



The Swedish Financial Market

2014



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Or from the web site: www.riksbank.com

Production: Sveriges Riksbank

Print: Printfabriken

ISSN 1401-7348

Stockholm 2014

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■ Foreword

The Swedish Financial Market is a description of various roles and functions in the Swedish financial system. The publication is divided into three chapters: financial markets, financial intermediaries and financial infrastructure. It is published once a year and is largely based on annual statistics.

In publishing *The Swedish Financial Market*, the Riksbank is endeavouring to contribute to increased knowledge of the financial system and its functions. The publication is designed to serve a dual function; as a “reference book” for those needing statistical information and a simple “textbook” for those who wish to learn more about Sweden’s financial system. This means that the publication is directed at a broad readership, ranging from professionals to students and members of the general public with an interest in the subject.

The description of the financial markets, which is the first chapter of the publication, is divided into sections on the fixed-income market, the foreign exchange market and the equity market. This provides an account of how trading takes place. In addition, there is a presentation of the various marketplaces and the different types of securities traded in these marketplaces, for example equities and bonds. The second chapter is devoted to important financial intermediaries. These include banks, insurance companies, fund management companies, securities companies and private equity and venture capital companies. The final chapter describes the financial infrastructure used for payments and securities transactions in Sweden.

As the title indicates, the descriptions are confined to the Swedish financial system. This distinction may be difficult to make at times, as the activities of the financial companies are becoming increasingly internationalised. In order to give this publication a natural set of Swedish parameters it is based on national statistics compiled for Swedish financial legal entities.

Stockholm, August 2014

Emma Brattström
Editor

■ Introduction – The roles of the financial system

The financial system has three main roles: to convert savings into funding, to manage risks and to make it possible for payments to be made efficiently.

CONVERTING SAVINGS INTO FUNDING

Both private individuals and companies need to borrow money. Young people may need to borrow money to invest in housing and education. Companies may need to borrow to fund a project or to realise an invention. At the same time, there are people who want to save for pensions or consumption. There are also companies that want to save for investments.

The conversion of savings into funding would be inefficient if every saver had to seek out and analyse suitable business projects to invest in. It would be equally inefficient if every single entrepreneur was forced to seek out a large number of potential investors for his or her projects. The financial sector plays a key role in this context by helping to channel savings into investments as efficiently as possible.

The capital market is the supply channel that makes it possible for companies, households, organisations and governments to access capital for investments and operations. Put another way, this market helps investors to find interesting investment opportunities. The capital market consists of the equity market and the credit market. Governments primarily fund their activities on the credit market, for example by issuing bonds¹, while certain companies can also find capital by turning to the equity market. In terms of value, the significance of the equity market in Sweden and many other countries is relatively limited in comparison to that of the credit market. The most usual way for companies and households to gain access to the capital market is to turn directly to a financial intermediary.

A financial intermediary is a specialised middleman, from which all parties can benefit. The clearest example of such a financial intermediary is a bank. Savers who, for example, want to even out their consumption over their lifetimes can deposit money in a bank

¹ A bond is a debt instrument in the form of an agreement to lend money that is subsequently repaid with interest.

account and withdraw it (plus interest) at a later date. They can also invest their money in equities, debt securities or funds on the Swedish market or on foreign markets. This in turn means that the banks must turn to the global interbank and securities markets to fund their operations.

The money that comes into the banks in the form of deposits and other funding is mediated to companies and private individuals that need to borrow. Banks are specialists in valuing, monitoring and managing credit risks for the private individuals and in the companies to which they lend. Banks can make use of economies of scale while, at the same time, solving the saver's problem of *asymmetrical information*, which means that the saver (the lender) and the borrower do not have the same access to information. With a bank as an intermediary, the borrower does not have to convince the lender of their own or their project's creditworthiness – it is sufficient to convince the bank alone. Similarly, the saver does not need to determine the creditworthiness of every borrower; it is enough to be convinced that the bank can meet its obligations. The financial sector – in this simplified case represented by a bank – thus contributes to a more efficient mediation of capital in the economy. Other examples of financial intermediaries are mortgage institutions and finance companies.

However, it is not always the financial intermediaries that mediate funding most efficiently. It is sometimes more efficient for companies to turn directly to the capital market and borrow money by issuing bonds and money market instruments.² By using these standardised securities³, which can easily be bought and sold on a market, funding can become even more efficient. In simple terms, the *issuers* of bonds and other debt instruments thus correspond to the banks' borrowers.

Organised trading in securities with clear regulations and a high degree of standardisation contributes to an efficient market and effective pricing. When many participants monitor, analyse and trade in the instruments existing in the market, the overall level of information and transaction costs can be reduced. It becomes easier to assess the value of a financial service, such as a loan, and thus set a price for it. At the same time, the risk borne by investors decreases because day-to-day trading makes it easier to sell securities.

² Money market instrument is a collective term for debt securities that are usually issued with maturities of up to one year.

³ Securities is an overall term for equities, bonds and other financial instruments that represent an economic value and that can be traded.

Equities are another common example of standardised securities. Unlike bonds and other debt instruments, equities do not generate interest. Instead, they represent shares in a company and the return is determined by the future distributed profits of the company. Given that these profits may vary considerably from year to year, those who invest in equities normally accept a higher risk than investors in, for example, government bonds. Thus, unlike the credit market, the equity market is usually regarded as a market for venture capital. However, due to the sovereign-debt crisis in certain euro area countries, an investment in government bonds in the most indebted countries is no longer considered to be linked with low risk and yield has thus been adjusted upwards considerably.

MANAGING RISKS

Financial intermediaries perform an important function in an economy's capital supply system, partly in their role as credit institutions and partly as investors who manage money on behalf of others. For example, unlike companies and households, credit institutions (such as banks) are specialists at assessing credit risks⁴.

Both companies and private individuals need to protect themselves against different kinds of risk. Individuals, for example, may need to insure themselves against fire or theft, which they can do using the products of non-life insurance companies. They may also need to secure their livelihood after retirement or provide for their survivors in the event of premature death. They can do this by taking out life insurance and pension insurance policies with life insurance companies. Insurance companies are financial intermediaries specialising in the assessment and management of insurance risks.

Companies may also need to protect themselves against different types of financial risk. These may relate, for example, to undesirable changes in commodity prices or in exchange rates. Financial companies that fund their operations on the global securities market need to protect themselves against interest-rate or exchange-rate risks. On the financial markets it is therefore possible to trade in contracts that are specially designed to manage risks of this kind, so-called derivatives. These derivatives include options, forwards, and swaps.

A fund management company is an example of an intermediary that helps households to manage their savings efficiently. By capitalising on economies of scale, fund management companies can construct portfolios of securities (mutual funds) where the risks of

⁴ Credit risk refers to the risk of borrowers failing to meet their commitments.

each individual security can be spread (diversified). The financial sector does not thus simply play a role in the mediation of capital, but also contributes to more effective risk management.

EFFICIENT AND SAFE PAYMENTS

In addition to mediating capital flows and managing risks, the financial companies create the conditions for the efficient processing of payments in the economy. The smooth, rapid and secure conduct of financial transactions is a precondition if the economy as a whole is to function efficiently. Financial transactions refers to payments between banks and other financial institutions (usually of large amounts) as well as to payments between private individuals and/or companies (usually of comparatively smaller amounts).

By using the existing financial infrastructure, the banks and other financial institutions can make payments to each other and support private individuals and businesses with different types of payment services. Such services include accounts and different routines for making payments between different financial institutions. Charge cards, credit cards and transfers between accounts are now common, enabling goods and services to be exchanged smoothly and economically.

THE INTERACTION BETWEEN INTERMEDIARIES, MARKETS AND AUTHORITIES

It is in the interests of society that the financial system as a whole functions safely and efficiently for private individuals, companies and other market participants. Good interaction between intermediaries, markets and the financial infrastructure is a precondition for this. Problems can arise in the financial system if this interaction does not work.

Banks play a central role in the financial system in their function as intermediaries. As Swedish banks normally obtain funding at short maturities and lend at longer maturities, liquidity risks arise in their operations. This means that their liabilities fall due more often and must be renewed more frequently than their assets. The banks are therefore dependent on having ongoing access to funding. As a large part of the funding is secured on the financial markets, the banks are dependent on liquid markets.

However, liquidity shortages can arise on the securities markets. This happens when the securities become illiquid, that is when the value of the assets traded on the market has become so uncertain that

the market participants hesitate to set prices, and in some cases refrain from doing so. In other words, it becomes problematic to convert the securities into liquid funds. This in turn may lead to problems for banks and companies that are dependent on obtaining market funding. They may have problems adjusting their financial positions and valuing their holdings, which complicates their portfolio and risk management.

Banks also fund their operations by borrowing from each other. This means that problems at one bank can easily spread to other banks. Uncertainty about the creditworthiness of another bank's loan portfolio may therefore make it difficult for a bank to get funding. A bank can reduce its credit risk, and as far as possible ensure that it will get its money back, by choosing its borrowers carefully.

However, liquidity risk is more difficult to manage as it is dependent on the market at large and on the depositors' confidence in the bank. The banks' increased dependence on the markets for their risk management and funding means that they are also more sensitive to liquidity problems in these markets. Liquidity shortages have arisen on a number of occasions. This happened, for example; during the stock exchange crash of 1987, when the hedge fund LTCM failed in September 1998 and in conjunction with the terrorist attack on the World Trade Center on 11 September 2001. Liquidity shortages also arose on several occasions in connection with the latest financial crisis, 2008-2009, when trading on a number of markets came to a complete halt, at least temporarily.

The stability of the financial system is based on the confidence of both the public and the market. If confidence weakens, it may be difficult for the banks to conduct their operations, in which case the system will be in danger. The basic requirements for confidence are sound institutions and efficient markets.

A serious crisis in the financial system is liable to entail extensive economic and social costs. The authorities therefore have an important role to play in the financial system in avoiding or, when necessary, managing a crisis. One of the primary tasks of the Riksbank is to "promote a safe and efficient payment system". The Riksbank therefore continually analyses risks and threats to the stability of the financial system, both as a preventive measure and in crisis situations. In both cases, the interaction between different authorities is important. The Riksbank therefore cooperates closely with Finansinspektionen (the Swedish Financial Supervisory Authority) the Ministry of Finance and the Swedish National Debt Office (see the box Supervision and regulation of the financial sector in Sweden).

As financial companies now increasingly work across national borders, cooperation between authorities in different countries and with other international bodies is also of central importance.

Supervision and regulation of the financial sector in Sweden

Companies in the financial sector provide services that are important to the functioning and the growth of the economy, and thus support the basic functions of the financial system. If the financial companies encounter problems, for example during a financial crisis, this may affect the entire economy. It may, for example, become more difficult to get credit, which could reduce the companies' ability to invest. This in turn could lead to higher unemployment. The stability of a country's financial system is thus important and justifies the system being subject to special regulations. To prevent financial crises, special regulations have therefore been introduced for companies that conduct financial operations or provide parts of the financial infrastructure. The aim of the regulations is to ensure that the financial companies have sufficient resilience to avoid bankruptcy and can manage the risks that arise in their operations.

Another reason is to protect the assets and interests of the

consumers in relation to the financial companies.

In Sweden, it is the Riksdag (the parliament) and the government that decide on these rules, laws and regulations and thus have ultimate responsibility for the financial system. However, responsibility for safeguarding financial stability and maintaining an effective financial system has been shared out between three authorities: The Riksbank, the National Debt Office and Finansinspektionen (the Swedish Financial Supervisory Authority). The allocation of responsibility means that the Riksbank is responsible for providing liquidity in the system. Finansinspektionen is responsible for conducting macroprudential policy⁵ and supervising the financial companies, while the National Debt Office, together with the Government Offices, is responsible for more long-term forms of support (read more about the so-called Support Act in the box Central regulations in the financial sector). Although the authorities have different

⁵ Macroprudential policy concerns reducing the risks in the financial system as a whole.

areas of responsibility, they need to cooperate to be able to effectively safeguard financial stability.

Cooperation between authorities

The Riksbank, Finansinspektionen, the Government Offices (primarily the Ministry of Finance) and the National Debt Office also play an important role in the management of financial crises. Since 2013, the authorities have been represented on the Financial Stability Council, which acts as a forum for discussions on financial stability and crisis management. The forum discusses issues relating to financial stability and the need to take measures to counteract the build-up of financial imbalances and, in the event of a financial crisis, discusses the need to take measures to manage such a situation. The Council meets regularly (at least twice a year) and the minutes of the Council's meetings are public.⁶

The increasing globalisation of the financial markets and of the participants on these markets also creates the need

to strengthen coordination with authorities in other countries with regard to the oversight and supervision of financial operations. Swedish authorities participate, for example, in the European Systemic Risk Board (ESRB) and the European Banking Authority (EBA).⁷ The tasks of the ESRB are to identify risks to the stability of the financial system in the EU as a whole and to issue warnings and recommendations in the event of serious risks. The tasks of the EBA are to promote a uniform application of the regulations in the member states and to coordinate the efforts of the national financial supervisory authorities. As a consequence of new EU regulations, Finansinspektionen and the Riksbank, together with other authorities, are also members of supervisory colleges for central counterparties.

The Riksbank

The Swedish parliament, the Riksdag, has delegated the responsibility for monetary policy to the Riksbank and stipulated in legislation that the objective of the Riksbank's activities is to maintain price stability. According

⁶ More information about the Financial Stability Council can be found on the government's website.

⁷ Swedish authorities also participate in the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA).

to the Sveriges Riksbank Act, the Riksbank should also promote a safe and efficient payment system. The Act does not describe in detail what is meant by this. However, it is clear that the Riksbank has a responsibility for the supply of cash and for providing a central payment system.

Making the payment system safe and efficient requires the financial system to be stable so that payments and the supply of capital can work well. The Riksbank, like other central banks, must therefore be able to manage financial crises and other serious disruptions to the financial system so that the payment system can continue to function, even in such situations.⁸ The Riksbank plays a special role in this because as a central bank it can rapidly supply money to the financial system if the need arises.⁹

A stable financial system is also a prerequisite for the Riksbank to be able to conduct an effective monetary policy. This is because the financial markets and how they function affect the impact that monetary policy has on the interest rates that

households and companies have to pay on their loans. Moreover, the economic consequences of a financial crisis have a direct impact on price stability, growth and employment.

“Promoting a safe and efficient payment system” thus has a broad meaning and is a matter of taking responsibility for promoting the stability of the financial system. In addition to issuing banknotes and coins and providing a central payment system, the Riksbank supports the financial system in several other ways.

Under normal conditions, the Riksbank works to prevent financial crises. The Riksbank does this by identifying, analysing and counteracting risks in the financial system as a whole, a process known as macroprudential policy. For example, the Riksbank draws the attention of banks and other participants on the financial markets to risks and efficiency losses that the Riksbank has identified. However, the Riksbank has no binding statutory tools that it can use to influence the participants in the financial system but uses

⁸ The Riksbank’s role and tasks in the work of promoting financial stability are described in the document *The Riksbank and financial stability*, which can be found on the Riksbank’s website.

⁹ This is what is meant by the term “lender of last resort”.

communication, publicly and in dialogue with the participants concerned. For example, the Riksbank publishes a Financial Stability Report twice a year and a Financial Infrastructure Report once a year. In the Financial Stability Report, the Riksbank makes recommendations to the participants in the financial system on the measures they should adopt to manage the risks the Riksbank has identified. In the Financial Infrastructure Report, the Riksbank publishes its assessments of the risks in and efficiency of the financial infrastructure, with the intent of thereby encouraging continual improvement. The Riksbank also presents its views on proposed legislation and regulations from the EU, the Swedish Government and Finansinspektionen.

Finansinspektionen

The overall tasks and objectives of Finansinspektionen are to promote stability and efficiency in the financial system and consumer protection in the financial area. It does this, for example, by issuing licences or permits, conducting supervision and issuing regulations. Finansinspektionen is the

authority responsible for the conduct of macroprudential policy and for the supervision of financial companies and marketplaces. The responsibility for macroprudential policy means that Finansinspektionen uses various instruments, for example the introduction of a mortgage ceiling, to try to promote financial stability. The form of supervision that focuses on individual financial institutions is usually called micro supervision.

Finansinspektionen is responsible for issuing licenses to companies wishing to offer financial services to the public, but it also intervenes in mismanaged companies, ultimately by withdrawing their licenses. Supervision entails Finansinspektionen overseeing that companies that conduct financial operations or provide financial infrastructure comply with the special regulations they are subject to. This task includes, for example, revealing any shortcomings in internal governance or control. If there are problems in a financial company, Finansinspektionen assesses the causes of the problems and may take measures against the company concerned.

Finansinspektionen's supervision provides the authority with information on the development of individual companies and thus on the financial sector as a whole.

In order to enable Finansinspektionen to achieve its overriding objectives, it may decide on new statutes and general guidelines – in other words, it may issue regulations. The aim of the regulations encompassing financial companies is to ensure that they have sufficient resilience to financial risks. Finansinspektionen thus requires them to have sufficient capital and to be able to manage the risks in their own operations.

The Ministry of Finance

The Ministry of Finance, which is part of the Government Offices, is responsible for legislation in the financial sector. Its objectives are stability, efficiency and a high level of consumer protection. The Ministry of Finance monitors the development of the financial system at an overall level. In a crisis, the Ministry of Finance can initiate measures if it turns out that the tools used by Finansinspektionen and the

Riksbank are not adequate. However, some of the measures that the Ministry of Finance may need to implement require a decision by the Riksdag. In accordance with the Support to Credit Institutions Act, the government also makes decisions on support in certain cases.

The Swedish National Debt Office

The Swedish National Debt Office is responsible for the government's payments and manages Sweden's national debt. The authority does this, for example, by issuing and selling government bonds and treasury bills. The National Debt Office can also issue government guarantees and loans. By being responsible for the deposit guarantee system and the bank support system, the Office also helps to safeguard the stability of the financial system.

The deposit guarantee system is an important element of consumer protection and means that the state reimburses deposits in accounts if a bank defaults. However, the deposit guarantee system does not just provide protection for consumers. It also reduces the risk of a bank run and

thus contributes to the stability of the financial system. Without a deposit guarantee, there is a risk that, in times of financial unease or when a bank is rumoured to have financial problems, bank customers will withdraw their savings to avoid losing them if the bank goes bankrupt. If many bank customers simultaneously withdraw their savings, this can lead to the bank encountering a liquidity shortage, accelerating and exacerbating the crisis.

Apart from being responsible for the deposit guarantee system, the Office is also a support authority under the Support to Credit Institutions Act. This entails responsibility for entering into support agreements and administrative duties relating to the support provided on the basis of this Act. This may include, for example, guaranteeing the banks' long-term borrowing or injecting risk capital.

