict short selling rules has stimulated securities lending.

2. Legal basis

In the Netherlands securities lending/borrowing and the provision of the associated collateral are undertaken on the basis of a title transfer approach. The Dutch legal provisions concerning both a Security Loan transaction and Buy and Sellback transaction (BSB) can be considered light. There is no specific legislation related to securities lending or BSBs. The legal basis for securities lending is loan for consumption. Stocks “lent” are transferred against an obligation by the transferee to return equivalent securities on the maturity of the loan or upon recall. The borrower becomes the legal owner, though the lender maintains certain rights (compensation for payments of dividends or other proceeds). In cases of insolvency of one of the parties concerned, Dutch law provides for possibilities for set-off (close-out netting). Buy and Sellbacks are looked upon as two separate deals, one spot trade and another forward trade.

Before a recent amendment of the Act on the Supervision of Securities Trade 1995 (Official Gazette 1998, 716), the legal status of a repo transaction was uncertain. A specific rule within the Dutch Civil Code prohibited transfers of ownership solely for reasons of safety/collateral and thus not constituting a real transfer of ownership. In order not to contravene the law, parties use either securities lending or BSB, the last one constituting two separate transfers. The implementation of the above-mentioned bill has ensured that a repo transaction is not contrary to the aforementioned rule and the valid legal status of the repo transaction at the beginning of the third stage of EMU (1 January 1999). Now that any doubts about the legal status of repurchase agreements are removed, it is expected among market participants that volumes may rise quickly and that new products are very likely to be introduced to the Dutch market.

Both OSLA and PSA-ISMA agreements are broadly used in the Dutch securities lending and repo market. Only a few parties were known to use customised standard agreements.

There are no legal restrictions whatsoever on foreign ownership of domestic securities.

3. Tax basis/accounting standards

Development of the securities lending market has been partly dependent on liberal tax regulation. Under Dutch tax law, annual taxable profit of corporations is calculated on the basis of sound business practice. Taxable profit comprises income from all sources, no matter what the form of the benefits is (also capital gains). One of the basic elements of sound business practice is prudence. Hence gains are to be accounted for as soon as they are realised. Gains are generally considered to be realised when –

in addition to the transfer of legal ownership – economic ownership is transferred. Because the lender retains beneficial ownership, both BSB and securities lending are considered tax neutral. Therefore the transfer of securities does not trigger a realisation of profit. Naturally, the fees which are earned by the lender are – if applicable – subject to profit tax.

Withholding tax is levied on the actual possessor of the securities. In cases of securities lending it would be borne by the borrower of the stock. The borrower has to pay manufactured dividends (on a gross/net basis) to the lender. Repo coupon payments are corrected by means of forward pricing. In the Netherlands, neither Stamp Duty nor any other taxes are levied on-exchange or OTC.

Both in repo and securities lending transactions assets stay on the balance sheets of the lender/seller and are not shown on the balance sheets of the borrower/buyer. In the appendix to the balance sheet lenders need to report the effective amount of outstanding loans. In the borrowers' balance sheet cash collateral is accounted for as a short-term loan granted to the lender, whereas in the lenders' balance sheet it is accounted for as a deposit. Accounting rules in the Netherlands are in line with international accounting standards.

Spain

1. Regulatory framework

Broadly speaking, repo agreements on fixed income (both the book-entry public debt market and the private bond market) as well as securities lending transactions in the equity markets can be carried out by any investor through a member of the settlement system of the respective market. The intermediary must report these transactions to the governing body of each market, which is in charge of disclosing information regarding the amounts of the above transactions to the participants.

In the equity market there are currently two systems to carry out securities lending transactions.

- (a) The so-called “centralised securities loans” through the Spanish Central Securities Depository for Equities (Servicio de Compensación y Liquidación de Valores – SCLV). It is a system with a built-in procedure for the automatic lending of equities by the members of the central depository having an account with it, and with the aim of delivering the securities to the purchasing party on the date of settlement in cases when the delivery is not made by the seller. Lending participants place securities at the disposal of the SCLV, which borrows them to cover sales pending settlement.
- (b) Conditions of bilateral securities loans are freely determined by the parties through a private contract, usually based on the OSLA agreement. This kind of securities loans must also be reported to the SCLV, which exclusively registers those loans arranged between parties. The Daily Bulletin of the stock markets discloses information regarding the open position of bilateral loans in each listed stock.

Supervision of repo activity in the book entry public debt market is conducted by the Bank of Spain, whereas the CNMV is entrusted with the supervision of both securities lending transactions carried out in the equity market and repo agreements carried out in the private bond market (called AIAF).

2. Accounting and tax treatment

(a) Accounting standard

This establishes the different accounting treatment between securities lending and the repurchase agreement operations. In securities lending transactions, the lender will remove the securities from its portfolio. However, in repurchase-agreement operations the securities remain in the portfolio of the

lender, although there is a change in the ownership of the financial assets. The securities lent to the SCLV remain in the accounts of the intermediary.

(b) Tax treatment

A repo on bond markets does not constitute a taxable event (although dividend income may). While centralised securities loans to the SCLV are fully regulated, there are no specific standards for the bilateral securities loan, because of a lack of a legal framework.

In the case of centralised securities loans (SCLV), the economic rights accrue to the lender (without a compensation), which will consider them subject to capital gains tax. In addition, there is a no capital gain for the lender, unless the borrower gives back money instead of securities.

3. Legal framework

Last November, the Spanish Parliament passed an amendment of the Spanish Securities Market Act (hereinafter SMA) in order to transpose the principles of the Investment Service Directive. Art. 36.7 of the aforementioned Act states that securities loans on listed stocks with the purpose of executing transactions on a regulated market or acting as collateral for monetary policy transactions must follow certain rules regarding: (1) minimum level of liquidity of stocks to be borrowed, (2) registration in the SCLV, (3) maturity of the loan with a maximum length of one year, (4) collateral eligibility and (5) necessary margins.

Although there is a complete and accurate regulation both for “centralised securities loans to the Spanish central securities for equities”, and repo transactions executed in the debt market, before this amendment there was no specific legal regime for bilateral loans in the equity market. Because of this lack of regulation, to date the majority of these transactions are carried out by non-resident entities.

To develop the requirements included in art. 36.7 of SMA, a rule is being drafted with the aim of considering these transactions a real loan and not a deal. The forthcoming rule also includes the criteria that the governing body of an organised market must fulfil to allow securities lending transactions on a listed stock. Market authorities will have to take into account the frequency and volume of trading. Securities lending will require the participation of a member of SCLV as intermediary.

Sweden

1. Legal and regulatory framework

There is no specific law governing securities lending in Sweden. A number of laws, however, have an impact on securities lending. Each of them is described briefly below.

The Financial Instruments Trading Act (1991:980) contains general provisions for all actors involved in financial trading. The areas covered are prospectuses, dealing with instruments owned by third parties, signalling rules for qualified ownership in stock companies and rules regarding netting and margin collateral. Especially the latter provisions are important for securities lending. They make netting agreements and the provisioning of margin collateral unrecoverable in respect of insolvency law. The law also states that securities lending agreements have to be in writing.

Banks and securities companies are the only institutions that can act as intermediaries on the securities lending market. Banks are regulated in the Banking Act (1987:617) and securities companies in the Securities Business Act (1991:981). There are no major differences between banks and securities companies with respect to the possibilities to act as intermediaries on the securities lending market. Foreign banks can apply to the Financial Supervisory Authority (FSA) for permission to act as

intermediaries in Sweden through a branch. Banks situated in EEA countries do not need any permission, nor do credit companies. Foreign credit companies situated outside the EEA area cannot act as intermediaries through a branch, unless they apply for permission to run securities business under Swedish law, thereby becoming supervised by the FSA.

There are no general rules for borrowers and lenders which act in their own positions on securities lending markets. The market is also open to foreign participants, that is there are no limits on foreign holdings and trading with Swedish financial instruments except for the provision of financial services within Sweden, as described above.

The capital adequacy treatment of repos and securities lending is regulated by the FSA. Capital requirements are calculated on the difference between securities lent and the collateral received. If the value of securities lent is greater than that of the collateral received, the institution will have a capital requirement on the net difference. A capital requirement will correspondingly be imposed on the borrower if the securities borrowed are worth less than the collateral given.

From the beginning of 1999, it will be allowed to net different contracts with the same counterparty for capital adequacy purposes, provided that a netting agreement is in place.

For both securities lending and repos, the legal title is transferred when a security is lent. All the relevant standard master agreements that are used on the Swedish markets contain provisions in this respect (a national master agreement for securities loans, the OSLA agreement for international securities loans and the PSA/ISMA agreement with a buy-sellback annex for repos).

Securities lending agreements are treated in an FSA regulation (FFFS 1998:21). The regulation mainly states which aspects a securities lending agreement should cover. It also states which collateral is allowed – cash, financial instruments and guarantees by banks or insurance companies. Rules for the valuation of collateral are also stated. Some general rules for the re-pledging of securities borrowed are also provided.

2. Accounting and tax treatment

Both repos and equities remain on the lender's balance sheet for accounting purposes. A bank acting as a lender of securities in a repo or an equity loan transaction will have the securities remaining on the assets side and the transaction will be registered either as "liabilities to financial institutions" or "borrowing from the public", depending on who the counterparty is. The proceeds from the lending will be registered as cash positions, if they are not used for the funding of any other assets. For the borrower of the securities, the cash paid in the first leg of the transaction will be registered as lending. The securities borrowed are regarded as collateral for the lending, thereby they are not to be found in the party's balance sheet.