■ The financial markets

The financial markets are categorised here as the fixed-income market, the foreign exchange market and the equity market. Nowadays, Swedish banks and companies operate to a great extent on global financial markets, but in this chapter we mainly concentrate on the Swedish financial markets. We describe how trading on the different markets works and the securities and instruments that are traded on the respective markets.

The three markets have different functions. On the fixed-income market and the equity market, companies, organisations and governments can access capital for, for example, investments. At the same time, these markets help investors to find investment opportunities. On the fixed-income market, this is done by the borrowers, (mainly governments, banks and companies) issuing securities at various maturities that provide investors with a return in the form of an interest rate. On the equity market, companies raise capital by issuing equity. Investors can then buy and sell the securities on the fixed-income and equity markets by trading with each other. More transactions are carried out on the equity market than on the fixed-income market, but usually at smaller amounts.

The foreign exchange market is used by a large number of participants who need to buy or sell foreign currency. This may include companies that conduct international trade and need to exchange money, or investors who want to invest abroad. The foreign exchange market is characterised by trading in large amounts, a large number of participants and the rapid dissemination of price information.

The financial markets also contribute to effective risk management. Households, companies and banks need to protect themselves against different kinds of economic risk. On the financial markets, participants can trade in special contracts with the aim of shielding themselves against unfavourable movements in rates and prices.

The fixed-income market

The fixed-income market is a market for trading what are known as debt instruments, which yield a specific predetermined return in the form of an interest rate.

The fixed-income market is often divided into a *money market* and a *bond market*. The bond market is for trading in – bonds – generally with maturities of one year and longer. Trading on the money market comprises, for example, *treasury bills* and *certificates*, usually with maturities of up to one year.

The participants are largely the same on these two markets, primarily central governments, mortgage institutions, banks and large investors such as insurance companies and pension funds. On the other hand, the purposes underlying trading on the two markets differ somewhat. In simple terms, the main purpose of the bond market is to channel long-term savings from certain participants to others in need of capital. The most important function of the money market is instead to facilitate the investment of surpluses and mediate short-term funding. In the most short-term segment of the money market (maturities ranging from one day to one week), the instruments are used to carry out daily adjustments of deficits and surpluses in the transaction accounts of the participants. As a large part of the turnover takes place in this segment, often with special contract arrangements, this area of the money market is also described in more detail.

Debt instruments are traded on the *spot market*, where payment and delivery take place immediately or within a few days of agreement on the transaction. As a complement to the instruments on the spot market, *derivative instruments*¹⁰ are also traded with debt securities as the underlying asset. These derivative instruments help the participants in the fixed-income markets, for example, to diversify and manage risks. They also enable the participants to change the fixed-rate terms for their fixed-income portfolios. As a result, investors are, in practice, unconstrained by whether a security was originally issued with a short or long maturity.

The fixed-income market can be divided into a *primary market* and a *secondary market*. The difference is that new securities are issued on the primary market, while securities are bought and sold on the secondary market. A sale in the primary market provides capital directly to the issuer of the security. It entails the issuer becoming a

¹⁰ Derivative instruments are contracts that are linked to various securities as underlying assets, and that are entered into (and traded) by the participants in the secondary market. The most common derivative instruments traded on the fixed income market include interest forwards, interest options and interest swaps.

borrower on the market. These securities may then change ownership through trading on the secondary market.

A description of the fixed-income market in Sweden is presented below, divided into a money and bond market on the basis of the original maturities that characterise these securities. We describe the issuers and investors on the markets as well as the turnover of various securities. Types of contract for the money market's shortest maturities are also described, as it becomes more impractical to use ordinary securities when maturities fall to a week or even less. The section concludes with a description of issues, trading structures and interest derivatives used on the fixed-income market.

THE MONEY MARKET – FOR SHORT MATURITIES

The money market is a collective term for markets on which interest-bearing assets that usually have maturities of up to one year are issued. One important task of the money market is to facilitate liquidity management for the participants in the economy. For example, banks need to maintain a state of preparedness for future deposits and payments. The banks therefore invest in various assets depending on their assessments of future payments. These investments can then easily be converted into liquid funds when the payments fall due.

Issuers on the money market in Sweden

The central government, the mortgage institutions and the banks are the largest borrowers on the money market. Central government borrowing on the money market takes place through *treasury bills*. Other institutions borrow by issuing *certificates* such as bank and mortgage certificates.

In 2013, the value of the total stock of money-market instruments fell by just over SEK 20 billion, amounting to SEK 268 billion at the end of the year (see Chart 1). The total stock of money market instruments issued has fallen by almost half since 2006.

A treasury bill¹¹ is a debt instrument that represents a short-term claim on the state that can be bought and sold on the money market. Treasury bills are issued by the Swedish National Debt Office and are used, among other things, to manage fluctuations in the government's short-term borrowing requirement. The outstanding volume of treasury bills fell by approximately SEK 10 billion to SEK 94 billion at the end of 2013, which is equivalent to approximately 35 per

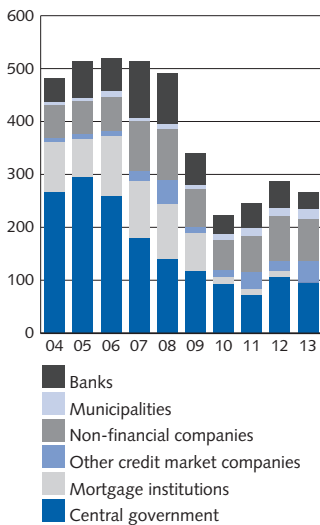
11 The treasury bill is constructed as a zero-coupon bond, i.e. a security without interest payments during the term of the bill.

cent of the outstanding stock of short-term securities. In recent years, borrowing at longer maturities through bonds has been given priority ahead of the issue of treasury bills.¹²

A certificate is the same kind of debt instrument as a treasury bill but is issued by mortgage institutions and companies, for example. The mortgage institutions' short-term borrowing through certificates has decreased significantly in recent years. The outstanding volume averaged SEK 3.3 billion in 2013. Bank certificates in krona also decreased in 2013, amounting to SEK 33 billion at the end of the year. In comparison, the mortgage institutions had the equivalent of SEK 13 billion in outstanding mortgage certificates in foreign currencies on foreign markets at the end of 2013. The corresponding figure for the Swedish banks' outstanding securities with short maturities was SEK 830 billion.

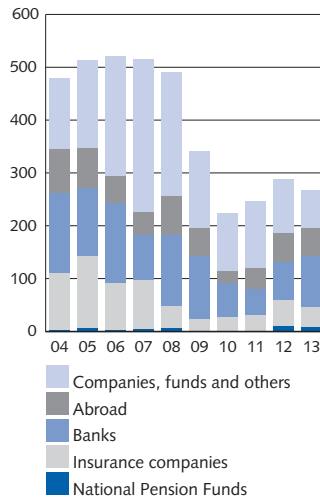
Banks and mortgage institutions match their long-term lending with long-term borrowing to a greater degree than previously, at the cost of short-term borrowing. The financial risk is reduced when liabilities and assets have similar maturities. Maturity matching of this type is something that several national and international regulatory frameworks have called for and that the participants have adjusted to.¹³

Chart 1. Issuers on the money market
SEK billion



Sources: Statistics Sweden and the Riksbank

Chart 2. Investors on the money market
SEK billion



Sources: The National Pension Funds, Statistics Sweden and the Riksbank

¹² When the government's borrowing requirement declines, the Swedish National Debt Office gives priority to maintaining a high level of liquidity in government bonds ahead of treasury bills.

¹³ For example, the Basel III Accord includes requirements for a higher proportion of borrowing with long maturities.

Non-financial companies' borrowing amounted to SEK 80 billion at year-end 2013, which is more or less an unchanged level since the preceding year. The borrowing volume for "other credit market companies" increased by SEK 24 billion to SEK 42 billion by year-end. In recent years, municipalities have slowly increased their borrowing volume to SEK 18 billion at year-end 2013.

Investors on the money market in Sweden

Swedish banks, insurance companies and foreign investors are important categories of investors in the money market (see Chart 2). The banks' holdings of short-term fixed-income securities constituted over a third of the total money market at year-end 2013, while the insurance companies' holdings corresponded to about 14 per cent of the market. The banks' and insurance companies holdings amounted to SEK 96 billion and SEK 38 billion respectively at year-end 2013. Foreign investors accounted for about 20 per cent of the market's total volume at year-end 2013, which was the same as in 2012.

The category "Companies, funds and others"¹⁴ accounted for over a quarter of the outstanding stock at the same point in time, which corresponded to SEK 72 billion. The National Pension Funds (AP funds) have invested very little in short-term fixed-income securities over the last 10 years.¹⁵ At the end of 2013, their holdings amounted to SEK 8 billion, or 3 per cent of the total volume of short-term fixed income securities.

Low turnover on the money market

From a historical perspective, turnover on the money market continued to be low in 2013. Securities on the money market, such as treasury bills and other certificates are retained in the investors' portfolios for their entire maturity to a greater extent. According to statistics from the Riksbank's primary monetary policy counterparties¹⁶ the turnover in mortgage certificates averaged approximately SEK 120 million per day in 2013, after having fallen by SEK 287 million per day compared with the preceding year. At the same time, turnover in treasury bills increased by over SEK 100 million per day to SEK 3.9 billion per day in 2013 (see Chart 3). In recent years, the joint turnover in Treasury bills

14 The category "Companies, funds and others" is a heading for residual items in the figures provided by Statistics Sweden and is the difference between the outstanding stock of securities in the money market and the other sectors' holdings of these securities.

15 More information about the National Pension Funds is available in the section on state-owned pension funds in the chapter Financial intermediaries.

16 More information about the Riksbank's counterparties is available on the Riksbank's website.

and mortgage certificates has fallen and at year-end 2013 averaged 12 per cent of the total spot turnover in government and covered bonds.

CONTRACT TYPES FOR THE MONEY MARKET'S SHORTEST SEGMENT

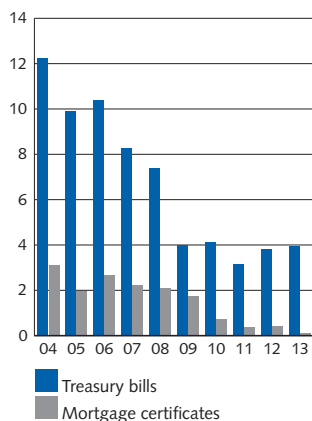
It becomes less practical to trade ordinary securities when maturities on the money market are reduced to a week or even less. The market participants use other contract solutions instead, such as *deposit contracts (deposits)* and *repurchase agreements (repos)*. These standardised contracts offer the participants greater flexibility in borrowing or investing at the very shortest maturities.

Deposit contracts

Deposit contracts are standardised deposit and lending contracts without underlying collateral in the form of pledged securities. Normally, market participants use deposit contracts for deposits and loans with maturities less than one week.

They are primarily used to balance liquidity requirements between banks overnight on the so-called overnight market, that is the shortest period of maturity on the money market with deposits and lending overnight. On the overnight market, the banks' liquidity requirements are balanced at a price close to the Riksbank's repo rate.¹⁷ The banks have, quite simply, agreed to assist each other with liquidity and for

Chart 3. Average turnover per day on the money market SEK billion



Source: The Riksbank

¹⁷ The banks make forecasts to assess how much liquidity they need for their payments. Nevertheless, imbalances arise, for example when the banks' incoming and outgoing payments do not match one another in time and when unforeseen payments must be made during the day. Imbalances can also arise as a result of customers' business transactions and transfers in foreign exchange and securities portfolios by portfolio managers or other financial-market participants.

this they pay the overnight rate, which is normally close to the repo rate. The Riksbank's deposit and lending facilities set the framework for the overnight rate. More information on the Riksbank's interest-bearing instruments and a summary of a recently-published review of the operational framework can be found in the box The Riksbank's monetary policy instruments.

The Riksbank's repo rate also affects *Stibor*¹⁸, which is a reference rate for trading in Swedish kronor. *Stibor* is defined as an average of the interest rates that the banks in the so-called *Stibor* panel offer each other for loans without collateral in Swedish kronor (that is deposit contracts). *Stibor* forms the basis of many financial contracts that are of central importance to the ability of banks and non-financial companies to manage risk. It is therefore of key importance to the financial system and an important component of the interest rates charged to households and companies.¹⁹

In 2013, the Swedish institutions designated by Statistics Sweden as monetary financial institutions had average outstanding deposit volumes in the form of deposit contracts of SEK 150 billion at the end of each month. Most of this sum, an average of SEK 141 billion, came from deposits from Swedish monetary financial institutions and the remainder from foreign institutions.²⁰ Monetary financial institutions (MFI) comprise banks, mortgage institutions, finance companies and other MFIs (for example, municipal and corporate-financed institutions, monetary securities companies and brokers).

Repos

A repo is an agreement in which one party undertakes to sell a security to another party in return for liquid funds. At the same time, the parties also agree that the same security will be repurchased at a set price at a predetermined time in the future. A repo transaction is therefore composed of two parts: a sale (spot), and an agreement to repurchase on a later date (forward). The repo functions essentially as a collateralised loan during the maturity of the repo. The party that lends the security pays an interest rate equivalent to the difference between the purchase and sale prices. Conversely, repos may be viewed as security loans collateralised with cash. A company that wants to obtain

¹⁸ *Stibor* stands for Stockholm Interbank Offered Rate.

¹⁹ For further information see the box *A new framework for the Swedish reference rate Stibor in The Swedish Financial Market 2013, Stibor revisited – a follow-up*, 2014, Sveriges Riksbank.

²⁰ Swedish Monetary Financial Institutions report their outstanding volumes in different currencies on a monthly basis to Statistics Sweden (SCB), which compiles financial market statistics. The definition of the Swedish banking day is not unambiguous: the definition usually refers to maturity overnight (O/N), but tomorrow next (T/N) may also appear (see Appendix 2 on market conventions).

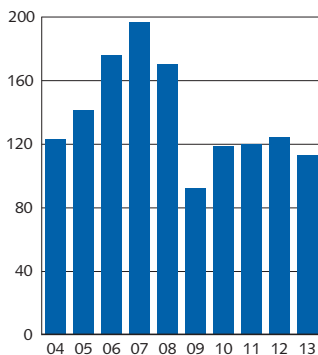
liquidity via repos must have a portfolio of securities on which it can raise loans, which is not the case when deposit contracts are used. If the borrower cannot honour his or her debts at the end of the period, ownership of the pledged securities is not returned to the borrower but is retained by the lender. Repos therefore entail a minimal counterparty risk²¹ for the lender. In principle, all securities that can be traded on the fixed income market can be used as collateral in repos.

In 2013, the turnover in repos among the Riksbank's primary monetary policy counterparties and the National Debt Office's dealers was somewhat lower than in previous years. Turnover has fallen since the financial crisis (see Chart 4). In 2013, turnover was about SEK 113 billion per day. Almost all of this turnover is in repos with maturities of up to two weeks. The turnover in repos was more than three times as high as the spot turnover in the underlying government and mortgage securities.²²

The outstanding volume of repo borrowing by the monetary financial institutions at the end of each month averaged around SEK 168 billion in 2013. About SEK 103 billion of this amount came from repo borrowing by Swedish monetary financial institutions.²³

The main reason for the high turnover in repos is that they offer investors a quick and efficient way of getting access to capital. Bond dealers can, for example, fund their securities portfolios via the repo market. They can also acquire securities quickly in order to meet their obligations.

**Chart 4. Average turnover per day in repos
SEK billion**



Source: The Riksbank

21 Counterparty risk refers to the risk that a business transaction cannot be completed.

22 Inflation-linked government bonds are not included in these figures.

23 The special conventions used in trading in the money market's short-term contracts are presented in Appendix 2 on market conventions.

The Riksbank's monetary policy instruments

The Riksbank's operational framework for the implementation of monetary policy shall be designed so that the Riksbank can control interest rates and thereby influence growth and inflation. The operational framework thus plays a decisive role in the Riksbank attaining its price stability objective. In the operational framework, the Riksbank offers market participants facilities for depositing or borrowing money at short maturities with the aim of governing short-term interest rates. The participants who are able to use these facilities participate in the Riksbank's central payment system RIX or have some form of monetary policy counterparty agreement with the Riksbank.²⁴

The Riksbank controls the overnight rate

The objective of the Riksbank's operational framework for the implementation of monetary policy is to control the overnight rate so that it remains stable

around the repo rate. The overnight rate also forms an anchor for the formation of interest rates at longer maturities. The overnight rate is governed by ensuring that the banks always have the possibility of meeting their liquidity requirements via the Riksbank's standing facilities or fine-tuning transactions overnight. However, the banks' alternative cost for turning to the Riksbank for deposits and lending is higher than that for balancing liquidity on the overnight market. The market participants thus have an incentive to determine a price that lies between the Riksbank's deposit and lending rates. In this way the Riksbank in practice sets the conditions governing the overnight market.

Intraday facilities (intraday credits)

As a central bank, the Riksbank helps to ensure that payments between banks can be made efficiently and without delay. Banks participating in RIX are therefore able to borrow interest-free from the Riksbank during the

²⁴ For more information on RIX participants and monetary policy counterparties see the Riksbank's website.

day against collateral in securities. Such a loan is called an intraday credit and is provided more or less immediately. The value of the collateral after any haircuts sets the ceiling for the loan. At the end of the day, the banks can then either even out their surplus deficit between themselves on the overnight market via what are known as overnight loans, or they can invest in or borrow kronor from the Riksbank overnight.

Riksbank certificates

The Riksbank uses the repo rate to signal the level of the overnight rate a week ahead. If the banking system has a structural liquidity deficit in relation to the Riksbank, a repo transaction with a maturity of one week is carried out in which the Riksbank purchases securities and thus supplies liquidity to the banking system. If, on the other hand, that banking system has a structural surplus in relation to the Riksbank, which has been the case since 2010, the Riksbank offers Riksbank certificates at a maturity of one week. Banks that purchase these certificates thus deposit liquidity with the Riksbank for a week at the repo rate.

Fine-tuning transactions

The part of this surplus that is not invested in Riksbank certificates is evened out in the Riksbank's fine-tuning transactions. These transactions entail the banks depositing their surpluses with the Riksbank overnight. However, the Riksbank sets a limit for fine-tuning transactions equivalent to the surplus in the banking system at the end of the day. The counterparties that deposit their surpluses with the Riksbank receive the repo rate minus 10 basis points. If all or part of the liquidity surplus had been invested in Riksbank certificates, deposits overnight would consequently have been smaller. If, at the end of the day, the banking system was instead to have a deficit in relation to the Riksbank, the counterparty responsible for this deficit would be allowed to borrow from the Riksbank overnight. The counterparty would then pay the repo rate plus 10 basis points.