This balance sheet treatment means that parties active on the repo market will have large volumes of lending and borrowing stemming from repo transactions on both sides of their balance sheet. The Swedish banks would like to be able to net contracts with the same counterparty, in order not to get unreasonably large balance sheets. The reasoning is that the balance sheet should reflect the actual lending positions, not the notional volume of outstanding contracts. This is, however, not possible at the moment.

No taxation issues have come up as either a driver or an impediment to the market. It is, however, claimed that taxation problems in other Nordic countries are driving some of their markets to Sweden.

Switzerland

1. Overview

In Switzerland, securities lending activities such as defined in this report might be summarised by two elements. First, the growth of securities loan transactions has been quite impressive since the early 1990s. Second, repos were introduced in April 1998. A straight-through processing of repo transactions within a full electronic market will be launched in mid-1999. The main factors behind the evolution of securities lending activities are the favourable capital adequacy rules and the successive easing of the tax treatment. Some work within the Swiss financial community has been undertaken in order to clarify taxation and accounting issues, the two being highly correlated.

2. Regulatory issues

No specific regulations govern securities lending activities in Switzerland. Hence, the relevant rules pertaining to such transactions are to be found in the *Implementing Ordinance on Banks and Saving Banks* (May 1972, with subsequent amendments). Three domains have a direct implication for securities lending activities: capital adequacy rules (Art. 12g), risk diversification rules (Art. 21i) and liquidity requirements (Art. 19). The first regulates credit risk coverage in general, while the second defines the capital exposure limit tolerated vis-à-vis one unique counterparty. Finally, the third supplemented by the *Circular on liquidity requirements for repo transactions* (July 1998), deals with the amount of liquid assets to be held in comparison with short-term liabilities.

The capital adequacy rules on securities lending transactions and repos assert that only the net exposure of the value between transaction exposures must be covered with capital resources provided that three conditions are fulfilled. First, the transaction must be collateralised (i.e. with cash, precious metal, commodities or securities, traded on a recognised exchange or on a representative market). Second, collateral as well as securities must be revalued at current market value on a daily basis. Third, daily margin transfers are necessary. By definition, such rules exclude buy-sellback transactions. The basic principles of the capital adequacy rules have been extended to the risk diversification rules. The liquidity requirements assert that, regarding the cash leg of bank-to-bank repos, only the difference between liability and collateral is relevant.³⁵ Hence, bank-to-bank repos benefit from a favourable treatment in this respect.

3. Legal issues

In Switzerland, contract law governs securities lending activities as a whole. Thus, the dispositions of the Code of Obligations and of the *Swiss Debt Enforcement and Bankruptcy Law* apply whenever appropriate. In order to make the legal framework more precise and more predictable, the financial community has worked out different agreements. Pertaining to securities lending, the *Swiss Securities Lending and Borrowing Agreement* is in use. As far as repo transactions are concerned, the *Swiss General Agreement for Repo Transactions* (i.e. among market participants) and the *Agreement on the Settlement of Repurchase Transactions* (i.e. contractual link of market participants with Swiss Securities Clearing Corporation – SEGA – and Intersettle) apply. These contracts have been substantially derived from the international standard agreements such as the PSA/ISMA Agreement or the OSLA, and adapted to peculiarities of Swiss law. Note also that Swiss banks apply their own standardised contracts with their customers.

From a legal point of view, repos can be considered as two distinct purchases while securities lending transactions are considered as loans. In both cases, a transfer of ownership occurs, but the economic benefits (e.g. dividends, coupon payments, etc.) remain with the beneficial owner (the seller of the

³⁵ More precisely, at the aggregate level, only the net exposure, if any, is subject to liquidity requirements.

securities). Hence, the buyer of securities has to compensate the seller of securities through manufactured payments. Buy-sellback transactions are also considered as two distinct purchases, but, in this case, ownership and economic benefits are transferred to the securities purchaser, which also takes the market risks.

The Swiss National Bank has been authorised to conduct repos since November 1997 (amendment to Art. 14 of the Law on the Swiss National Bank). This has been a decisive element for the emergence of the Swiss repo market in April 1998. The diversification of monetary policy instruments as well as counterparty risks explain the Swiss National Bank's interest in boosting the Swiss repo market.

4. Taxation issues

In Switzerland, various circulars have been issued by the Federal Tax Authority: *Circular on Stamp Duty for Securities Loans* (September 1983), *Circular on Withholding Tax for Coupon Payments* (May 1990), *Circular on Securities Loans with Securities Subject to Withholding Tax* (May 1990), *Circular on Repo Transactions* (December 1998). These circulars provide rules on taxation issues. Repos, securities loans and buy-sellback transactions have a different tax treatment. Stamp duty (i.e. securities tax turnover) and withholding tax on interest earnings as well as on manufactured payments are the main taxation events that affect such activities.

- On the one hand, the stamp duty has not been applied to securities loans since 1983 as such operations do not imply a transfer of the economic benefits. Recognised as cash funding instruments, repos have been exempted from taxation since 1997. On the other hand, this tax applies to buy-sellback transactions in general (note that exemptions also exist, such as all operations undertaken by professional dealers from and into their trading inventory).
- Regarding repo transactions, withholding tax applies on earned interest (i.e. repo rate, interest on cash margin, interest on arrears) if the interest debtor is Swiss. More precisely, if the cash provider is a non-bank and if the cash taker is a Swiss bank, then the withholding tax applies to repo rates. In all other cases, it does not apply. Note, however, that there is no withholding tax on fees paid on securities bank loans.
- The withholding tax regime on manufactured payments is essentially the same for securities loans and repos. Depending on the foreign jurisdiction, the Double Taxation Agreement applies with a foreign counterparty.

Value added tax does not apply to securities lending activities. However, the earnings resulting from depository and administrative services such as offered by SEGA, the Swiss CSD, are subject to this tax. Income tax applies to the interest or fees earned by the lender, while they are a deductible expense for the borrower. In principle, wealth and capital gains taxes do not apply to securities lending activities.

5. Accounting treatment

In Switzerland, there are three accounting methods for repos: as swaps, as securities loans, and as collateralised advances. These methods may have different consequences in terms of tax treatment and liquidity requirements. For the time being, it is still under discussion whether a single accounting method should be applied.

United Kingdom

1. Regulatory framework

Both the present and the proposed financial services legislation in the United Kingdom regard conducting business in stock borrowing and repo as activities that may be conducted only by

authorised firms. The legislation does, however, recognise stock lending and repo as wholesale business, leaving it subject to a lighter regulatory regime (the London Code) than for retail business. Supervision of individual firms participating in the market is conducted by the Financial Services Authority. In addition, the London Stock Exchange retains an interest in the regulation of equity lending and repo since these have to be conducted as on-exchange transactions to attract Stamp Duty relief. The Companies Act provides securities loans with certain exemptions from disclosure provisions that normally require investors to disclose changes in holdings of 3% or more of a company's stock.

The Stock Lending and Repo Committee – a consultative, not a regulatory body chaired by the Bank of England – provides a forum to bring together market participants. The SLRC has provided codes of conduct for gilt and equity repo, and has promoted the use of legal master agreements and standard annexes.

The EU Capital Adequacy Directive provides a framework to ensure that banks and securities firms hold adequate capital against the credit risk in this business, taking into account the effects of collateralisation.

2. Accounting and tax treatment

A loan or repo of securities does not constitute a taxable event (although any dividend income may do so). The disposal of the securities is ignored for the purpose of tax on both income and capital gains, and for the purposes of UK Stamp Duty – as long as the transaction is regarded by the Inland Revenue as an “approved arrangement”. The securities eventually returned must be of the same type. For overseas securities, the agreement must be evidenced in writing and any tax liability is focused on the approved intermediary and collection agents.

Securities lent or sold under repo continue to appear on the lender's balance sheet, and are not shown on the balance sheet of the borrower. Cash borrowed or taken as collateral is also shown on the balance sheet – but securities taken as collateral are not.

Buy-sellback transactions are also treated under the “no disposal” rule, if an approved arrangement. The Finance Act 1994 brings certain buy-sellback transactions within the scope of manufactured dividends provisions, since usually a separate payment is not made in lieu of a dividend or interest payment becoming due during the course of the transaction, or for an identifiable amount to be taken into account when settling the repurchase price.

3. Legal framework

A standard legal agreement is used for most transactions – for repo, the PSA/ISMA Master Repo Agreement with relevant annex; for lending of domestic securities, the Gilt-Edged/Equity Stock Lending Agreement – GESLA/ESLA; for lending of international securities, the Overseas Stock Lending Agreement – OSLA. For gilt repo, an annex is used that covers special features of gilts, including the delivery-by-value feature in the CGO. Overseas agreements may be used for some transactions – for instance, the French “pension livrée” agreement. Where there is no master agreement used, a transaction is documented only by confirmations of each leg of a trade (known as an “undocumented buy/sell”).

In the United Kingdom, securities lending and the provision of associated collateral are undertaken on the basis of a title transfer approach (rather than pledge). Stocks lent are transferred against an obligation by the transferee to return equivalent securities on the maturity of the loan. Full legal ownership and beneficial interest in the stock is transferred. In the event of the insolvency of one of the parties to a stock lending agreement, English law provides for full set-off of mutual debts, ensuring the non-defaulting party can take immediate action in respect of the stock or collateral held. It also provides for treatment of manufactured or synthetic dividends.

Most transactions are done under UK law. The standard UK legal agreements provide for secure transfer of title to the securities lent, and administration is relatively easy (for instance, there is no pledge registration requirement). There are still some conflict of law risk issues, particularly in transactions involving certain emerging markets where there is no developed legal infrastructure.