Standing facilities

Nevertheless, it may happen that the transaction accounts of individual banks at the Riksbank are not balanced when RIX

closes. A credit institution that then has a negative balance on its RIX account at RIX's closing time is considered to have asked for credit under the standing facilities. A credit institution that, in contrast, has a positive balance is considered to have asked to make a deposit under the standing facilities. In the standing facilities, the counterparty is required to pay the Riksbank's repo rate plus 75 basis points for an overnight loan. Making deposits overnight provides a return equal to the Riksbank's repo rate minus 75 basis points.

The Riksbank began work on reviewing its operational framework in the spring of 2008.

A first overall assessment of the framework was published in March 2014.²⁵ This was the first extensive examination of

the framework since it was introduced in 1994.

The conclusion of the review was that in its present form the operational framework for the implementation of monetary policy is well able to meet its objectives. The framework has been successful in stabilising the overnight rate close to the repo rate, and volatility in the overnight rate remained relatively low during the financial crisis. Moreover, the operational framework has become more robust, thanks to the measures taken as a result of the financial crisis. The review has also identified a number of issues the Riksbank may consider working on to further improve the efficiency of the framework and to increase preparedness for future financial crises.

²⁵ For further information see *The Riksbank's operational framework for the implementation of monetary policy – a review*, March 2014, Sveriges Riksbank.

THE BOND MARKET

The bond market brings together managers of long-term savings with actors that need to borrow capital at longer maturities. A bond is a debt instrument in the form of an agreement to lend money that is subsequently repaid with interest. A bond with part payments²⁶ (coupons) over its term is called a coupon bond. Normally, the coupon rate for the bond is set by the prevailing interest rate environment in the economy. Bonds that do not have any coupon payments during their term are called discount bonds or, more frequently, zero-coupon bonds. The central government also issues inflation-linked bonds, where interest payments and the final payment are linked to developments in the inflation rate. When there is good demand for an issuer's bonds, the issuer will be able to borrow capital at a more favourable rate.

As mentioned above, bonds are used to match long-term savings with long-term funding needs. Another way of using bonds is in repo transactions where the holder can acquire liquidity by lending the bonds (see the section on repos).

Volumes on the bond market in Sweden have gradually increased over the last years. In 2013, the outstanding volume of bonds issued in Swedish kronor was slightly more than ten times greater than the volume on the money market and amounted to SEK 2 986 billion. A Swedish participant can also turn to the international markets to get access to capital. Issues are then carried out in other currencies.²⁷ At year-end 2013, 55 per cent of the total borrowing volume in bonds at Swedish issuers was in kronor while the rest was in foreign currencies.

Issuers on the bond market in Sweden

The term Swedish bond market refers to the market for bonds issued by Swedish issuers in Swedish kronor. The issuers on the bond market are the same as on the money market and are above all the government and the mortgage institutions, although companies and municipalities may also issue bonds. Bonds tend to be issued by those with long-term funding requirements. The government and the mortgage institutions are the largest issuers. They represent approximately 27 and 41 per cent respectively of the total volume of bonds in Swedish kronor.

²⁶ The part payments relate to payments of interest.

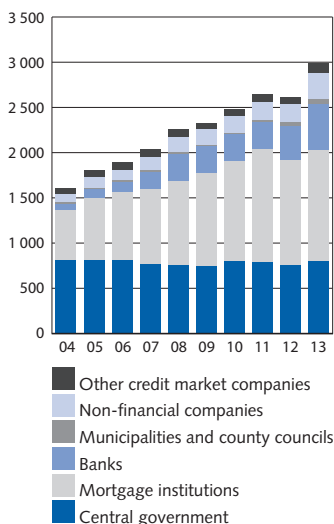
²⁷ It is primarily the banking sector that secures funding in foreign currencies. As a rule, issues conducted in other currencies are converted into kronor via derivatives, primarily currency swaps.

Government borrowing is used to finance the government's borrowing requirement.²⁸ At the end of 2013, the outstanding stock of government bonds amounted to SEK 801 billion – slightly more than in the preceding year (see Chart 5). The government's borrowing on the bond market thus remains high.

The Swedish National Debt Office can use what are known as interest-rate swaps (see the section on interest-rate swaps) to ensure that it can still meet its target of a certain average fixed term for the central government debt. The same principle applies to borrowing in foreign currencies. To meet the target of a certain currency exposure, despite extensive borrowing in Swedish kronor, currency swaps (FX swaps) can be used instead (read more about derivative instruments in the section of the foreign-exchange market).

The mortgage institutions primarily issue bonds to fund lending to Swedish households in connection with the purchase of housing. The entire stock of mortgage bonds in Swedish kronor now consists of so-called covered bonds.²⁹ Covered bonds provide the holder with the right to a specific cover pool if the issuer should be declared

**Chart 5. Issuers on the bond market
SEK billion**



Sources: Statistics Sweden and the Riksbank

²⁸ The Swedish National Debt Office manages central-government borrowing on the bond market, see the National Debt Office's website.

²⁹ On 1 July 2013, Finansinspektionen introduced new regulations for covered bonds, see Finansinspektionen's website.

bankrupt.³⁰ Eight Swedish banks or their mortgage institutions have permits from Finansinspektionen to issue covered bonds.³¹ The outstanding volume of covered bonds in Swedish kronor was SEK 1 420 billion at year-end 2013. The mortgage institutions accounted for SEK 1 163 billion of the outstanding volume of covered bonds and the banks accounted for the rest. Seen over the longer term, the mortgage institutions' borrowing in the form of bonds has increased, which is due to the banks lending more and more to the households for housing purchases. The mortgage institutions continually issue bonds on the Swedish market for covered bonds at the same maturity and coupon rate. This emission procedure is called on-tap.

The market for covered bonds is important and constitutes approximately half of the Swedish banks long-term market funding in Swedish kronor.

The banks' borrowing on the bond market increased by about 25 per cent in 2013, compared with 2012. The outstanding volume amounted to just over SEK 500 billion at the end of the year (see Chart 5). Municipalities and county councils can also fund their operations and investments using bonds. Some large municipalities and county councils can even issue listed bond loans in their own name. In 2013, a total of 278 municipalities and county councils had outstanding bond loans in cooperation with the credit market company³² Kommuninvest. Kommuninvest increased its lending to member municipalities from SEK 201 billion in 2012 to SEK 209 billion at year-end 2013. Approximately one third of this lending is funded using bonds in Swedish kronor. Kommuninvest's borrowing thus constitutes a significant proportion of the lending in the category "Other credit market companies" in Chart 5. The outstanding amount of issued bonds for this category totalled SEK 114 billion at year-end 2013.

Non-financial companies can also fund their operations by issuing bonds. At year-end 2013, Swedish companies had outstanding bonds amounting to just over SEK 279 billion. This was an increase of almost SEK 70 billion compared with the previous year (see Chart 6). Non-financial companies' borrowing on the fixed-income market has increased in recent years and constitutes approximately one-fifth

30 This Cover Pool consists of various types of mortgages and of loans to central governments and municipalities. More information on the build-up of the collateral stock can be found in the box Covered bonds in Sweden in *The Swedish Financial Market 2012*, Sveriges Riksbank.

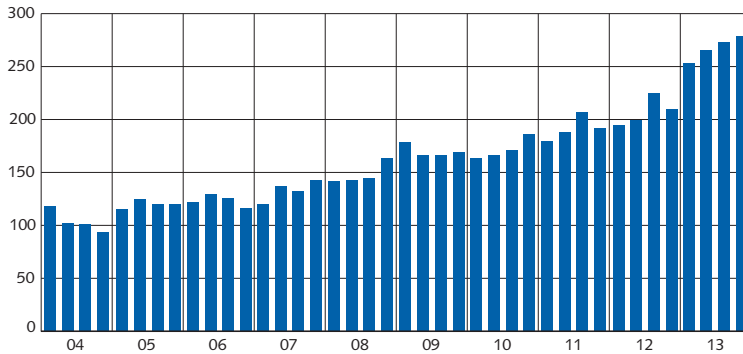
31 The eight institutions are Landshypotek, Länsförsäkringar hypotek, Nordea hypotek, SBAB, SEB, Skandiabanken, Stadshypotek and Swedbank.

32 Credit market companies are finance companies that fund their activities with money from the public. These companies are under the supervision of Finansinspektionen and are covered by the deposit guarantee scheme.

of the non-financial companies loan-based funding. Most of their funding, approximately 70 per cent, is still made up of borrowing from credit institutions (bank loans), while the remainder comes from inter-company loans.

Large, investment-grade Swedish companies account for most of the issue volumes on the bond market. However, in recent years the number of companies choosing to issue bonds has risen significantly. Smaller high-yield companies have also now begun to turn to the bond market. Consequently, there has been a substantial increase in the proportion of issues by companies that do not have a credit rating. The low interest rates following the financial crisis may be a contributing factor as they have reduced interest costs for the issuers and also increased the demand from investors for higher-risk assets.³³

Chart 6. Outstanding volume of corporate bonds in SEK issued by Swedish non-financial companies
SEK billion



Source: Statistics Sweden

³³ For further information, see the Economic Commentary *Search for yield in a low interest-rate environment*, 2013, Sveriges Riksbank.

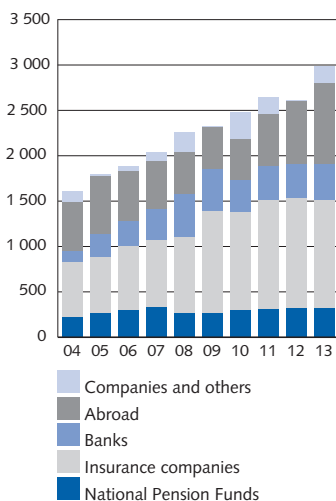
Investors on the bond market

Insurance companies were the category of investors that had the largest holdings of bonds in kronor at year-end 2013. They accounted for SEK 1 194 billion, which is equivalent to 40 per cent of the total holdings among investors (see Chart 7). The banks' bond holdings amounted to SEK 396 billion at the same date. Foreign investors³⁴ increased their holdings on the bond market by SEK 186 billion in 2013. These totalled SEK 887 billion at year-end. Macroeconomic development in Sweden and Sweden's stable public finances have helped to increase foreign investors' interest in Swedish bonds in recent years.

Companies and others³⁵ increased their bond holdings by over SEK 180 billion in 2013, following a substantial reduction in the previous year. This category had invested about SEK 191 billion in bonds at year-end 2013.

The Swedish bond holdings of the National Pension Funds funds increased somewhat to SEK 318 billion in 2013.

Chart 7. Investors on the bond market
SEK billion



Sources: The National Pension Funds, Statistics Sweden and the Riksbank

34 No detailed information exists as to which types of foreign investor make up the category "Non-residential" in statistics for the balance of payments issued by Statistics Sweden (SCB). It is likely that major foreign pension funds represent a major share of this category.

35 The category "Companies and others" is a heading for residual items in the figures provided by Statistics Sweden on investors in the bond market. It is the difference between the outstanding stock of securities on the bond market and the bond holdings of major investors.

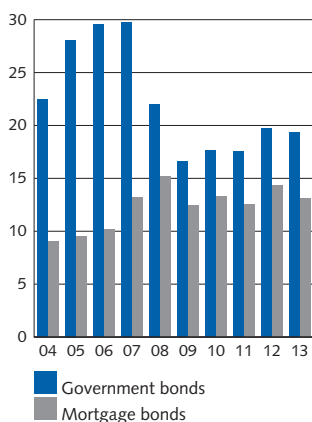
Turnover on the bond market

The total average turnover per day in government and mortgage bonds was approximately SEK 33 billion in 2013, which is SEK 1.5 billion less per day compared to 2012 (see Chart 8). The turnover in government bonds has fallen in comparison to the situation before the financial crisis. From a level of almost SEK 30 billion per day in 2005-2007, turnover has been below SEK 20 billion a day since 2009. The turnover in mortgage bonds has been more stable. The average daily turnover in corporate bonds was only SEK 600 million in 2013.

Government bonds are primarily bought and sold on the secondary market. In 2013, almost 98 per cent of all the transactions in government bonds were conducted on the secondary market, while just over two per cent took place on the primary market in the form of issues. Government bonds are the type of debt security that has the highest turnover. This is because these are issued in large volumes and are exposed to low credit risk.³⁶ Covered bonds also have a relatively good turnover on the secondary market. The turnover in corporate bonds is, on the other hand, much lower as investors to a greater extent retain these bonds in their investment portfolios until they mature.

Alongside the institutional trading in bonds, trading also takes place in private bonds. A private bond is a debt security primarily aimed at private individuals and other small investors. They are listed on Nasdaq OMX Stockholm or on NDX (Nordic Derivatives Exchange).

Chart 8. Average turnover per day on the bond market SEK billion



Source: The Riksbank

³⁶ In this context, credit risk refers to the risk of failure by the issuers of bonds to fulfil their contractual obligations. When the Swedish state is the issuer of the bond, this risk is considered to be very slight.

Unlike institutional trading, this trading is conducted electronically. The most common private bonds are structured products such as index-linked bonds and subordinated debentures. Even though private bonds are a popular saving strategy among private investors in particular, both the total outstanding volume and turnover are minor compared with those of other debt securities.

ISSUES AND THE TRADING STRUCTURE ON THE FIXED-INCOME MARKET

The issuance and trading of securities functions in approximately the same manner in the bond and money markets. The description below therefore applies to securities on both of these markets. However, different trading regulations (market conventions) apply on the two sub-markets. These trading regulations are described in more detail in Appendix 2.

Issues

Government bonds and treasury bills are sold via auctions, in which authorised dealers for the Swedish National Debt Office participate. These dealers comprise a number of banks and securities companies with which the Swedish National Debt Office has signed contracts. At present, seven or eight dealers are used depending on the form of security that is auctioned.³⁷ In their contracts, the dealers undertake to act as market makers. Acting as a market maker on this market involves a commitment to submit bids for every issue and to set current daily prices for the securities issued by the state.

The Debt Office also sells treasury bills continually, a process known as *on-tap sales*. On-tap sales are used for short-term liquidity management (up to six weeks). The Debt Office can then customise the maturity of a treasury bill according to its borrowing requirement by choosing both the date of issue and the date when it falls due.

Mortgage institutions also issue their bonds and certificates through authorised dealers, which consist of banks and securities companies. In this case, however, no auctions are held. The bonds and certificates are instead sold on an ongoing basis according to the borrowing needs of the mortgage institutions.

When non-financial companies issue bonds and certificates they often have agreements with one or several banks on loan programmes where they issue securities on predetermined terms and conditions. The proportion of issues made by individual companies has also increased recently.

³⁷ For a list of the National Debt Office's dealers, see the Office's website.

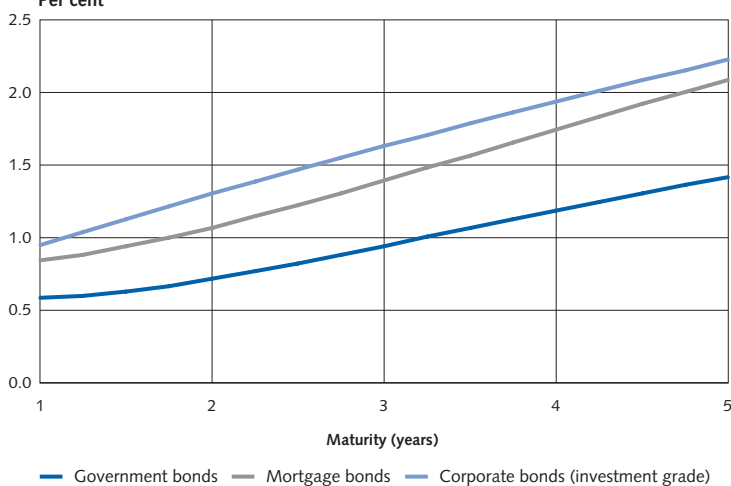
Companies and banks also issue securities abroad that they then convert into Swedish kronor using derivatives.

Alongside the corporate issues aimed at large groups of investors, there is also a market for private placements. These often involve bond loans that are issued in their entirety to one or a small number of investors. The terms are subject to negotiation and the issues are largely designed to meet the wishes of the investors.

When comparing the yields for different bonds, government bonds usually act as the starting point as they have the lowest credit risk and the highest turnover on the market. The yield for covered bonds is usually higher than for government bonds as they have a higher credit risk and are slightly less liquid. To invest in covered bonds the investors therefore require risk compensation over and above the yield received for government bonds at the same maturity. Investors in covered bonds have a prior right to collateral linked to the bond concerned (the so-called cover pool).³⁸ Corporate bonds, on the other hand, do not have any equivalent underlying assets as protection against the credit risk. The yields for corporate bonds are thus generally higher than for covered bonds at similar maturities.

Credit risk and liquidity risk are two important factors that determine the relation between yields for different bond categories. The higher these risks, the higher the yield the bonds usually have. The difference in yield levels is usually referred to as the risk premium. In Chart 9, this is shown as the difference between the different bond categories.

Chart 9. Yield curves for Swedish bonds, April 2014
Per cent



Sources: Thomson Reuters and the Riksbank

³⁸ For more information on covered bonds, see *The market for Swedish covered bonds and links to financial stability in Sveriges Riksbank Economic Review*, 2012 on the Riksbank's website.

Table 1. How different financial instruments are traded on the fixed-income, foreign-exchange and equity markets in Sweden

	FINANCIAL INSTRUMENT	ISSUANCE PROCESS		TYPE OF INTERMEDIARIES	CLEARING OF THE SECURITY	MARKETPLACE FOR TRADING	MATURITY
		AUCTION FORM	CONTINUOUS ISSUE				
FIXED-INCOME MARKET	Deposit contracts	–	–	–	B	B	Normally up to one week
	Repos	–	–	–	CCP/B	B	Normally up to two weeks
	Treasury bills	Yes	Yes	MM	B	TP/B	Maximum up to one year
	Commercial paper	No	Yes	LB/MM	B	TP/B	Maximum up to one year
	Mortgage certificates	No	Yes	LB/MM	B	TP/B	Maximum up to one year
	Government bonds	Yes	No	MM	B	TP/B	Maximum up to 30 years
	Covered bond	No	Yes	LB/MM	B	TP/B	Normally up to 7 years
	Corporate bonds	No	Yes	LB/MM	B	TP/B	Normally up to 7 years
	Interest-rate derivatives	–	–	MM ¹	CCP/B	Exchange/TP/B	Maximum up to 30 years
FOREIGN-EXCHANGE MARKET	FX spot	–	–	MM	B	TP/B	–
	FX derivatives	–	–	MM ¹	B	TP/B	Normally up to 5 years
EQUITY MARKET	Listed equities	Yes	Yes	LG/LF ²	CCP/B	Exchange/TP/B	Open maturity
	Non-listed equities	Yes	Yes	–	B	B	Open maturity
	Equity derivatives	–	–	MM	CCP/B	Exchange/TP/B	Normally up to 3 years
	Exchange-traded funds	No	Yes	MM	CCP/B	Exchange/TP/B	Open maturity
	Exchange-traded investment products	No	Yes	LG	B	Exchange/TP/B	Open maturity/ Normally up to 2 years ⁴

Note. The table should be read as an indicative comparison of how these instruments are traded on the financial markets, divided into several selected categories.