United States

As the practice of securities lending has developed in the United States, so too has the legal, regulatory and tax framework within which market participants structure their securities lending transactions. This framework has been designed to reduce the costs for market participants to lend or borrow securities and to facilitate timely settlement of securities transactions. Legal, regulatory and tax issues that arise in each securities lending transaction vary depending on the type of organisation involved. Listed below are the most significant US regulations and how they apply to more common participants in the US securities lending market.

1. Tax treatment

Relevant to all participants in the US securities lending market is Section 1058 of the Internal Revenue Code. Section 1058 governs the tax treatment of securities transfers. Specifically, it provides that no gain or loss is recognised on the transfer of securities made pursuant to a written agreement which meets certain requirements. To qualify for non-recognition treatment, the agreement must, among other things:

- (i) provide for the return to the securities lender of securities identical to the securities loaned;
- (ii) require that payments be made to the securities lender in amounts equal to all interest, dividends, and other distributions which the owner of the securities is entitled to during the period of the loan;
- (iii) not reduce the risk of loss or opportunity for gain of the securities lender in the securities loaned; and
- (iv) allow the securities lender to terminate the loan on notice of not more than five business days.

2. Legal and regulatory framework

Private pension and benefit plans often act in the capacity of principal lender pursuant to securities lending transactions. These private pension and benefit plans are governed by the Employee Retirement Income Security Act of 1974 (“ERISA”). The United States Department of Labor has promulgated “Prohibited Transaction Class Exemption 81-6” which permits an employee benefit plan to lend securities to a broker-dealer registered under the Securities Exchange Act of 1934 or to a bank, provided certain conditions are met. Additionally, the Department of Labor promulgated “Prohibited Transaction Class Exemption 82-63,” which allows the payment of compensation under certain conditions to a plan fiduciary for securities lending services rendered to the plan.

Insurance companies and public funds must determine as a threshold matter, under state law, if securities lending is a recognised practice and if securities lending is regulated as an investment or as a loan. The National Association of Insurance Commissioners has drafted a “Model Act” which permits insurance companies to enter into securities lending transactions pursuant to certain requirements. Whether or not the Model Act governs a securities lending transaction by an insurance company depends on whether the state insurance commission within which the insurance company operates has adopted the Model Act. Among other things, insurance companies and public funds engaging in securities lending transactions must determine if there are any restrictions on the investment of cash collateral and how securities on loan are treated for purposes of minimum capital requirements.

Mutual funds are governed by the Investment Company Act of 1940. Mutual funds that engage in securities lending may be required to comply with the following conditions, which are laid out in a series of no-action letters issued by the US Securities and Exchange Commission's staff:

- (i) a mutual fund may not lend portfolio securities unless authorised by its investment policies;
- (ii) the mutual fund's prospectus must disclose that one of its policies is lending portfolio securities, and that the mutual fund may have to call the loan to vote;
- (iii) absent an exemptive order from the Securities and Exchange Commission, a mutual fund generally may not lend its portfolio securities to affiliated persons;
- (iv) the mutual fund must be able to terminate the loan at any time;
- (v) the mutual fund's board of directors must call the loan or otherwise obtain rights to vote or consent on material events which might affect the value of securities on loan; and
- (vi) the mutual fund must receive at least 100% collateral from the borrower. Acceptable collateral is limited to cash, government securities, irrevocable bank letters of credit, and certain guarantees. The collateral must be marked-to-market daily, and the borrower must provide additional collateral if the collateral's market value on any day is less than 100% of the value of the loaned securities.

With respect to securities lending activities, financial institutions, such as banks, are supervised and regulated by their respective bank regulatory agencies, e.g. state member banks are regulated by the Board of Governors of the Federal Reserve System (Federal Reserve). In 1985, the Board of Directors of the Federal Deposit Insurance Corporation adopted the Federal Financial Institutions Examinations Council's ("FFIEC") "Supervisory Policy Statement on Securities Lending", which has also been adopted by both the Office of the Comptroller of the Currency, the regulator of national banks, and the Federal Reserve, the regulator of state member banks and bank holding companies. The FFIEC's "Supervisory Policy Statement on Securities Lending" provides general guidance to insured depository institutions that are lending their securities or their customers' securities to broker-dealers, commercial banks, and others. It requires institutions to establish written policies and procedures for their securities lending operations in the following areas: recordkeeping, administration, credit analysis, credit limits, collateral management, and the use of finders. For capital treatment purposes, securities lending and borrowing are recognised as financing or banking book transactions and are therefore subject to US risk-based capital rules for credit risk.

Broker-dealers, the predominant borrowers of securities in the United States, are subject to the rules and regulations of both the Securities and Exchange Commission and the Federal Reserve. Rule 15c3-3 under the Securities Exchange Act requires broker-dealers to promptly obtain and thereafter maintain physical possession or control of all fully-paid and excess margin securities carried by a broker-dealer for the account of customers. For purposes of Rule 15c3-3, the term "customer" includes any person or entity that lends securities to a broker-dealer, whether or not it maintains an investment or trading account with that broker-dealer. As a result of the possession and control requirements of Rule 15c3-3, broker-dealers, in the absence of an exemption, would not be permitted to deliver borrowed customer securities. However, under subparagraph (b)(3) of Rule 15c3-3, a broker-dealer is not in violation of the possession and control requirements of Rule 15c3-3, and is permitted to deliver borrowed securities, if the broker-dealer executes a written agreement with the lender that makes certain representations required by the Rule.

Federal Reserve Regulation T governs extensions of credit by and to brokers and dealers. It imposes, among other obligations, initial margin requirements on securities transactions. Under Regulation T, a broker-dealer may borrow or lend securities without margin restrictions for the purpose of making delivery of securities in the case of short sales, failure to receive securities required to be delivered, or other similar situations (banks and other lenders are also subject to federal margin requirements under Federal Reserve Regulation U).

3. Accounting treatment

Each lender and borrower records securities lending transactions on their balance sheets according to the rules and regulations by which they are governed. In the United States, the accounting protocol for lenders and borrowers as well as government entities engaged in securities lending is set forth in Financial Accounting Standards Board (FASB) Statement Number 125 and Government Accounting Standards Board (GASB) Statement Number 28, respectively. FASB Statement No. 125 provides consistent accounting and financial reporting standards for lenders and borrowers, and distinguishes transfers of financial assets that are sales from transfers that are secured borrowings. GASB Statement No. 28 establishes accounting and financial reporting standards for securities lending transactions in which governmental entities transfer their securities to broker-dealers and other entities for collateral.

Annex 5

Table 1
Major features of SSS relating to securities lending transactions

Location	System	Types of securities ¹ (G,C,E or O)	Gross (G) or net (N) settlement		Settlement ² finality	Delivery vs. payment (DVP)	Delivery vs. delivery (DVD)	Re-register securities	Memo items: general market information	
			Payment	Delivery					Lending settlement intervals	Normal settlement intervals
Australia	RITS	G	G	G	7:00-8:45, 9:15-16:30 ³	Y	N	Y	T+1 ⁴	T+3
Australia	Austraclear	G, C, O	G	G	7:00-16:30	Y	N	Y ⁵	T+0 ⁶	T+3
Belgium	NBB	G (other public)	G	G	8:00 and hourly between 10:00 and 16:00	Y	Y	N	T+0	T+2; T+3 ⁷
Canada	CDS	G, C, E, O	G	G, N ⁸	Real time for govt. bonds and money market instruments, three cycles per day for equities and others	Y	N	N	T+0	T+3
France	RELIT	G, C, E	N	G/N	Multi-batch processing (last: 16:30)	Y	N	Y/N	T+1	T+3
France	RGV	G, C, O	G	G	20:00 on S-1 to 17:00 on S	Y	N	N	T+1	T+3, T+1 ⁹
Germany	DBC	G, C, E, O	G, G/N	G	10:30, 13:15	Y	N	Y	T+0 to T+1	T+1

¹ G = government securities, C = corporate bonds and other (including government-guaranteed) securities, E = equities, O = others, such as money market instruments. ² Refers to when settlement finality occurs in the system. ³ The former is for bank members only, and settlement of cash transactions only. On the other hand, the latter is for all members and for all transactions. ⁴ Reserve Bank repo transactions are settled on T+0. The majority of repo trades are settled at T+2, although parties may agree on almost any form of non-standard settlement time. ⁵ Austraclear does not recognise transactions as repos, as such. Each repo transaction must be completed as two outright trades. However, Austraclear also allows members to place an "encumbrance" or mortgage over securities held by Austraclear rather than entering into two outright trades. ⁶ Austraclear's system allows parties to a trade to insert their own settlement date. Most Repo transactions settle on T+0. ⁷ Money market instruments settle on T+2. Medium and long-term bonds settle on T+3. ⁸ G for government bonds and money market instruments and N for others. ⁹ For money market instruments.

Location	System	Types of securities ¹ (G,C,E or O)	Gross (G) or net (N) settlement		Settlement ² finality	Delivery vs. payment (DVP)	Delivery vs. delivery (DVD)	Re-register securities	Memo items: general market information	
			Payment	Delivery					Lending settlement intervals	Normal settlement intervals
Hong Kong	CCASS	E	N	G/N	10:30-15:45 ¹⁰	Y ¹¹	Y	Y	T+0 to T+N ¹²	T+2
	LDT	G, C, E	N	N	12:30	Y	Y ¹³	N	T+0, T+1, T+2 ¹⁴	T+5, T+3 ¹⁵
Italy	Monte Titoli	C, E	G	G	Real time	Y ¹⁶	N	N	T+0	T+5, T+3 ¹⁵
Italy	CAT	G	n.a.	G	Real time	n.a.	N	N	T+0	T+5, T+3 ¹⁵
Japan	BOJ-NET	G	G/N	G/N	15:00 for designated settlement time; real time	Y	N	Y ¹⁷	T+2/T+3 to T+5 ¹⁸	T+3
	JGB Services									
Japan	JASDEC	E	G	G ¹⁹	9:00 for designated settlement time; real time	N ²⁰	N	N ²¹	T+2	T+3
Japan	JBNet	C	G	G	15:00	Y	N	Y	n.a.	T+5 ²²
Malaysia	MCD	E	N	N	By 9:00 (for delivery) and by 10:00 (for payment) on T+5 ²³	Y	Y	Y	T+5	T+5
Mexico	INDEVAL	G, E, O	N	G	Real time	Y	Y	N	T+0	T+2 ²⁴