1. Market makers exist for some of the instruments in the category.

2. Liquidity market makers primarily appear on trading platforms, liquidity facilitators may in certain situations make things easier for customers on exchanges.

3. Some securities become listed equities when the issue phase is completed.

4. Depending on the type of financial instrument.

MM Market maker
 B Bilateral
 LB Lead bank
 TP Trade platform
 LM Liquidity maker
 LF Liquidity facilitator
 CCP Central counterparty

Yields also rise in relation to maturity (the yield curve), which means that the longer maturity a bond has the higher the yield is. Although this is not always the case, it is usually regarded as the norm for debt instruments. This is usually referred to as bonds having a maturity premium. The slope is partly determined by the expected development of yields. It also reflects the compensation an investor requires to invest at longer maturities. Moreover, bonds with different maturities are not perfect substitutes as different categories of investors and issuers are usually active in different segments of the yield curve. For example, money market funds primarily invest in the short yield segment, while pension funds invest in the long segment.

Trading structure

Trading in government bonds takes place by telephone or using electronic trading platforms. Dealers are banks (or securities companies) that have undertaken in agreements to act as market-makers. This means that they facilitate trading in bonds on the market by quoting bid and ask prices on the secondary market and, as dealers, bidding for issues on the primary market. Trading by the dealers with their clients, for example industrial enterprises or insurance companies, is referred to as customer trading. The trading that takes place between dealers is usually called interbank trading. Table 1 shows how different financial instruments are traded in Sweden.

A majority of the dealers in government securities are also dealers in mortgage securities, which means that bid and ask prices are listed daily. Trading in corporate securities is more limited in Sweden but has developed significantly recently. Indicative bid and ask prices for most corporate bonds are presented in electronic trading systems. Trading in these securities still mainly takes place directly between a buyer and a seller (OTC trading). The increased interest in corporate bonds has recently led to the opening of two new marketplaces for these securities, First North Bond Market by Nasdaq OM and Råntorget.

Sometimes, anonymity is needed in trading. For this purpose, there are special intermediaries known as brokers. Interbank participants may, for example, declare their interests through a broker to avoid having to reveal them to their competitors. Brokers are normally well-established international brokerage companies, whose only clients are institutional participants. Brokers do not trade on their own behalf. Trading via brokers has increased in recent years.

THE MARKET FOR INTEREST DERIVATIVES

The fixed-income market comprises various types of derivative instruments: interest-rate forwards, interest-rate swaps and interest-rate options. Other variants of derivatives include credit derivatives and structured products.

Interest rate forwards

A forward is a contract whereby the parties have undertaken to buy or sell an asset at a predetermined price at a certain time in the future. There is a distinction between *futures* and *forwards*. In a forward, the contract remains unchanged up to the time when the underlying asset is delivered and the payment is made. In a future, on the other hand, the price is adjusted daily in a market valuation process, i.e. the contract is "marked to market". A future is usually traded on an exchange, while a forward contract is a standardised agreement between two parties which, however, contains certain components that can be customised for the specific transaction.

The most common way to use forwards on the Swedish fixed income market is in IMM-FRA (International Money Market Forward Rate Agreements).³⁹ These are standardised interest-rate forwards that have deposit contracts as the underlying asset. They have specific maturity dates known as IMM days.⁴⁰ The turnover in IMM-FRAs among the Riksbank's primary monetary counterparties averaged SEK 148 billion per day during 2013. The corresponding figure for the previous year was SEK 187 billion.

Since 2009 there have also been contracts based on the outcome for the Riksbank's policy rate, the repo rate. These are called RIBA futures or Riksbank futures. Like the FRA contracts the RIBA contracts are standardised contracts whereby the parties have undertaken to buy/sell an asset at a predetermined price at a certain time in the future. A RIBA contract gives the buyer and seller the possibility to speculate in the level the Riksbank's repo rate will be at in the future. Like FRA contracts, RIBA contracts are settled on IMM days.⁴¹ Both of these types are also fictitious contracts, which means that the underlying loan sums are not transferred. The turnover in RIBA

³⁹ However, when a contract for an IMM-FRA matures, the underlying instrument (the 3-month deposit contract) is not exchanged. Instead, there is a cash settlement between the rate agreed when the contract was signed and the market rate applying when the contract matures.

⁴⁰ IMM (International Money Market) days always fall on the third non-holiday Wednesday in March, June, September and December.

⁴¹ An important difference between the RIBA and FRA contracts is that the RIBA contract known as the "March contract" is finally settled against the average repo rate during the three-month period December to March, while the FRA "March contract" is finally settled against the average Stibor during the period March to June.

contracts is not particularly large compared to that in IMM-FRA contracts. In 2013, the turnover in RIBA contracts averaged just over SEK 20 billion per day. The corresponding figure for 2012 was slightly less than SEK 26 billion. However, turnover in RIBA contracts has increased continually since they were introduced in 2009, when the daily turnover was only SEK 4 billion.

Other forwards in the Swedish fixed-income market are forward contracts on bonds and on treasury bills. These are binding agreements to buy or sell government bonds, covered bonds or treasury bills at a specified date in the future. Compared with the turnover of IMM-FRAs, the market in bond and treasury-bill forwards is small. The average turnover in bond forwards with government bonds as the underlying asset increased marginally between 2012 and 2013 from SEK 18 billion to SEK 19 billion per day. The turnover in forwards with covered bonds as the underlying asset was largely unchanged at around SEK 7 billion per day during the same period (see Chart 10).

The turnover in treasury-bill forwards was very small in comparison and averaged SEK 1 million per day in 2013.

Interest rate swaps

Swaps are another type of derivative on the fixed-income market. An *interest-rate swap* entails an agreement between two parties to swap interest payments with each other during a certain period of time. For example, one party can choose to pay a fixed rate of interest (swap rate) and, in exchange, receive a variable rate from the other party.⁴² As swaps are closely related to forwards, investors may combine them to obtain the return and risk desired.

Interest-rate swaps with long maturities are referred to by the abbreviation *IRS*. This entails swapping interest payments for several years, up to a maximum of 10 years. Another type of interest rate swap – with shorter maturities – used in Sweden is called *Stina* (Stockholm Tomorrow Next Interbank Average). A *Stina* contract is an agreement, lasting up to a maximum of one year, to pay or receive the difference between an agreed fixed rate of interest and a variable rate.⁴³ This enables participants to protect themselves against changes in the variable rate, which, in this case, is the T/N rate. The daily turnover in *Stina* swaps among the Riksbank's primary monetary policy

⁴² The convention is to specify the size of the fixed interest rate so that the present value of the fixed and the variable interest rate legs are equal. Thus the net present value of the swap contract at the beginning of the swap is zero.

⁴³ Reconciliation takes place in relation to the T/N rate, which is the underlying interest rate in the contract.

counterparties fell from slightly less than SEK 16 billion to SEK 9 billion between 2012 and 2013. The corresponding figures for IRS were just over SEK 33 billion in 2012 and SEK 34 billion in 2013 (see Chart 10).

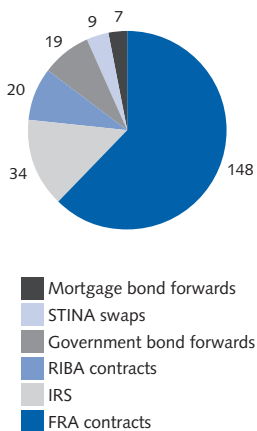
Interest-rate options

An *option* in the fixed-income market is a contract whereby the holder has the right, but not the obligation, to buy or sell a debt security at a specified price and on a specified date in the future. In turn, the writer of the option has only the obligation to exercise the contract. The Swedish market for interest-rate options has decreased over time.

In Sweden, trade is conducted, for example, in *government bond options*, where the underlying asset is a government bond. The turnover in government bond options has fallen sharply in recent years and trading in these instruments is small compared to the trade in other fixed-income derivatives. The estimated average turnover per day amounts to five million kronor. Turnover volumes are larger for options with IMM-FRA forwards or interest-rate swaps as the underlying assets.

Every third year, the Bank for International Settlements (BIS) publishes the study *Interest rate derivatives market turnover* which is based on surveys from individual central banks.⁴⁴ The Riksbank's responses to the survey cover turnover volumes for various interest-rate derivatives at the four major banks. The surveys showed that the

**Chart 10. Average turnover per day on the interest-derivatives market
SEK billion**



Source: The Riksbank

⁴⁴ This survey is known as "The Triennial Central Bank Survey". More information is available at www.bis.org.

average daily turnover in interest-rate options in April 2013 was close to SEK 15 billion. Since 2010, turnover had fallen by 36.5 per cent, measured in Swedish kronor.

One type of derivative instrument that has instead become more common in recent years is *structured products*. A structured product is a security that can consist of several different types of financial instrument, for example options, equities and forwards.

The trading structure on the market for interest derivatives

Derivatives can either be traded directly, that is over-the-counter (OTC), between a buyer and seller or via regulated marketplaces such as stock exchanges. The active trading in the derivative instruments is carried out on a market where a number of dealers set prices by telephone or electronically. Derivatives traded over-the-counter may either be standardised or tailored to suit the buyer's or seller's requirements outside a regulated marketplace. On exchanges, trading in derivatives is standardised, with known maturity dates and contract sizes. Liquidity, that is the turnover in the derivatives, is generally higher in exchange-traded derivatives.

In Sweden, derivatives on the fixed-income market are mostly traded OTC and are usually of the standardised type. Nasdaq OMX Derivatives Market (NOMX DM) offers the clearing of standardised derivatives, but also of certain semi-standardised instruments and customised derivatives that are traded on the OTC markets. Once the transaction has been recorded in the clearing system, NOMX DM acts as the central counterparty. In connection with this registration, NOMX DM replaces the original contracts with two new contracts and thereby acts as the legal counterparty to buyers and sellers.⁴⁵ See Table 1 which shows how interest-rate derivatives are traded.

The foreign exchange market

What we normally call the foreign exchange market is a worldwide market. It is characterised by trading in large amounts, a large number of participants, low transaction costs and the rapid dissemination of price information. It is an important market with a daily global turnover of tens of thousands of billions of Swedish kronor. The turnover amounts are larger on the foreign exchange market than on the fixed-income market and the equity market.

The Swedish foreign exchange market can be described as the foreign exchange transactions that take place in the international market,

⁴⁵ See also the description in the chapter The financial infrastructure.

where one part of the transaction consists of Swedish kronor (SEK). The Swedish foreign exchange market may also be described as the trade in all currency pairs that is performed by institutions in Sweden. Both of these are therefore described in this section.

One reason why participants exchange SEK for foreign currency (and vice versa) is to match revenue and disbursements in foreign currency. These payments are traditionally generated by trade in goods and services or by investments in securities issued in foreign currency. Another common reason is to obtain protection against the foreign exchange risk that arises during trading in goods and services in foreign currency or via investments in foreign securities. Foreign exchange derivatives may be used to avoid risks of this kind. Foreign exchange derivatives link the fixed-income and foreign exchange markets together. This connection is usually called *covered interest rate parity* (CIP).⁴⁶

FREQUENTLY-USED INSTRUMENTS ON THE SWEDISH FOREIGN EXCHANGE MARKET

The most common instruments in trading where Swedish kronor is one part of the transaction can be divided into the categories *spot* and *derivatives*. A description of these is presented below.

Spot

The definition of spot is “a system of trading in which commodities are delivered and paid for immediately after a sale”. In the foreign exchange market, a spot transaction means that payment and delivery in a foreign exchange transaction will take place immediately, in practice two banking days after the completion of the trade.

Derivative instrument

Derivative instruments are used, for example, as a means of spreading and managing risks. The choice of derivatives is made according to the purposes of the participants. The derivative instruments used in the foreign exchange market are *foreign exchange forwards*, *foreign exchange swaps* (FX swaps), *interest rate and cross-currency swaps* and *foreign exchange options*.

Foreign exchange forwards are used by companies to hedge currency risk when handling payments to and from abroad. A foreign

⁴⁶ See, for example, the box on Covered interest rate parity in *The Swedish Financial Market 2012*, Sveriges Riksbank.

exchange forward is an undertaking to purchase or sell the currency in the future on a set date at a set price.

One of the most common instruments in the foreign exchange market is foreign exchange swaps or FX swaps. A foreign exchange swap works as an agreement between two parties to simultaneously buy and sell one currency against another with two different settlement dates. The currency is usually bought on the spot date (with liquidity in two days' time) and sold as a forward sale (that is at some point in the future). These swaps can be regarded as being equivalent to money market repos (a repo also consists of a spot and a forward transaction that are linked to each other). However, in the fixed-income market, it is a security and not a currency that is sold and repurchased at a later date (see the section on repos). FX swaps can be classified according to maturity: short swaps with maturities of less than two days (spot) and longer swaps with maturities from spot up to normally one year. Short swaps are normally used to manage liquidity, while longer swaps are pivotal instruments for the banks in their pricing of interest rate spreads for different currency pairs.⁴⁷

A cross currency interest rate swap (or more simply a currency swap) is another type of instrument that is also a combination of transactions. This instrument is an agreement in which one party, in the same way as in a currency swap, borrows a currency from another party at the same time as it pays the counterparty the equivalent amount in another currency. In contrast to FX swaps, interest payments for the respective currencies are also swapped during the period of the contract. Interest payments in the different currencies may be specified at fixed or variable rates.⁴⁸ When the contract falls due, the same spot rate that the parties paid when the contract was entered into is normally repaid. Cross currency basis swaps are common, for example, when funding foreign currency investments. They are used by financial institutions as well as their customers. In Sweden, these instruments are usually traded at maturities from one to seven years.

Options are also traded on the foreign exchange market. These are known as foreign exchange options. Option transactions in the foreign exchange market are structured in the same way as in the fixed income market, with the difference that the underlying asset is a currency. Foreign exchange options may be used, for example, to reduce the foreign exchange risk in future transactions. The buyer of a

47 Foreign exchange rates are stated in pairs, such as USD/SEK, EUR/USD, GBP/SEK and EUR/SEK.

48 For example, interest payments are linked to Stibor for SEK and Euribor for EUR.

foreign exchange option has the opportunity, but not the obligation, to exercise the option on the date that the payment falls due. The seller, on the other hand, has an obligation to fulfil the contract if the buyer chooses to exercise the option. If the market price is more advantageous than the foreign exchange rate at which the option entitles the holder to buy, the buyer will probably decide not to exercise the option.

TRADING STRUCTURE AND TURNOVER

Trading in SEK does not differ significantly from trading in other currencies on the foreign exchange market. This account may therefore be considered to apply to the foreign exchange market in general. Transactions on the foreign exchange market are conducted through so-called *market makers* who, on request, quote bid and ask prices mainly using electronic trading systems. The more traditional telephone trading is also important, but has decreased considerably in recent years.

When two parties enter into a position over the telephone, the transaction is registered in internal business systems and thereafter the position is checked and payment is made between the institutions. Trading in electronic systems is more order-driven⁴⁹ and standard transactions do not exist to the same extent. Like interest rate derivatives, foreign exchange derivatives in Swedish kronor are only traded OTC (see Table 1 which shows how instruments on the foreign exchange market are traded). Turnover on the Swedish foreign exchange market is described from two separate perspectives at the end of this section.

Interbank trading and customer trading

According to a BIS report (Report on global foreign exchange market activity) 39 per cent of the turnover on the foreign exchange market in April 2013 consisted of *interbank trading*, that is trading between interbank participants. Turnover was in principle unchanged since the study carried out in 2010. On the other hand, trade between, above all, dealers and other financial institutions (such as hedge funds, pension companies and insurance companies) has increased in recent years. In 2013, this trade accounted for approximately 53 per cent of the global turnover, according to the BIS study. Three years earlier, these participants accounted for almost 48 per cent of the turnover. Interbank trading is often the result of *customer trading*,

⁴⁹ Order-driven means that submitted orders are automatically matched without the brokers having to contact one another.

that is transactions between dealers and customers. Customers are, generally speaking, all participants except dealers. If a customer, for example a Swedish company, needs euros to execute a payment today, it will turn to its bank, which will quote a euro rate. If the bank wants to restore its foreign exchange allocations to the position prevailing before the sale of EUR, it will buy EUR for SEK from another bank. This transaction between the two banks may give rise to further interbank trading. The pricing of currency is largely determined on the interbank market, where bid and ask prices are continuously listed for different currencies against SEK. The prices that are listed to Swedish customers are therefore very often a result of pricing on this market.

Electronic trading

Foreign currency trading is increasingly shifting from telephone trading to trading using different electronic platforms and systems. Almost all of the spot trade in SEK between the Riksbank's counterparties is performed via electronic systems. This pattern also generally applies to interbank trading in foreign exchange derivatives. Most of the major currency pairs (such as EUR/USD, GBP/USD, USD/JPY, and EUR/JPY) are traded via the Electronic Broking System (EBS).

The largest banks often have electronic platforms that they have developed themselves. The platforms for foreign exchange trading are divided into three different categories: single-bank platforms, multi-bank platforms and inter-dealer electronic broking platforms. Single-bank platforms are the banks' internally-developed platforms, which mediate each individual bank's own prices in currency pairs to its customers. Multi-bank platforms instead mediate several market makers' prices. These platforms are also used to a large extent outside the interbank market, which is to say by market participants that are not banks, to provide prices to customers. Inter-dealer electronic broking platforms are seen as the dominant source of interbank liquidity as they mediate information on various market makers' indicative prices.

Increased risk awareness has also contributed to an increase in demand for safe services for managing currency transactions after the transaction itself has taken place. One example of such a service is CLS (Continuous Linked Settlements), which offer the settlement of currency transactions (see also the chapter The financial infrastructure). Part of the electronic trading takes place in the form of *algorithmic trading*, which is to say securities trading in which an order is generated by a computer system according to preset instructions and

parameters. Computers are programmed so that they can carry out an order according to certain codes known as trading algorithms.⁵⁰

Cross trading

Trading in currency usually takes place via one of the largest currencies. This means, for example, that the price of SEK relative to NOK is set via the euro, which is what is known as a *hub currency*. By starting from the price for NOK against EUR and for SEK against EUR, a price for SEK against NOK is obtained. This is usually called *cross trading*.

Cross trading is a practical arrangement, as the banks would otherwise need to price SEK against every imaginable currency. On efficient markets, the currency that is used for pricing is unimportant, as long as the transaction costs are low. The reverse, that is inefficient markets, would create opportunities for risk-free profits, known as *arbitrage*. Then the participants would be able to sell SEK at a high price against a currency and buy it back at a low price against another currency.

Unlike in spot trading, derivative trading in SEK takes place against other currencies and with USD as a hub currency instead of EUR. Until the end of the 1960s, the hub currency for derivatives trading was the pound sterling (GBP). A number of market conventions applying to foreign exchange trading in SEK are also described in Appendix 2.

Turnover in SEK

There are no comprehensive statistics on turnover in SEK on the foreign exchange market. However, the Riksbank collects turnover statistics from its counterparties concerning foreign exchange transactions in which one side of the foreign exchange transaction is comprised of SEK. At year-end 2013, these counterparties consisted of the four major Swedish banks and five large international participants.⁵¹ The Riksbank's counterparties account for around a half of the global turnover in SEK.⁵²

According to statistics compiled by the Riksbank, the average turnover in SEK amounted to almost SEK 300 billion per day in 2013, which was slightly less than in the previous year (see Chart 11).⁵³ Of this, the daily turnover in spot transactions averaged around SEK 86 billion per day in 2013.

50 For a description of algorithmic trading on the foreign exchange market, see Algorithmic trading in the foreign exchange market in the journal *Sveriges Riksbank Economic Review*, 2013:1, Sveriges Riksbank.

51 More information about the Riksbank's counterparties is available on the Riksbank's website.

52 According to the BIS study *The Triennial Central Bank Survey* and the Riksbank's turnover statistics for the foreign exchange market (the SELMA database).

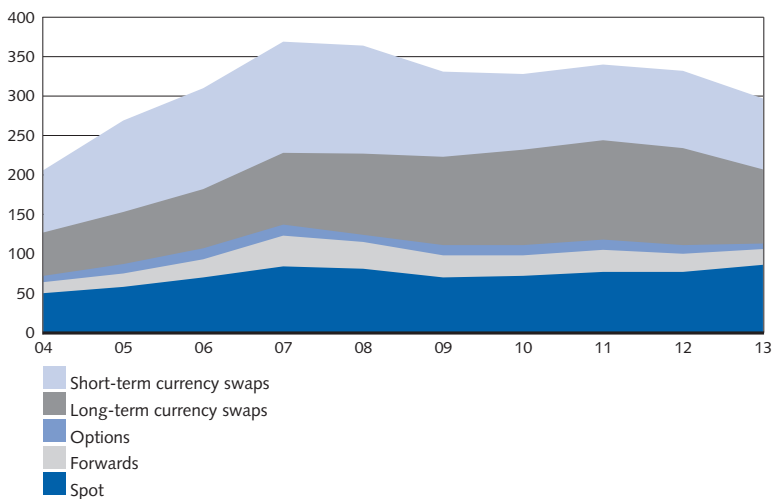
53 Only one part of the swap transactions is included in these figures.

The turnover in foreign exchange swaps was about SEK 184 billion per day in 2013. The turnover in foreign exchange swaps with maturities from two days to 18 months decreased by almost SEK 30 billion to SEK 94 billion per day between 2012 and 2013. The turnover in foreign exchange swaps with maturities of up to two days decreased by SEK 8 billion to SEK 90 billion per day over the same period.

The turnover in foreign exchange options among the Riksbank's counterparties decreased by SEK 4 billion to SEK 7 billion per day between 2012 and 2013. The turnover in foreign exchange forwards in SEK at the Riksbank's counterparties totalled approximately SEK 20 billion per day in 2013. This was a decrease of about SEK 3 billion per day compared with 2012.

The Bank for International Settlements (BIS) is a cooperation body that conducts an investigation into the global foreign exchange and derivatives market every third year. The most recent investigation took place in April 2013 and shows that just over 85 per cent of trade in Swedish kronor took place outside Sweden. Banks based in the United Kingdom accounted for 41 per cent of the turnover. There may be several explanations for this major foreign participation in trade in SEK. To begin with, London is the dominant financial centre for the global foreign exchange market and many of the largest banks are based there. In addition, the Swedish krona and securities issued in SEK are

**Chart 11. Average turnover per day on the Swedish foreign exchange market
SEK billion**



Note. The division into short swaps with a maturity of up to two days and long swaps with a maturity from two days up to 18 months reflects the definition used by the Riksbank when collecting turnover statistics.

Source: The Riksbank

important elements in well-diversified foreign portfolios focused on Europe. Other countries where there is extensive trading in SEK are the United States (17 per cent) and Denmark (9 per cent).

The Swedish krona's share of turnover volume on the global currency markets was about 1.8 per cent in April 2013. Since 2010, the krona's share of turnover has fallen by 0.4 percentage points. The krona has thus fallen from ninth to eleventh place among the currencies with the highest turnover in the world. The currencies with the highest turnover were the US dollar (87 per cent), the euro (33 per cent), the Japanese yen (23 per cent) and the pound sterling (12 per cent).⁵⁴

Foreign exchange trading in Sweden

So far, we have described the Swedish foreign exchange market, defined as all the foreign exchange trading where SEK forms one part of the transaction, wherever in the world the transaction takes place. An alternative definition of the Swedish foreign exchange market is all the foreign exchange trading that takes place in Sweden, irrespective of the currency pairs involved. One issue examined in the BIS study was the foreign exchange undertaken in April 2013 by the four major Swedish banks based in Stockholm. According to the survey, Sweden is the world's 18th largest trading venue in foreign exchange. The turnover increased from an average of USD 16 billion per day in 1998 to an average of USD 44 billion per day in 2013.

The currency pair with the highest turnover in Stockholm is EUR/USD. This currency pair makes up 25 per cent of total turnover. The second highest turnover was in USD/SEK, whose share of total turnover was 22 per cent in 2013 (see Table 2). The third largest

Table 2. The six currency pairs with the highest turnover in Stockholm
Per cent

	2004		2007		2010		2013	
1	USD/SEK	31	USD/SEK	39	USD/SEK	27	EUR/USD	25
2	EUR/USD	16	EUR/USD	26	EUR/USD	25	USD/SEK	22
3	EUR/SEK	11	EUR/SEK	23	EUR/SEK	18	EUR/SEK	14
4	GPB/USD	5	GPB/USD	2	GPB/USD	3	GPB/USD	9
5	USD/JPY	2	USD/JPY	4	USD/CHF	2	USD/JPY	3
6	USD/CHF	2	USD/CHF	2	USD/JPY	2	USD/CHF	2
	Others	33	Others	4	Others	23	Others	25
	Total	100	Total	100	Total	100	Total	100

Note. The figures represent the month of April.
Source: BIS

⁵⁴ As two currencies are included in each transaction, the total of the individual currencies in the summary amounts to 200 per cent.

currency pair was EUR/SEK, whose share of turnover was 14 per cent in April 2013.

The largest single currency traded in Stockholm in April 2013 was not SEK but USD, which formed one part of approximately 74 per cent of all the currency pairs traded. This was followed by EUR (around 47 per cent) and SEK (around 39 per cent).

The equity market

Along with the fixed-income and foreign-exchange markets, the equity market is an important market for the financial system. Stock, shares or equity are all terms for ownership in a company (limited company).

As well as issuing bond loans on the fixed-income market or borrowing money from a credit institution (for example), companies needing capital can issue additional equity. The risks associated with lending to companies mean that companies' funding needs can rarely be fully met by loans alone, at least not at a reasonable cost. Some companies therefore meet their capital requirements by issuing additional equity that are sold to investors. This takes place on the equity market where investors can subsequently trade equities with each other. The equity market thus plays an important role in the conversion of savings into financing. It also provides market-based equity valuation, making it easier for companies to estimate the financing cost of new investment projects as well as giving owners, company management and the public in general an idea of how well the company is being managed.

An equity investment essentially gives the shareholder a claim on a company's assets and profits after the company's creditors, for example the company's lenders or bond holders, have received their portion. As the value of this claim is determined by the profitability of the company, equity capital can be regarded as risk capital. However, the shareholders' risk is limited in the sense that they cannot lose more than the amount they have invested in the company. Part of a company's profit is usually distributed directly to the shareholders as dividends, which in Sweden are usually paid out once a year. The remaining profits are added to the company's equity capital. Unlike most loans, an equity investment does not fall due and the company has no formal commitments to repay the invested amount. However, unlike creditors, shareholders have co-determination rights

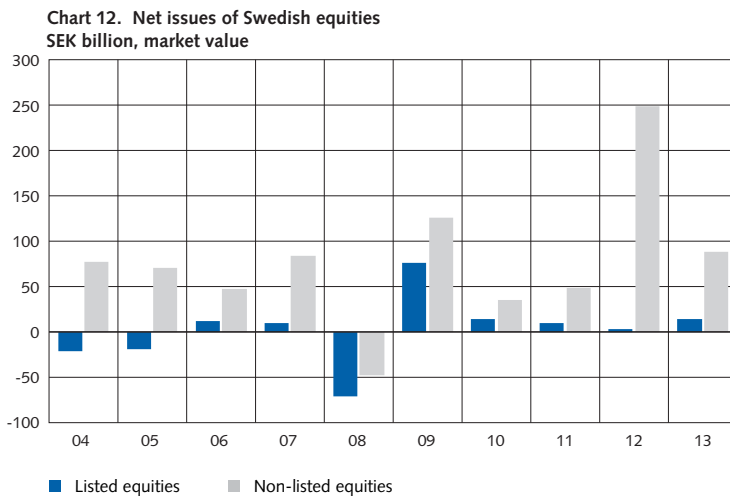
in the company, as each share conveys a certain voting right at the company's general meetings.⁵⁵

Below follows a description of the Swedish equity market, which we define as the trading in equities and equity-related instruments listed on Swedish marketplaces. Companies based either in Sweden or outside Sweden can list equities and equity-related instruments on Swedish marketplaces. Similarly, Swedish companies can list equities and equity-related instruments on foreign marketplaces. However, this section only deals with the trading on Swedish marketplaces.

Initially, we describe the issuers and investors on the instruments traded on Swedish marketplaces, as well as the role of the marketplaces. The section concludes with a description of the trading on Nasdaq OMX Stockholm (which is by far the largest Swedish marketplace), plus trading on other Swedish marketplaces.

ISSUERS

To be a limited liability company, which just less than one-third of all Swedish companies are at present, a company must have equity capital in an amount of at least SEK 50 000. There are two different types of limited liability company: private and public limited liability companies. These differ in several ways. Becoming a public limited liability company needs at least SEK 500 000 in equity capital, among other requirements. In addition, only shares in public limited liability



Note. Net issues refers to new issues of shares minus share buy-backs.
Source: Statistics Sweden

⁵⁵ The normal principle is one share/one vote, although differentiated voting rights also exist. For example, there may be class A shares in a limited company, which confer ten votes per share, and class B equities, which only confer one vote per equity.

companies may be sold to the public and listed for trading on a marketplace. Private limited liability companies may only market their shares to a very restricted circle of investors.

Listed equities are thus shares of ownership in public limited liability companies traded on a marketplace. When an equity is listed on a marketplace, it becomes easier to purchase and sell it, at the same time as higher demands are placed on the company as regards to reporting and other matters. It is significantly more difficult for investors to sell non-listed equities. However, there are market participants who have specialised in mediating the sale and purchase of non-listed equities.⁵⁶ Investments in non-listed equities are often channelled through a special form of intermediary known as venture capital companies (see the section on Venture capital companies in the chapter on Financial intermediaries). As regards the equity issuance, adjusted for repurchases⁵⁷, it can be noted that primarily non-listed equities are issued (see Chart 12). The net issue volumes partly reflect the fact that a company's dependence on equity financing generally decreases when a company becomes more established and profitable. It also shows that entrepreneurship in Sweden is dominated by unlisted companies. Only listed equities will be described in the rest of this section.

INVESTORS

The ownership of Swedish equities is widespread and comprehensive. At year-end 2013, the total market value of the equities listed on Swedish marketplaces amounted to almost SEK 5 000 billion. Foreign investors owned about 41 per cent of this (see Table 3). Since 1996, foreign investors have formed the greatest category of shareholders, and their share has steadily grown. Swedish households' direct shareholdings amounted to slightly less than 11 per cent at the end of 2013. However, households also own equities indirectly through investment funds, insurance and pension schemes, meaning that the proportion of shareholdings held by financial companies amounted to just over 27 per cent at the end of 2013.

⁵⁶ One market participant that is specialised in the mediation of non-listed equities is Alternativa Sweden.

⁵⁷ Just as they sell shares investors, companies can also purchase shares back from investors.

EQUITY-RELATED EXCHANGE-TRADED INSTRUMENTS

In addition to equities, a range of different equity-related instruments are traded on Swedish marketplaces. A description of these follows, divided into the categories equity and equity index derivatives, exchange-traded funds and exchange-traded investment products.

Equity and equity index derivatives

In Sweden, futures and options are traded with individual equities and equity indices as underlying assets. Like interest rate and foreign exchange forwards, an equity future is a contract whereby both buyer and seller have undertaken to buy or sell an underlying asset on a specified future date at a price determined in advance. An equity option is a contract whereby the holder has the right, but not the obligation, to buy or sell an underlying asset at a specified price at or by a specified date. In turn, the issuer of the option has the obligation to execute the transaction if the holder wishes.

Table 3. Holdings of equities listed on Swedish marketplaces, per sector
Per cent

SECTOR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Non-financial companies	8.7	8.4	9.0	9.4	9.5	9.1	9.2	12.0	11.5	11.9
Financial companies										
Banks, finance institutions, etc.	3.4	2.8	2.5	2.2	1.6	2.1	2.2	1.8	2.3	1.9
Investment companies ¹	5.3	5.3	5.2	5.6	5.4	5.3	5.4	5.3	5.5	5.4
Mutual funds	11.1	11.8	11.2	10.9	11.4	12.6	12.3	11.9	11.5	11.7
Insurance companies, pension institutions	8.7	8.7	8.1	8.3	9.0	9.1	8.9	8.7	8.3	8.0
Financial companies, total	28.5	28.6	27.0	27.0	27.4	29.1	28.8	27.7	27.6	27.0
Public sector										
Central government	5.2	4.4	4.5	4.5	4.6	4.7	3.8	3.1	2.9	2.0
Local government	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Social insurance funds	3.8	3.5	3.2	3.2	3.5	3.4	3.1	3.3	2.8	2.8
Public sector, total	9.2	8.0	7.8	7.8	8.2	8.1	6.9	6.4	5.7	4.8
Household	15.0	14.8	14.3	13.4	14.5	13.9	13.3	11.2	10.8	10.9
Non-profit making organisations										
Companies	1.8	2.1	2.1	2.0	2.1	1.8	1.6	1.7	1.9	2.2
Household	2.8	2.7	2.7	2.4	2.5	2.5	2.4	2.2	2.2	2.2
Non-profit organisations, total	4.6	4.8	4.8	4.4	4.6	4.3	4.0	3.9	4.1	4.4
Rest of the world	33.9	35.3	37.2	38.0	35.8	35.4	37.8	38.7	40.3	41.0
ALL SECTORS, TOTAL	100	100	100	100	100	100	100	100	100	100

1. Investment companies are defined as limited companies with ownership spread among a great number of physical individuals, which primarily manage equities and other securities with a significant risk diversification across industries and companies. This definition is derived from Statistics Sweden's Standard Classification by Institutional Sector 2000.
Source: Statistics Sweden

Exchange-traded funds

Exchange-traded funds are often designed to give the same return as an equity index. They can also be linked to other asset classes such as interest rates, currencies and commodities. The greatest difference between exchange-traded funds and traditional funds (see the section on fund management companies in the chapter on financial intermediaries) in Sweden is that investors trade fund units via market makers on a marketplace instead of the issuer of the fund issuing or redeeming them in exchange for cash. In recent years, exchange-traded funds have become increasingly popular, among other reasons because they have relatively low management fees and can be bought and sold quickly compared with traditional funds. To obtain the same return as an equity index (for example), the issuer of an exchange-traded fund usually invests in the underlying equities.⁵⁸ Exchange-traded funds are funds in a legal sense, meaning that the investors' money will be protected against losses in the event that the fund enters bankruptcy or otherwise encounters difficulties in fulfilling its commitments.

Exchange-traded investment products

Exchange-traded investment products is a generic term for a range of different types of investment product traded on Swedish marketplaces. One common denominator is that the return of these products is determined from an underlying asset that could be a share or an equity index, but could also be another asset class such as interest rates, currencies or commodities. Unlike exchange-traded funds, exchange-traded investment products are not funds in a legal sense and the potential return is guaranteed by the issuer of the product, who also often acts as market maker. There are many different types of exchange-traded investment products and the names of the instruments vary to an extent from participant to participant.⁵⁹

The types of exchange-traded investment product traded most frequently are various types of warrants, mini futures and constant leverage certificates, which are all instruments with leverage. Leverage means that the increase or decrease in value of the instrument is greater than the increase or decrease in value of the underlying asset. In their simplest form, warrants resemble normal options and,

⁵⁸ They also occasionally instead invest in an optimised basket of equities or in derivative contracts.

⁵⁹ The industry organisation Setipa (Swedish Exchange Traded Investment Products Association) applies the marketplace NDX's categorisation model whereby about twenty instrument types are divided into four categories: leverage products, participation products, yield enhancement products and capital protection products.

like options, give the holder the right, but not the obligation, to purchase or sell an underlying asset at a certain date in the future at a predetermined price. What distinguishes warrants from options is that, as a rule, they are issued by a party other than the issuer of the underlying asset, which usually means banks and securities companies. In addition, market liquidity is guaranteed by market makers, which does not have to be the case for options. Mini futures resemble warrants to a certain extent but have no fixed final date. Furthermore, they can be de-listed from trading if the price of the underlying asset reaches a certain reference level.⁶⁰ Constant leverage certificates differ from the other instruments in that their return is calculated on the basis of the underlying assets daily percentage return rather than market value.

MARKETPLACES

Marketplaces have two main tasks. They provide assistance to companies wishing to offer equities for sale and administer the technical systems and regulatory framework that make equity trading possible. There are currently two categories of marketplace: *regulated markets* (including traditional stock exchanges) and *trading platforms*, which are usually called MTFs (Multilateral Trading Facilities). At year-end 2013, there were two regulated marketplaces in Sweden: Nasdaq OMX Stockholm and Nordic Growth Market (NGM Equity). There were also three MTFs: First North Stockholm, Nordic MTF and Aktietorget. Swedish equities can also be traded on certain overseas MTFs that have specialised in providing a marketplace for equities that are already listed on a stock exchange and thereby fulfil the listing requirements. There were an estimated 513 listed public limited companies in Sweden at the end of 2013 (see Table 4). Of these, 266 were listed on a regulated market and 247 were listed on an MTF.