¹⁰ Settlement will end at 16:15 after the implementation of the compulsory borrowing programme. ¹¹ The linkage with the HKMA's Real-Time Gross Settlement Systems in May 1998 brought about real-time DVP for securities borrowing and lending transactions. ¹² It is solely subject to the agreement between the two parties to the transactions. ¹³ DVD transactions are settled on a multilateral basis (BIS Model 3) along with other transactions. ¹⁴ Government bond buy-sellback transactions executed on the regulated MTS-PCT market settle on T+2 (via LDT); other lending transactions generally settle on T+0 (via CAT and Monte Titoli) or on T+1 (via LDT). ¹⁵ Settlement of outright equity trades occurs on T+5 and government bond trades on T+3. ¹⁶ DVP will be operational as from the second half of 1999. ¹⁷ BOJ-NET JGB Services provides book-entry service (JGB book-entry system) and registration service (JGB registration system). When JGBs are held in the registration system, JGBs borrowed are registered under the name of the borrower at the registrar, the Bank of Japan. In the book-entry system, "package registration" of securities deposited by participants is made on the JGB registration book under the name of the Bank of Japan (depository of the book-entry system). When JGBs are held in the book-entry system, JGBs borrowed are transferred to the borrower's account in the system. ¹⁸ General Collateral (GC) transactions, in which securities lent are not specified, are settled on T+2 in most cases. Special Collateral (SC) transactions, in which securities lent are specific issues, are usually settled on T+3 to T+5, the same (or longer) cycle as purchase transactions. ¹⁹ Securities transactions are settled on a gross basis at the JASDEC, but securities transactions at the Tokyo Stock Exchange are netted at the Japan Securities Clearing Corporation (a subsidiary of the TSE) before settlement data are sent to the JASDEC. ²⁰ Introduction of DVP is currently under discussion. ²¹ Equities deposited at the JASDEC are registered at an issuing company under the name of the JASDEC. Equities borrowed are transferred to the borrower's account in the JASDEC. ²² A shift to a shorter settlement interval of T+3 is currently under examination. ²³ Settlement cycle for securities lending transactions is similar to that for the outright sale and purchase of securities. Process described above refers to the settlement process known as "ready-basis", by which securities are settled under normal circumstances. Selling client must have requisite shares standing to the credit of his Central Depository System (CDS) account by 12:30 p.m. on T+4. ²⁴ Applicable to equities and outright purchases/sales of government securities. Repo transactions are usually settled on T+0.

Location	System	Types of securities ¹ (G,C,E or O)	Gross (G) or net (N) settlement		Settlement ² finality	Delivery vs. payment (DVP)	Delivery vs. delivery (DVD)	Re-register securities	Memo items: general market information	
			Payment	Delivery					Lending settlement intervals	Normal settlement intervals
Netherlands	AEX-SCC	G, C, E	N	N	7:00-9:30 on T+3 ²⁵	Y	N	N	T+0	T+3
Spain	SCLV	E	N	G	10:00 on T+3	Y	N	Y	T+0	T+3
Spain	CADE	G	G	G	16:00 on T+0, 18:00 on T+1	Y	N	Y	n.a.	T+0, T+1, T+3
Sweden	VPC	G, E, O	G/N	G	Net at 12:45; real time all day	Y	N	Y	T+0, T+1 ²⁶	T+2, T+3 ²⁷
Switzerland	SEGA	G, C, E, O	G	G	Real time	Y	N	N	T+0	T+3
United Kingdom	CGO ²⁸	G, C	N	G	Real time	Y	N	Y	T+0	T+1
United Kingdom	CMO	O	N	G	Real time	Y	N	N	T+0	T+0
United Kingdom	Crest	C, E	N	G	Real time	Y	N	Y	T+0	T+5
United States	Fedwire	G	G	G	Real time	Y	N	N	T+0	T+0
United States	DTC	C, E, O	N	G	16:30 (EST)	Y	N	N	T+0	T+3
ICSD	Euroclear	G, C, E, O	G	G	Multi-batch processing ²⁹ (20:00 on S-1, 23:00 on S-1 and 14:00 on S)	Y	N	Y ³⁰	Integrated into overnight batch (T+0)	Depending on respective markets' practices or custodians' intention
ICSD	Cedel	G, C, E, O	G	G	Multi-batch processing overnight, followed by daytime processing cycle	Y ³¹	N	Y ³²	Integrated into the overnight process and subsequent daytime process (T+0)	According to the relative market convention