On a regulated market, usually referred to as a stock exchange, companies must comply with the requirements of both Swedish legislation and the specific marketplace. These requirements apply to factors such as the company's size, provision of information and corporate governance.

MTFs are marketplaces run by a stock exchange or securities company which have simpler regulations than a regulated market. MTFs are thus appropriate for use by newer and smaller companies, as the lower requirements make listing less expensive for companies.

⁶⁰ This is generally done to prevent investors from losing more than the amount they have invested.

However, MTFs can themselves choose to apply the stricter requirements of the regulated markets.

Regulated markets and MTFs must also establish regulations that govern information related to trading. Companies intending to be traded on these marketplaces must undertake to provide the market with information concerning decisions and events that may influence stock prices. The reason for this is that all traders should have the possibility of having access to the same information at the same time. This is intended to create confidence in the market and protect investors. The overwhelming majority of equity trading in Sweden is conducted in an electronic trading system at a regulated marketplace or at an MTF. But it is also possible to trade equities outside these. A portion of the trading that takes place outside these systems is conducted in accordance with Nasdaq OMX Stockholm's regulations and is reported to Nasdaq OMX Stockholm as normal stock exchange transactions. Examples of such trading include that taking place via telephone, email or chats, for example over the information system Bloomberg. The rest of the trading outside the system takes place directly between the buyer and the seller (a practice also known as OTC trading) and is not subject to the regulations of any marketplace.

EQUITY TRADING ON NASDAQ OMX STOCKHOLM

Nasdaq OMX Stockholm is the predominant marketplace for Swedish equities. The market value of the equities listed on the marketplace made up 99 per cent of the market capitalisation of all listed Swedish equities at the end of 2013 (see Table 4). The following section describes the members of Nasdaq OMX Stockholm, its trading structure and turnover.

Table 4. Swedish marketplaces 2013 (2012 within parentheses)

	NUMBER OF COMPANIES		MARKET CAPITALISATION SEK BILLION	
Nasdaq OMX Stockholm	256	(258)	4 826	(3 916)
NGM Equity	10	(12)	1.8	(1.2)
Aktietorget	120	(117)	13	(6.7)
First North Stockholm	113	(103)	30	(23)
Nordic MTF	14	(17)	2.6	(1.2)
Total	513	507	4 874	3 948

Sources: Respective marketplace, Statistics Sweden and the Riksbank

Members of Nasdaq OMX Stockholm

All trading on Nasdaq OMX Stockholm is conducted through its members. Both large and small investors have to go through one of these members in order to buy or sell equities. The members consist of Swedish securities institutions, i.e. securities companies and credit institutions which are licensed by Finansinspektionen to engage in securities trading. Members also include remote members, i.e. foreign companies that engage in securities trading in Sweden from abroad. Nasdaq OMX Stockholm has 80 equity-trading members, 42 of which are remote members. In principle, non-financial companies and branches of foreign companies can be members of the stock exchange. At present, however, there are no members in this category in Nasdaq OMX Stockholm.

Trading structure

Equity trading on Nasdaq OMX Stockholm takes place electronically through the matching of orders in the trading system INET Nordic.⁶¹ The trading day both begins and ends with an auktion, the purpose to determine the price that provides the largest number of finalised orders for each share. During the trading day, buyers and sellers place buy or sell orders with their securities institution. Every order is then forwarded to brokers for entry into an order book in the trading system. See Table 1 for a description of how instruments are traded on the equity market.

Many exchange members provide Internet-based services for placing orders. This can often entail lower transaction costs (for

Table 5. Some key figures for equity trading on various marketplaces 2013

	NASDAQ OMX STOCK- HOLM	NGM EQUITY	AKTIE- TORGET	FIRST NORTH STOCK- HOLM	NORDIC MTF
Market capitalisation, SEK billion	4 826	1.8	12.8	30	2.6
Turnover, SEK billion	2 930	0.5	8.3	26	0.5
Average daily turnover, SEK million	11 721	2	33	103	2
Total number of deals closed during the year, thousand	43 314	49	714	1 172	46
Average amount per deal	67 653	9 267	11 682	21 916	10 791
Average number of deals per day	173 254	191	2 858	4 688	182
Rate of stock turnover, per cent	67	30	86	96	26

Sources: Respective marketplace, Statistics Sweden and the Riksbank

⁶¹ INET Nordic was launched in February 2010. This is the same system that Nasdaq OMX uses on its US exchange and on its European trading platform Nasdaq OMX Europe. The fixed-income market on Nasdaq OMX Nordic uses the SAXESS system.

example brokerage fees) than when trading via securities companies and banks. When a deal is closed, information is sent to Euroclear Sweden where the transaction is settled.⁶² Settlement entails the equities being deregistered from the seller's account and registered on the purchaser's account.⁶³ At the same time, payment for the transaction is made via the buyer's and seller's banks. Only when this is done is the transaction completed, which usually takes place three days after the deal is closed. More information about securities settlement is available in the chapter The financial infrastructure.

The electronic trading facilities have provided the possibility of conducting what is known as algorithmic trading on the equity market. Algorithmic trading means automated trading where orders and execution are managed by computer. Algorithmic trading also covers high frequency trading (HFT), which is algorithmic trading at a high frequency. In only microseconds, the computer (for example) searches a large number of marketplaces and then places its order where the market conditions for a transaction are considered to be best. This type of trading is common on the equity market, but also occurs on other markets, such as the foreign exchange market. Nasdaq OMX Stockholm has estimated that algorithmic trading accounted for approximately 45 per cent of all trading on the exchange in 2011 and that high frequency trading amounted to about 13 per cent of all trading.⁶⁴

Listed companies

At the end of 2013, 256 companies were listed on Nasdaq OMX Stockholm (see Table 4). Companies listed there are presented on a Nordic list, Nasdaq OMX Nordic, which also includes the companies listed on the stock exchanges in Helsinki, Copenhagen and Reykjavik. This has resulted in a harmonisation of the listing requirements in these countries. To be listed, the expected market value of the equities must be no less than EUR 1 million. Among other requirements are that there should be a sufficient number of shareholders and that the company has complete accounting documentation going back at least three years. The company must also show stable profitability or have financial resources to cover operations for at least 12 months.

62 Equities traded on Nasdaq OMX Stockholm and belonging to the Large Cap list are cleared at the central counterparty European Multilateral Clearing Facility (EMCF). More information about central counterparties is available in the chapter The Financial Infrastructure.

63 If the customer has a custody account at a broker, the transaction is instead registered in the custodian's management account at Euroclear Sweden.

64 Read more about high frequency and algorithmic trading on the Swedish equity market in *Investigation into high frequency and algorithmic trading*, 2012, published on Finansinspektionen's website.

The Nordic list is divided into three segments according to the market value of the companies: Large Cap, Mid Cap and Small Cap. The Nordic Large Cap segment comprises companies with a market capitalisation of more than EUR 1 billion. Companies with a market value of between EUR 150 million and one billion are placed in the Nordic Mid Cap segment. The segment Nordic Small Cap includes companies with a market value of less than EUR 150 million.

Turnover and market capitalisation

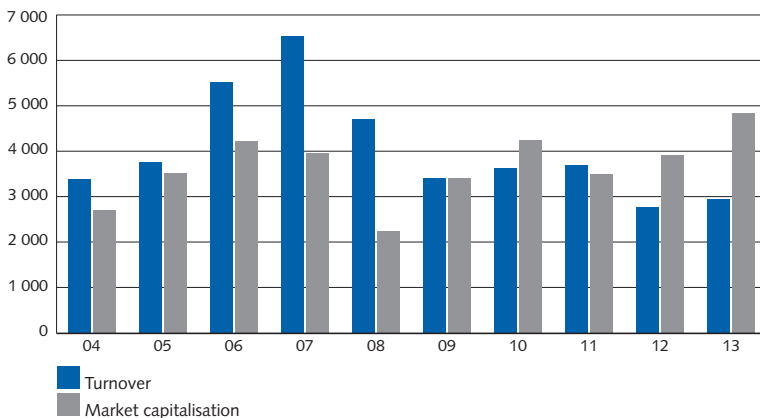
At the end of 2013, the market capitalisation of the equity market at Nasdaq OMX Stockholm was SEK 4,826 billion, an increase of 23 per cent compared with the previous year. Turnover amounted to just over SEK 2 900 billion in 2013. This is 55 per cent less than the peak level reached in 2007 (see Chart 13). However, the number of transactions increased over the same period, from almost 29 million to just over 43 million. Compared with the bond market, for example, turnover is notably less on the equity market, counted in kronor, but considerably larger when counted in number of transactions.

EQUITY TRADING ON OTHER SWEDISH MARKETPLACES

Regulated markets

In addition to Nasdaq OMX Stockholm, there is one other regulated market for equity trading – Nordic Growth Market (NGM). NGM has specialised in small and medium-sized growth companies and offers listing and trading on the NGM Equity list. At year-end 2013, a total of 10 companies were listed on NGM Equity (see Table 4).

**Chart 13. Turnover and market capitalisation on Nasdaq OMX Stockholm
SEK billion**



Source: Nasdaq OMX Stockholm

MTFs

At year-end 2013, there were three MTFs in Sweden: First North Stockholm, Nordic MTF and Aktietorget. Like NGM Equity, all three of these MTFs are focused on the trade in equities in small and medium-sized growth companies.

First North Stockholm is run by Nasdaq OMX Stockholm. Trading takes place through INET Nordic, the same trading system used by Nasdaq OMX Stockholm. Requirements for trading on First North Stockholm are less stringent than those for Nasdaq OMX Stockholm. However, there is a segment known as First North Premium, in which companies must comply with the same high demands for reporting and information as presented by Nasdaq OMX Stockholm. At the end of 2013, 113 companies were listed on First North Stockholm.

NGM runs Nordic MTF. The electronic trading system provided by NGM is known as Elastica. NGM is responsible for monitoring the listed companies and the trading in the companies' shares. At year-end 2013, a total of 14 companies were listed on Nordic MTF.

The third Swedish MTF is Aktietorget. Just as with Nasdaq OMX Stockholm and First North Stockholm, trading takes place through the trading system INET Nordic. Aktietorget complies with the general regulations for an MTF, but has in addition its own regulatory framework to protect investors. At year-end 2013, a total of 120 companies were traded on Aktietorget.

TRADING IN EQUITY-RELATED EXCHANGE-TRADED INSTRUMENTS ON SWEDISH MARKETPLACES

The largest part of the trading in equity derivatives on Swedish marketplaces takes place under the auspices of Nasdaq OMX Stockholm. Here, futures and options are traded with equities and stock-indices as underlying assets. Equity index futures are traded the most. Nasdaq OMX also provides clearing for derivatives traded on its marketplaces and for certain derivative contracts that are traded OTC (see the chapter The financial infrastructure).

Trading is also conducted in exchange-traded funds and investment products on Nasdaq OMX Stockholm. However, trade in exchange-traded investment products takes place to a greater extent under the auspices of NGM in the Swedish part of Nordic Derivatives Exchange (NDX Sverige) (see Table 6).

Table 6. Turnover in exchange-traded funds and products in 2013, SEK billion

	NDX SVERIGE	NASDAQ OMX STOCKHOLM	TOTAL
Warrants	4.6	1.2	5.8
Mini futures	9.0	0.2	9.2
Constant leverage certificates	24.9	6.9	31.9
Other instruments	0.4	6.3	6.7
Exchange-traded investment products, total	38.9	14.7	53.6
Exchange-traded funds, total	0.0	100.5	100.5

Sources: NGM, Nasdaq OMX Stockholm and the Riksbank

■ Financial intermediaries

This chapter describes the different types of middleman, or intermediary, involved in the financial system. The intermediaries can be divided into various groups:

- Credit institutions, in the form of banks, mortgage institutions and credit market companies, which are important for the supply of credit.
- Private equity investment companies that play an important role in the supply of venture capital.
- Investors, in the form of insurance companies, fund management companies and pension funds, which take care of large shares of the general public's savings.
- Securities companies, which act as brokers and market-makers in the financial markets.

In this chapter, the intermediaries have been classified by type of institution. The regulation of the financial intermediaries (see the box Central regulations in the financial sector) has also been designed using the type of institution as a basis. Several different kinds of intermediary are often included in one and the same financial group. Table 7 provides an overview of the way in which the business activities have been divided within the six largest financial groups in Sweden.

As the table shows, the groups often include several different types of intermediary such as banking companies, mortgage institutions, insurance companies and fund management companies. The reason behind this kind of organisation is that several major Swedish banks have long sought to provide products and services in the entire financial field.

The groups organise their operations in different ways. For example, two of the six largest financial groups in Sweden have their securities trading businesses in separate subsidiaries. The others have opted to offer these services through their banking arms. There are also financial groups that do not have banking activities as their main operations. For example, there are financial groups that have insurance activities as their main operation, but which also conduct banking operations.

The statistics presented below in this report cover the banks' Swedish operations. They therefore contain neither the Swedish banks' overseas operations conducted through branches abroad, nor the operations conducted in the banks' foreign subsidiaries. As regards the foreign participants active on the Swedish financial market, branches in Sweden and Swedish subsidiaries are included in the statistics.⁶⁵ To provide a complete picture of the four largest Swedish banking groups, a brief outline of their operations abroad is presented at the end of the section on banks.⁶⁶

However, the banks, mortgage institutions, insurance companies, securities companies and so on will be dealt with separately in this chapter. Charts 14 and 15 provide an overview of the size of the operations conducted in the most important categories of financial intermediary.

Table 7. Operations of the major banking groups in Sweden

PARENT COMPANY	BANK	MORTGAGE INSTITUTION	FUND MANAGEMENT COMPANY	SECURITIES BUSINESS	INSURANCE COMPANY	FINANCE COMPANY
Nordea AB	Nordea Bank AB	Nordea Hypotek AB	Nordea Fonder AB	Nordea Investment Management AB	Nordea Liv och Pension AB	Nordea Finans AB
Svenska Handelsbanken AB	Svenska Handelsbanken AB	Stads-hypotek AB	Handelsbanken Fonder AB	Conducted by the bank	Handelsbanken Liv AB	Handelsbanken Finans AB
Skandinaviska Enskilda Banken AB	Skandinaviska Enskilda Banken AB	Conducted by the bank	SEB Fonder AB	Enskilda Securities AB	SEB Trygg Liv AB	Conducted by the bank
Swedbank AB	Swedbank AB	Swedbank Hypotek	Swedbank Robur Fonder AB	Conducted by the bank	Swedbank Försäkring AB	Swedbank Finans AB
Danske Bank A/S	Danske Bank Sverige ¹	Conducted by the bank ²	Danske Capital ³	Conducted by the bank	Danica Pension Försäkringsaktiebolag ³	Conducted by the bank
Skandia AB	Skandia-banken	Conducted by the bank	Skandia Fonder AB	Conducted by the bank	Livförsäkringsaktiebolaget Skandia	–

Note. The above corporate groups do not group their companies according to the table, which is why certain companies may be responsible for more than one line of business. They also have a larger number of companies than shown above.

¹ Branch.

² Realkredit i Danmark is the Danske Bank group's mortgage institution.

³ Common specialised entities.

Sources: The banks' annual reports

⁶⁵ The difference between a subsidiary and a branch is that a subsidiary, unlike a branch, is a distinct legal entity, separate from the parent company, while branches are included in the parent company or in a subsidiary. A branch has no equity, and its assets and liabilities are considered to be a part of the net wealth of the company to which the branch belongs. It can therefore be considered as a division with its own administration.

⁶⁶ See the *Financial Stability Report*, published by the Riksbank twice a year, for a more detailed review of the activities of the major banks.

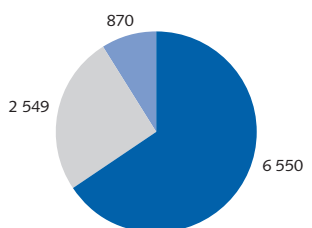
Credit institutions

Credit institutions include banks and non-bank credit institutions, which is to say companies offering loans with a particular focus, such as mortgage institutions (see Table 8). The credit institutions are specialists in assessing and monitoring credit risk thanks to the often long-term relationships they have with their customers, in addition to which they have business experience. They thus play an important role in supplying credit in the economy.

The banks have long played a key role among credit institutions.⁶⁷ One of the banks' most important functions in society is their role in the payment system (see the chapter The financial infrastructure). Among other services, the banks provide the accounts through which many payment transactions are made plus a number of payment services associated with the transactions.

The banks have also traditionally had a monopoly on accepting deposits. These deposits, which can very quickly be converted into cash or used for payments, mean that the banks contribute to the supply of liquidity in the economy. However, the banks' monopoly on accepting deposits was abolished on 1 July 2004, since which credit

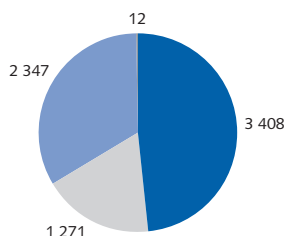
Chart 14. Total assets at end of 2013
SEK billion



Other credit market companies
Mortgage institutions
Banks

Source: The Riksbank

Chart 15. Total assets and investment assets at the end of 2013
SEK billion



Securities companies
Fund management companies
National Pension Funds
Insurance companies

Note. The chart shows the total assets for securities companies, while, for insurance companies and AP funds, it shows investment assets and, for securities funds, it shows the funds managed.

Sources: Finansinspektionen, the AP funds' annual reports and the Riksbank

⁶⁷ There are also institutes that provide credit and are outside of the traditional banking sector. This is usually referred to as shadow banking. Examples of shadow banking are certain types of money market funds and hedge funds. See also the box Shadow banking and the Swedish financial system, *Financial Stability Report 2014:1*, Sveriges Riksbank.

market companies have also been allowed to accept deposits covered by the Swedish deposit guarantee scheme.⁶⁸ Furthermore, subject to certain conditions, other companies may also accept deposits from the public. However, these deposits are not covered by the deposit guarantee scheme.

In general, credit market companies are specialist lenders within a particular area. Among credit market companies, *mortgage institutions* and *finance companies* have the largest market share. Chart 16 shows a breakdown of lending to the public, between banks, mortgage institutions and other credit market companies.

BANKS

The *banks* are the largest group of lenders among all credit institutions. They account for almost half of the credit institutions' total lending to the public, which corresponds to SEK 2 704 billion (see Chart 16). In the Swedish market, the four largest banks together account for 74 per cent of the banks' total assets (see Table 9).