²⁵ The Dutch securities settlement system (Necifef) does not provide securities lending facilities. However, the Amsterdam Exchange-Securities Clearing System (AEX-SCC), the clearing system of the stock exchange, has an automated securities lending system, which aims to avoid non-settlements through the automatic securities lending by AEX, central counterparty of the exchange-traded transactions, to a clearing member in a short position on the settlement date (T+3). With the help of this facility, all AEX-traded transactions are settled in the morning settlement hours of T+3 (=S). ²⁶ Equity lending transactions settle on T+1 while government bond loans settle on T+0. ²⁷ Treasury bills settle on T+3. ²⁸ There is a plan to merge these three systems in the United Kingdom (CGO, CMO and Crest) in the near future. ²⁹ Introduction of Real-Time Settlement from September 1999 (6:00-18:00 on S). ³⁰ Securities registered in nominee name where relevant. Registration in beneficial owner name possible through relevant Euroclear depository. ³¹ Introduction of Continuous Settlement from July 1999 (7:45-15:45 on S). ³² Securities registered in appropriate Nominee name depending upon local regulatory regime.

Table 2
Securities lending related facilities in selected settlement systems

Location	System	Securities lending related facilities					
		Loan matching	Loan identification	Collateral management	Income distributions	Automatic lending services	Other services
Australia	RITS	N	N	N	N	N	Y ¹
Australia	Austraclear	N	N	N	N	N	N
Belgium	NBB	N	Y	N	Y	Y	N
Canada	CDS	N	N	N	N	N	N
France	RELIT	N	N	N	N	N	Y ²
France	RGV	Y	Y	Y	Y	N	Y ²
Germany	DBC	Y	Y	Y	Y	N	Y
Hong Kong	CCASS	N	N	N	N	N	Y ³
Italy	LDT	Y	Y ⁴	N	N	N	Y ⁵
Italy	Monte Titoli	N	N	N	N	N	N
Italy	CAT	N	N	N	N	N	N
Japan	BOJ-NET; JGB Services	N	N	N	N	N	N
Japan	JASDEC	N	N	N	N	N	N
Japan	JBNet	N	Y ⁶	N	N	N	N
Malaysia	MCD	N	N	Y	N	N	N
Mexico	INDEVAL	Y	Y	Y	Y	Y	N
Netherlands	AEX-SCC	N	N	N	N	Y ⁷	N

¹ Government bond buy-sellback transactions executed on the regulated MTS-PCT market are identified by the matching system; intermediaries are allowed (not obliged) to identify OTC buy-sellback transactions. ² Tax related services. ³ CCASS provides an electronic bulletin board so that borrowers and lenders may identify prospective counterparties. (This limited service has not supported market demand.) CCASS is working towards the provision of a centralised borrowing and lending service later this year. ⁴ Government bond buy-sellback and repo transactions executed on the regulated MTS-PCT and on the OTC market are identified by the matching system. ⁵ "Return leg" and repo interest of MTS-PCT buy-sellback transactions are automatically settled on the term date. ⁶ JBNet provides a service which enables participants to instruct the initial and return legs of a securities lending transaction at the time instruction for the initial leg is made. ⁷ The Dutch securities settlement system (Necigef) does not provide securities lending facilities. However, AEX-Securities Clearing System (AEX-SCC), the clearing system of the stock exchange, has an automated securities lending system.

Location	System	Securities lending related facilities					
		Loan matching	Loan identification	Collateral management	Income distributions	Automatic lending services	Other services
Spain	SCLV (only for settlement fails)	Y	Y	Y	Y	Y	N
Spain	CADE	N	N	N	N	N	N
Sweden	VPC	N	Y	N	N	N	N
Switzerland	SEGA	Y	Y	Y	Y	Y	N
United Kingdom	CGO	Y	Y	Y	N	N	Y ⁸
United Kingdom	CMO	Y	Y	Y	N	N	Y ⁸
United Kingdom	Crest	Y	Y	Y	N	N	Y ⁸
United States	Fedwire	N	N	N	N	N	N
United States	DTC	N	Y ¹²	N	Y ¹²	N	N
ICSD	Euroclear	Y ⁹	Y	Y	Y	Y	N
ICSD	Cedel	Y ¹⁰	Y	Y	Y	Y	Y ¹¹

⁸ DBV. ⁹ Use of pool concept with borrowing allocated pro rata to lenders. ¹⁰ Fully integrated within the settlement process, in which there is a chaining process to ensure that the maximum number of transactions in a chain will settle. ¹¹ E.g. "Strategic Securities Lending", where Cedel lends signed-up customer portfolios of securities into the professional markets. ¹² Only on a voluntary basis.

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