In addition to the limited liability banks, the Swedish market also includes savings banks and co-operative banks. There are a large number of independent savings banks in Sweden. However, these are usually small, operating solely in regional or local markets. Unlike limited liability banks, savings banks lack equity capital and therefore have no shareholders. The profits of the business are therefore not distributed. Instead, any surpluses are retained in the bank as reserves. The number of savings banks has declined in recent years, frequently through mergers of small savings banks.

A co-operative bank is an economic association established to offer banking services on behalf of its members. The members of the bank are involved in the decisions that affect the bank's activities. Co-operative banks do not have shareholders either; the profits are re-invested in the business and can, to a certain extent, be distributed to the bank's members in the form of a bonus dividend.

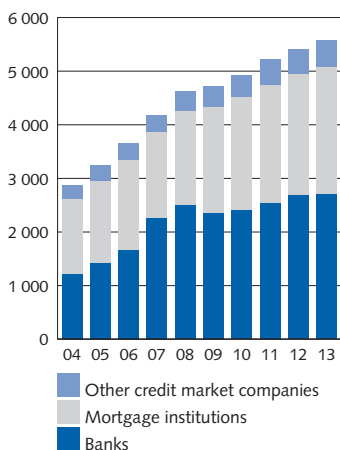
Table 8. Different types of credit institution

Credit institutions	
Banks	Credit market companies
Limited liability companies	Mortgage institutions
Savings banks	Other credit market companies (including finance companies)
Co-operative banks	

⁶⁸ The deposit guarantee scheme aims to protect customers' deposits in accounts up to the amount in Swedish kronor that corresponds to EUR 100,000 per customer and institution.

At the end of 2014, there were a total of 117 banks established in Sweden. These comprised 39 limited liability banks, 27 foreign-owned branches, 49 savings banks and two co-operative banks.⁶⁹ Compared with 2013, three new foreign-owned branches have been established in the Swedish bank market.

Chart 16. Credit institutions' lending to public SEK billion



Note. 1. The chart shows lending from an institutional perspective. As the mortgage activities of certain banks are conducted within the bank, the banks' credit granting statistics include a certain portion of loans traditionally regarded as mortgages, i.e. loans to households provided against liens on real property. This means that the mortgage institution lending statistics do not include all the mortgages taken in Sweden. However, total lending from credit institutions is not affected by this.

Note. 2. Since 2007, SEB has conducted its mortgage operations within the banking company, rather than within a separate company. This means that the banks' credit granting statistics, as of 2007, also include lending previously carried out within SEB Bolån, which was formerly included in the category lending from mortgage institutions. The relative change in lending from banks and lending from mortgage institutions between 2006 and 2007 can be partly attributed to this.
Source: The Riksbank

Table 9. The ten largest banks' total assets at year-end 2013 SEK billion

SEB	1 493
Nordea Bank	1 448
Swedbank	1 020
Handelsbanken	857
Danske Bank ¹	714
SBAB Bank	161
Länsförsäkringar Bank	112
DNB ¹	97
Landshypotek	78
Skandiabanken	44
Total, 10 largest	6 025
Total, all	6 550

Note. The figures in the table refer to operations conducted in Sweden. Foreign operations conducted by branches or subsidiaries are not included. The figures for foreign banks' branches and subsidiaries therefore refer only to operations in Sweden.

1. Foreign branch.

Source: The Riksbank

⁶⁹ Co-operative banks at this point in time were Ekobanken and Jak Medlemsbank.

Creating money

WHAT IS MONEY?

Money is an asset that is generally accepted as

- a means of payment, that is, something that can be used to buy goods or services
- a store of value, something that households and companies can save to use later
- a measure of value, that is, something that can be used to express a price.

The most fundamental role of money is as a means of payment. Previously, all sorts of things, from cattle to precious metals, were used for this purpose, but now we regard banknotes, coins and deposits in bank accounts as money.

For a long time, the issuer of money needed to have a special asset, often gold, which the general public could exchange the money for. This was necessary for the general public to trust in the value of the money. The fact that banknotes and coins had a value in a special asset was called a standard (gold

standard, silver standard and so on).

In Sweden, the gold standard was introduced at the beginning of the 20th century when the Riksbank was given the monopoly on issuing banknotes and coins. This was an international exchange rate system based on the participants' currencies being redeemable against gold. The Swedish gold standard was abandoned in 1931 after speculative attacks against the Swedish krona. In 1951, the Swedish krona was pegged to gold again when Sweden adopted the Bretton Woods system, where the US dollar, which in its turn was pegged to gold, acted as anchor for the Swedish krona. During these years, banknotes and coins were thus in effect promissory notes that could be exchanged for other forms of asset or other currencies. The Bretton Woods system collapsed in 1973.

Since 1992, Sweden has had a floating exchange rate. The changeover to a floating exchange rate followed on from speculative attacks that the Riksbank would not be able to redeem Swedish krona against foreign currencies at a fixed exchange rate. Today, the gold reserve forms a minor

part of the Riksbank's assets and the major part instead consists instead of foreign currency (the foreign-exchange reserve).

The value of Swedish money today relies in the general public's confidence. It is possible to use this money because we members of the Swedish society have agreed to allocate a value to them and we have confidence that they will retain this value. This in turn assumes that we trust that the inflation target will be attained, that is, that inflation will not undermine the value of money. It is thus possible to use banknotes, coins and deposits to pay for goods and services and to repay debts.

THERE ARE DIFFERENT MEASURES OF MONEY

There are several different ways of measuring money. Normally, one distinguishes between the money the general public holds and the central bank's supply of money. The general public's holdings of money can in turn be calculated in different ways, depending on how liquid they

are. What is traditionally referred to as money, that is, banknotes and coins, comprises only a small share of the general public's holdings of money. The larger share is in the form of deposits in the commercial banks. The general public's deposits with the commercial banks are usually known as commercial bank money and this is the measure usually used for the volume of money in Sweden.

Commercial bank money is a relatively broad measure of money. A narrower measure is the central banks' supply of money, known as central bank money.⁷⁰ The Riksbank's supply of money covers banknotes and coins in circulation as well as the commercial banks' deposits with the Riksbank.⁷¹

HOW IS MONEY CREATED?

The Riksbank creates central bank money...

The Riksbank creates money by lending Swedish krona to the commercial banks. Increased lending by the Riksbank means that the asset side of

⁷⁰ Central bank money can also be called the monetary base. The definition of the monetary base may differ from one country to another.

⁷¹ The commercial banks' deposits with the central bank are also known as reserves. The reserves are reported on the liability side of the Riksbank's balance sheet as fine-tuning transactions, outstanding Riksbank Certificates and funds in the deposit facility. Outstanding banknotes and coins are also reported on the Riksbank's liability side.

the Riksbank's balance sheet increases. This automatically leads to an increase on the liability side, either through an increase in the volume of banknotes, or through an increase in the banks' deposits with the Riksbank. The amount that the commercial banks hold in the central bank depends on the demand from the general public. In the short run, the general public's demand for banknotes and coins does not change.

The lending will in one way or another come back to the Riksbank through the banks' deposits, which reflect the fact that the system is closed. What this means is that if the Riksbank lends to a bank that in its turn lends to a household, which in its turn uses this money to buy a home, these funds will eventually be deposited in a bank that in its turn deposits the funds in an account with the Riksbank.

The Riksbank's lending to the banks is done against collateral or by the Riksbank buying Swedish securities from the banks. To reduce the risk of losses if a bank were for some reason unable to repay the loan, the Riksbank does not allow the banks to borrow money to an amount that fully

corresponds to the collateral's nominal value. Instead, the Riksbank makes a haircut for each type of collateral it accepts. The collateral mainly consists of Swedish government securities, but so-called covered bonds can also be used.

*... the public withdraws
banknotes and coins*

Members of the public access banknotes and coins when they withdraw cash from their accounts. Please note that this does not mean that the total volume of money changes; merely that the percentage of banknotes and coins increases at the same time as the percentage of deposits in banks declines. The Riksbank does not govern how much cash is in circulation in society, this is instead determined by demand from the general public.⁷² Figure 1 shows a simple example of this. At the outset (A), Customer A has SEK 100 in a bank account at Bank A. Customer A then decides to withdraw his money (B). If Bank A does not have banknotes and coins in stock, it must buy banknotes and coins from the Riksbank. The Riksbank then has

⁷² Read more about banknotes and coins on the Riksbank's website.

a claim on Bank A at the same time as the Riksbank's liabilities side increases by the amount of the banknotes and coins now in the hands of the public (Customer A). The result can be seen under (C). The Riksbank's balance sheet has increased, Bank A has a debt to the Riksbank instead of deposits on the liabilities side and Customer A now has banknotes and coins instead of deposits in his account.

The commercial banks increase the money supply

In Sweden, the money supply is mainly increased by the lending of the commercial banks. This is illustrated in Figure 2. It is assumed that there is only one commercial bank in the system, Bank A. Customer A is granted a mortgage of SEK 100 for an apartment. The money is deposited in Customer A's account at Bank A at the same time as the loan creates an

Figure 1. The public withdraws cash

A			B			C		
The Riksbank			The Riksbank			The Riksbank		
	Asset	Liability		Asset	Liability		Asset	Liability
Banknotes and coins		0	Banknotes and coins		+100	Banknotes and coins		100
Claim Bank A	0		Claim Bank A	+100		Claim Bank A	100	
Bank A			Bank A			Bank A		
	Asset	Liability		Asset	Liability		Asset	Liability
Asset	100		Deposit Customer A		-100	Asset	100	
Deposit Customer A		100	Liability to the Riksbank	+100		Liability to the Riksbank		100
Customer A			Customer A			Customer A		
	Asset	Liability		Asset	Liability		Asset	Liability
Money in account Bank A	100		Money in account Bank A	-100		Banknotes and coins	100	
Liability		100	Banknotes and coins	+100		Liability		100

Figure 2. The commercial bank's lending

A			B			B		
Customer A			Customer A			Customer B		
	Asset	Liability		Asset	Liability		Asset	Liability
Deposit account Bank A	+100		Deposit account Bank A	-100		Deposit account Bank A	+100	
Liability Bank A		+100	Apartment	+100		Apartment		-100
			Liability to Bank A		100			
Bank A			Bank A					
	Asset	Liability		Asset	Liability			
Mortgage	+100		Mortgage	100				
Deposit Customer A		+100	Customer A account		-100			
			Customer B account		+100			

■ = New money
(which increase the money supply)

asset in the form of a mortgage on the bank's balance sheet. Customer A now has an asset in the form of a deposit with Bank A and a liability to Bank A in the form of a loan. The money that is lent to Customer A will now be counted as part of the total money supply as it is owned by the public: there is new money in the system (A). When the time comes for Customer A to pay for the apartment, the money is transferred to Customer B's account as payment for the apartment (B), so the money will remain on bank A's liabilities side. The deposit from Customer B in this way funds the loan to Customer A.

If the assumption is instead that there are more banks and that Customer B is customer at a different bank, Customer B will deposit the money in Bank B. This means that Bank A will lack funding for the mortgage and must therefore borrow money from Bank B at the end of the day as Bank B will have a surplus.

This in turn means that there must be an effective interbank market on which Bank A can

borrow money from Bank B.⁷³

However, this does not mean that the banks can endlessly increase the money supply – they cannot lend unlimited amounts of money. Lending is limited by several factors. The first is that there is not an unlimited number of creditworthy borrowers in the economy. If the banks lend money to non-creditworthy borrowers, they risk exposing themselves to losses, what is known as credit risk. They also risk being called into question by investors and thus experiencing problems with funding. The second factor is that the bank wants to hold a certain reserve in liquid funds to avoid suffering a liquidity crisis as soon as someone makes a withdrawal from an account. Lending is also dependent on the public demand for cash. The more of the money supply that is in cash, the less money the banks will have to lend to new borrowers. The banks are also subject to capital adequacy requirements, which means that for every krona they lend they need to retain a certain amount of capital.

73 Read more about the overnight market and how it works on the Riksbank's website.

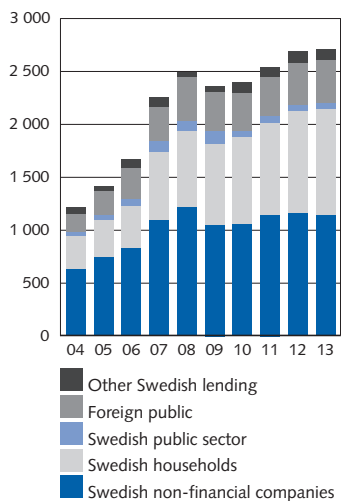
The banks' assets and liabilities

The banks' assets consist for the most part of loans to the public in Sweden and abroad. At the end of 2013, lending to the public in Sweden and abroad totalled SEK 2 704 billion, corresponding to around 41 per cent of the banks' total assets (see Chart 17 and 18). 42 per cent of this lending went to Swedish non-financial companies and 37 per cent to Swedish households. Around 15 per cent of the lending went to the public abroad.⁷⁴ The remaining 5.5 per cent consisted of lending to the Swedish public sector and other Swedish lending.

Apart from lending to the general public, the banks also have large claims on Swedish and foreign monetary financial institutions, MFIs.⁷⁵ These claims together comprised around 24 per cent of the assets (see Chart 18). In addition, around 13 per cent of the assets consisted of debt securities.

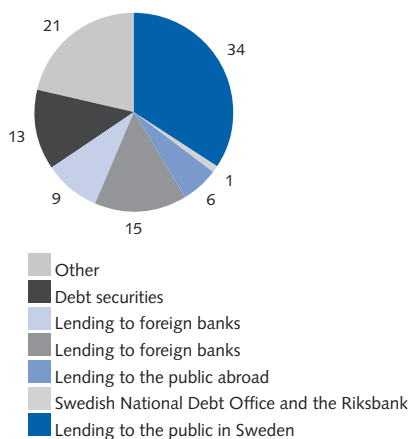
The largest item on the liabilities side of the banks' balance sheets is deposits from the public in Sweden and abroad. During 2013, these

Chart 17. The banks' lending to the general public by borrower category SEK billion



Note. The figures for Swedish banks include lending by the entities conducting their operations in Sweden. Swedish banks' operations conducted by branches or subsidiaries abroad are not included. For foreign-owned banks, only branch operations in Sweden are included. Source: The Riksbank

Chart 18. The banks' assets at year-end 2013 Per cent



Note. Claims on the Riksbank amount to 0.3 per cent of total assets. The equivalent figure for the Swedish National Debt Office is 0.8 per cent.

Source: The Riksbank

⁷⁴ This represents only a small part of the Swedish banking groups' lending to the public abroad. The remainder is thus comprised of the bank's foreign subsidiaries (see the introduction to this chapter).

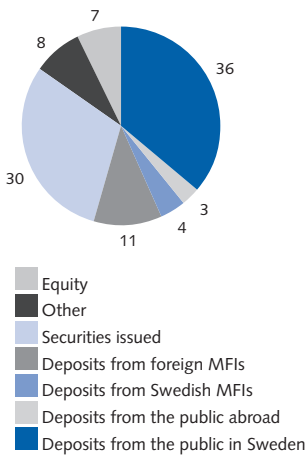
⁷⁵ The monetary financial institutions include other banks, finance companies and securities companies.

deposits constituted about 40 per cent of the banks' total liabilities (see Chart 19). Swedish households accounted for about 52 per cent of this and Swedish non-financial companies for about 28 per cent (see Chart 20). Around 8 per cent of the deposits came from the public abroad. The banks' liabilities otherwise consist of their wholesale funding. These liabilities include both deposits from Swedish and foreign monetary financial institutions and liabilities in the form of securities issued. The banks' equity only constitutes a minor part of total assets.

In addition to the liabilities in the balance sheet, banks may also have off-balance sheet commitments. Typical off-balance sheet items are certain derivatives, guarantees and commitments.

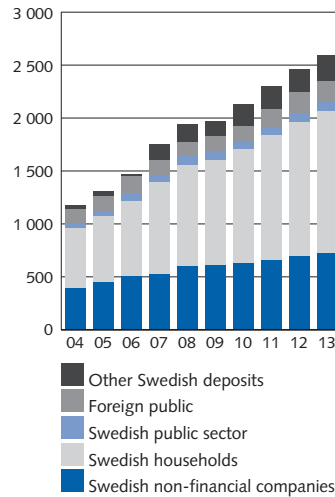
The common factor for these items is that the bank, as yet, does not have a real and quantifiable liability. That is, there is uncertainty regarding whether the bank's commitments will actually result in a liability, when any such liability will occur, and the total amount involved.

Chart 19. The banks' liabilities and equity at year-end 2013
Per cent



Note. The Swedish banks the figures refer to liabilities and equity capital for operations conducted in Sweden. Swedish bank' operations abroad conducted through branches or subsidiaries are not included. For foreign-owned banks included in the branch operations in Sweden and Swedish subsidiaries. Source: The Riksbank

Chart 20. The banks' deposits from the public by lender category
SEK billion



Note. For Swedish banks the figures refer to liabilities and equity capital for operations conducted in Sweden. Swedish banks' operations abroad conducted through branches or subsidiaries are not included For foreign-owned banks included in the branch operations in Sweden and Swedish subsidiaries. Source: The Riksbank

Why and how are the banks regulated?

The fundamental functions of the financial system are to mediate payments, to convert savings into funding and to manage risk. In Sweden, it is mainly the banks that provide these functions, which means that they play an important role in ensuring the economy functions smoothly.

Banks are vulnerable as they convert short-term funding into long-term lending, which creates an imbalance between illiquid and long-term assets and short-term liabilities. As long as the general public and the market have confidence in a bank, this imbalance is not a problem. But if a bank's ability to pay its debts were to be called into question for some reason, for instance as a result of major loan losses or if there was insufficient information available to assess the bank's financial strength, it might lose its funding. Traditionally, this is referred to as a bank run, that is, all of the depositors want to withdraw their money at the same time. But as banks today largely obtain funding on the financial markets, the largest risk is that market participants will not

wish to renew the loans to the bank or buy its securities. In this case, the bank would risk having insufficient liquidity to manage its operations and might therefore need to default on payments. Moreover, if one bank suffers problems, there is a considerable risk that the problems will spread to other banks, as the banks are closely interlinked. This is because, for instance, the banks borrow from one another and trade with one another to a great extent. The combination of inherent vulnerability and the interlinking with other banks gives rise to what is known as systemic risk, that is, the risk of a shock to the entire financial system.

To increase the banks' resilience to problems and thereby reduce the risk of a financial crisis, the banks are subjected to special regulations. These regulations require that the banks have sufficient capital and liquidity as a buffer against potential loan losses and liquidity problems. If a bank has sufficient capital to manage losses and liquidity to withstand liquidity problems there is less risk that it will go bankrupt. This in turn

means that confidence in the bank increases and thus facilitates access to financing.

The banking system is primarily regulated on the basis of the so-called Basel regulatory framework, a series of international agreements (accords) on banking regulations. This framework is not in itself legally binding, but the member countries have agreed to implement the regulations in their national legislation. The first agreement, Basel I, was signed in 1988, but since then the regulations have been revised on several occasions. The most recent regulations are the Basel III Accord, which enters into force in 2014.⁷⁶ Basel III has been designed as a result of the global financial crisis in 2007-2009 and aims to further tighten regulations to strengthen the banks' resilience to losses and liquidity stress and thereby reduce the probability of financial crises. Like the Basel II Accord, Basel III covers three pillars. Pillar 1 stipulates the lowest level of equity capital a bank must have. Pillar 2 deals with supervision and risk assessment,

for instance, special capital requirements are applied to individual banks for the risks not covered by the first pillar. Pillar 3 concerns disclosure requirements so that market participants can more easily understand what risks a specific bank takes. Unlike the previous regulations, Basel III introduces a stricter definition of capital under which a bank's capital base must consist to a greater extent of pure equity capital. In addition, further capital buffers may be required on top of the basic capital requirement to further increase the banks' buffers. The new regulations also include measures to reduce the risk that the banks will suffer a liquidity shortage, for instance, due to lack of confidence.

These measures are the LCR (Liquidity Coverage Ratio), which stipulates that the banks must have sufficiently large liquidity buffers to be able to manage their obligations for at least 30 days, and the NSFR (Net Stable Funding Ratio), which ensures that the maturity differences between a banks' financing and its lending are not too large.

⁷⁶ Basel III will be implemented in the EU via CRR/CRD IV (Capital Requirements Regulation and Capital Requirements Directive IV).

The major Swedish banks' foreign operations

The four major banking groups (Handelsbanken, Nordea, SEB and Swedbank) also conduct a significant part of their operations outside of Sweden. Around 35 per cent of the major banking groups' lending is lending to the public abroad. This in turn means that a large share of the banks' risk is abroad.

Nordea is the bank undertaking the largest proportion of lending to borrowers outside Sweden. About 75 per cent of Nordea's lending is to the general public abroad; only a minor portion refers to the Swedish public. The other three major banking groups have their largest markets in Sweden and an average of one quarter of their operations abroad (see Table 10). Chart 21 shows the geographical distribution of lending in each major banking group at year-end 2013.

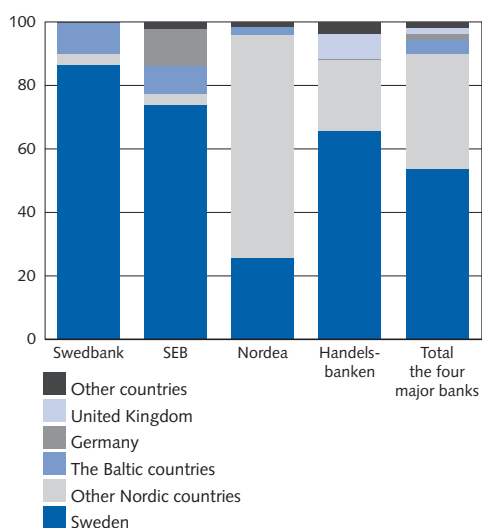
Table 10. Operations of the four dominant banking groups on the Swedish financial market at year-end 2013
SEK billion

	HANDELS- BANKEN	NORDEA	SEB	SWEDBANK	TOTAL FOR THE FOUR MAJOR BANKS
Total assets	2 490	5 585	2 485	1 821	12 381
Loans to public, of which:	1 696	3 034	1 197	1 215	7 142
– loans to Swedish public	1 111	780	885	1 049	3 825
– loans to the public abroad	585	2 254	312	166	3 317

Note. To some extent repos are excluded from the lending to the Swedish public and the public abroad respectively.

Sources: Bank reports and the Riksbank

Chart 21. Geographical breakdown of the major banks' lending 2013
Per cent

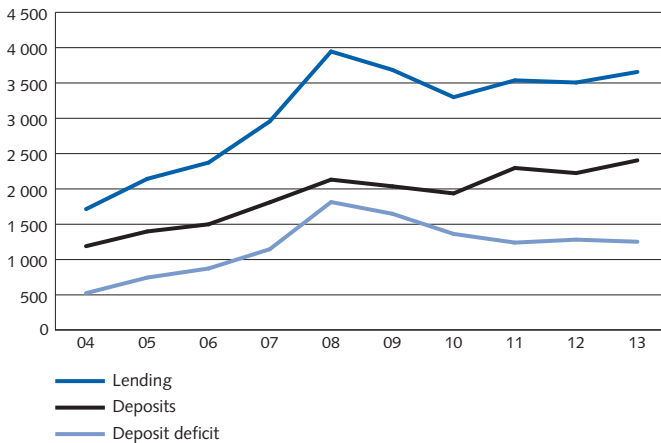


Sources: Bank reports and the Riksbank

Around 55 per cent of the lending abroad is financed through deposits from the public. Chart 22 shows the four major banks' lending in foreign currencies, deposits in foreign currencies and the difference between lending and deposits, what is known as the deposit deficit. The deposit deficit shows the proportion of a bank's lending in foreign currency that is not funded by deposits in the same currency and accordingly has to be funded in some other way. In other words, the deposit deficit shows the banks' dependence on wholesale funding in foreign currencies. At the end of 2013, the deposit deficit in foreign currency amounted to around SEK 1 252 billion, which corresponds to 34 per cent of the lending in foreign currency.

Wholesale funding on capital markets abroad is used not only to fund the deposit deficit in foreign currency, but also to fund parts of the lending in Sweden. The banks' funding may differ, depending on whether they have a centralised or decentralised funding strategy. To a large degree, Swedish banks have a centralised funding model, where liquidity management is carried out as a central function and the parent company holds a liquidity reserve. Foreign subsidiaries which are dependent on market funding normally obtain liquidity through the parent company, which in turn borrows on the global securities market.

Chart 22. The four major banks' deposits and lending in foreign currency
SEK billion



Note 1. Deposit deficit = lending – deposits.

Note 2. As the chart refers to the overseas operations, it only shows the deposit deficit in foreign currency. The total deposit deficit amounted to around SEK 3,250 billion at the end of 2013.

Sources: Bank reports and the Riksbank

MORTGAGE INSTITUTIONS

The mortgage institutions belong to the credit market companies category and their main task is to fund the purchase of property, primarily homes. Loans are secured mainly by legal charge on real property or municipal sureties. State credit guarantees are also used. Lending by mortgage institutions constitutes around 42 per cent of the total lending of credit institutions.

Table 11. Mortgage institutions' total assets and lending at year-end 2013
SEK billion

	BALANCE SHEET TOTAL	LENDING
Stadshypotek	862	764
Swedbank Hypotek	860	834
Nordea Hypotek	463	451
AB Sveriges säkerställda obligationer	227	210
Länsförsäkringar Hypotek	137	112
Frispar Bolån	0	0
Total	2 549	2 371

Note. Frispar Bolån is partly owned by SBAB, Sparbanken Öresund and Sparbanken Syd. AB Sveriges säkerställda obligationer is a fully-owned subsidiary of SBAB.
Source: The Riksbank

Chart 23. The mortgage institutions' loans to public
SEK billion

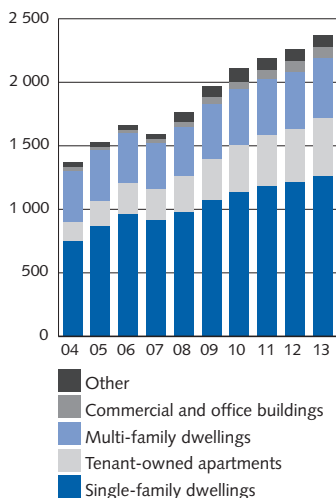
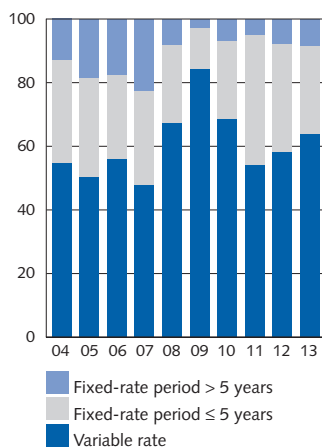


Chart 24. The mortgage institutions' new lending per year by the original fixed-rate term
Per cent



Source: The Riksbank

Note. The decrease in the mortgage institutions' lending to the public from 2006 to 2007 results from the merger of SEB Bolån into SEB's banking arm at that point in time. Therefore this is not a real reduction but only a consequence of the organisational change in SEB.

Source: The Riksbank

There are, in all, six mortgage institutions in the Swedish market. The three largest institutions are part of banking groups and together account for around 86 per cent of the mortgage institutions' total assets (see Table 11). At year-end 2013, lending by the mortgage institutions to the public amounted to SEK 2 371 billion. Lending with single-family dwellings and multi-family dwellings as collateral comprised the largest part – about 73 per cent (see Chart 23). The rest consisted of lending with owner-occupied apartments and commercial and office buildings as collateral.

Interest rates on loans from mortgage institutions can be fixed, for different terms, or variable. The choice of fixed-interest period is affected, for instance, by customers' expectations regarding the development of short-term and long-term interest rates. In 2013, the proportion of new loans granted at variable rates was 64 per cent. Fixed-rate loans with terms of more than five years and fixed-rate loans with terms up to and including five years accounted for almost 9 per cent and 28 per cent respectively of total new loans (see Chart 24).

The distribution of the various fixed-interest periods in the mortgage institutions' total loan stock has varied over the most recent ten-year period. Over this entire period, the percentage of fixed-rate loans for over five years has declined, while loans at fixed rates for terms of five years or less and variable-rate loans have increased. During 2013, loans at variable rates have increased in particular.

At the end of the year, 49 per cent of the total consisted of variable-rate loans, while 46 per cent of the total consisted of loans at fixed rates for terms of up to five years and 5 per cent of the total consisted of loans at fixed rates for terms exceeding five years (see Chart 25).

Their borrowing is obtained primarily from large asset managers, such as the insurance companies, the banks and the AP funds. 26 per cent of this funding is in foreign currencies. The rest of the funding by the bank-owned mortgage institutions primarily consists of loans from their parent bank.

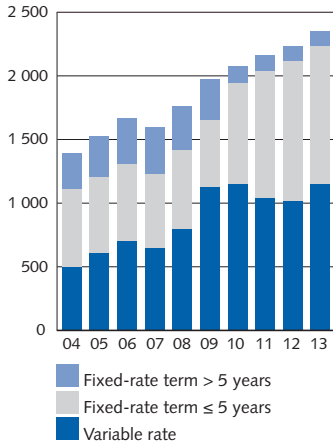
The mortgage institutions fund themselves largely at a fixed interest rate, but lend money at a variable rate, which leads to interest rate risks. To reduce these interest rate risks, the mortgage institutions use derivatives (see the description of interest-rate swaps in the section the Fixed-income market and the box How do the banks finance a mortgage?).

At the end of 2013, long-term borrowing through bonds amounted to SEK 1 632 billion. This consisted entirely of covered

bonds. Short-term borrowing through certificates amounted to only SEK 13 billion (see Chart 26).

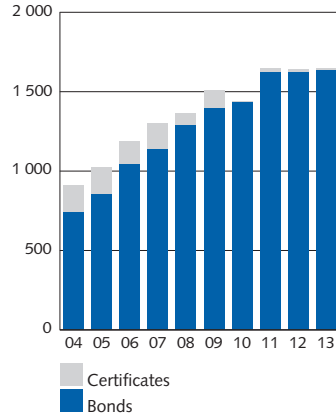
The mortgage institutions mainly obtain funding for the credit they grant by issuing bonds and certificates (see Chart 26).

Chart 25. The mortgage institutions' loan stock by the original fixed-rate term SEK billion



Source: The Riksbank

Chart 26. The mortgage institution securities issued SEK billion



Source: The Riksbank

How do the banks finance a mortgage?

When a bank issues a mortgage, it needs to fund this loan. The Swedish banks do this mainly by issuing so-called covered bonds.^{77, 78, 79} Normally, a mortgage granted to a Swedish household has a maturity according to the loan agreement of between 30 and 50 years. A bank will usually fund a mortgage by issuing a covered bond with an average maturity of four years. The bank then pays a fixed interest rate to the investor, as investors usually prefer bonds that provide known payments.

The banks' financing of mortgages creates an interest rate risk

If the household has a fixed interest rate, the bank can match the interest rate payments from households to the interest payments it makes to the investor in the bond (see Figure 3). If, on the other hand, the household has chosen a variable rate (that is, an interest rate that is adjusted every third month), the interest rate the

household pays to the bank will not match the fixed interest rate the bank pays to the investor. If interest rates were to change in a way that is unfavourable to the bank, the bank will receive a lower amount from the household than it is to pay to the investor. In other words, the bank runs what is known as an interest rate risk.

Swap contracts reduce interest rate risk

To insure themselves against this risk, the bank usually signs a so-called swap agreement (interest rate swap), where the variable interest rate from the household is converted into a fixed interest rate that it pays to the investor in the bond.

Figure 4 illustrates, in three steps, how a bank funds a variable-interest rate mortgage with the help of a covered bond in Swedish kronor with a maturity of four years. The example is based on the way that the four major banks, on average, usually fund their mortgages.

77 A secured bond is guaranteed by the bank that issues it. In addition, the bond is guaranteed by specific assets (usually mortgage loans) that pass to the holder of the bond in the event that the bank fails.

78 The banks also finance the mortgages to some extent with deposits from the public and with unsecured bonds.

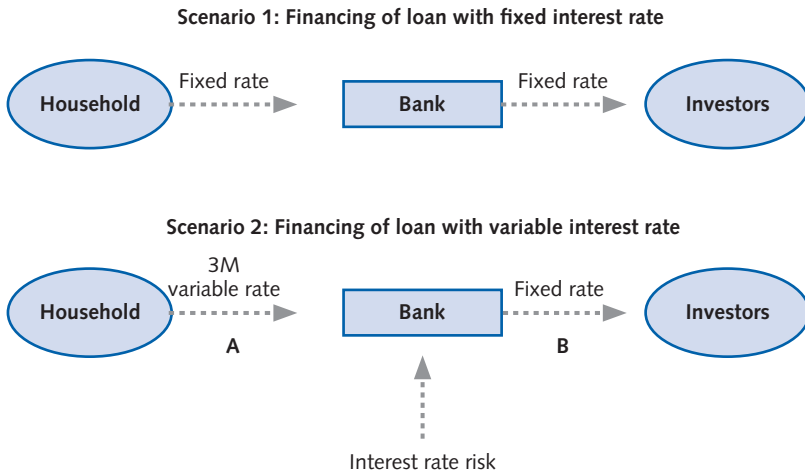
79 For a description of covered bonds, see The market for Swedish covered bonds and links to financial stability in the journal *Economic Review*, 2013:2, Sveriges Riksbank.

A household with a mortgage with a maturity interbank rate plus 2 per cent (A).⁸⁰ The bank pays a fixed rate of 4 per cent to the investor who has bought the covered bond (B). The variable interest received by the bank from the household thus needs to be converted to a fixed rate via a swap contract. The swap contract involves the bank entering into a contract with a third party (a counterpart) to exchange the variable interest rate for the fixed interest rate over the maturity of the bond.

The bank thus pays the three-month interbank rate and receives a fixed rate of 3 per cent from the counterpart (C).

If the bank's various flows are totalled, its funding cost becomes the three-month interbank rate plus 1 per cent. In a swap contract, the bank pays the three-month interbank rate and receives a fixed rate of 3 per cent. After this, 4 per cent is paid to the investor, which leads to the net cost being the three-month interbank rate plus 4 per cent minus 3 per cent, which

Figure 3. Illustration of how a bank matches interest rate flows from customers to interest rate flows to investors



Source: The Riksbank

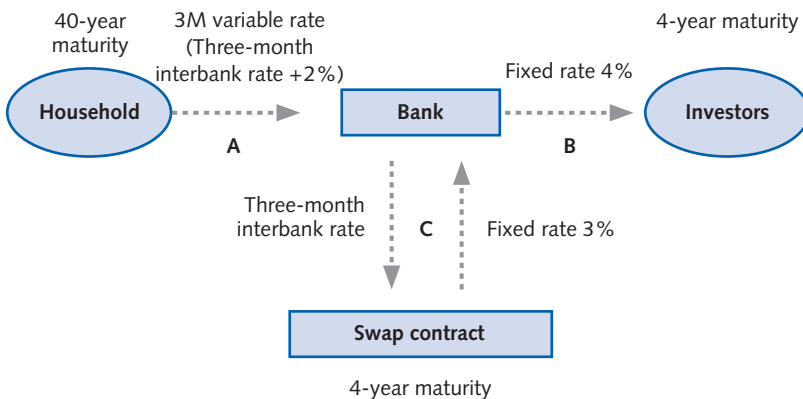
80 This means, in theory, that the loan shall be paid back after a longer time than at the end of the fixed-interest period. The maturity for the loan contract is not the same as the fixed-interest period. This refers to how long the interest rate is fixed for, if the household has chosen a fixed interest rate. In Sweden, the average length of time for fixed interest rates has been around 1.4 years since 2005.

corresponds to the three-month interbank rate plus 1 per cent. This is the bank's cost for funding a mortgage. The cost of one percentage point above the three-month interbank rate thus arises because the bank has secured its own funding for four years instead of only borrowing money for three months. As the bank receives a variable rate corresponding to the three-month interbank rate plus 2 per cent from the household, at the same time as it is borrowing at the three-month interbank rate plus 1 per cent, the bank's gross margin on the mortgage is 1 per cent.⁸¹

Swap contracts reduce exchange rate risk

The Swedish banks also finance mortgages in Swedish krona with foreign currency. This means that the bank, apart from protecting itself against interest-rate risk, must also protect itself against the exchange-rate risk that arises when the funding is in one currency and the asset (the mortgage) is in another. The bank normally does this by signing a contract (FX swap) in which the foreign currency is exchanged for Swedish krona over four years. In this way, the bank protects itself against any loss resulting from exchange rate risk.⁸²

Figure 4. Example of how the interest-rate flow from a mortgage with a three month interest rate is converted to a fixed rate via a swap contract



Source: The Riksbank

81 The gross margin constitutes the difference between the bank's lending rate and its funding cost.
 82 Read more about the foreign exchange market in Short-term funding in foreign currency by major Swedish banks and their use of the short-term currency swap market, *Economic Review* 2014:1, Sveriges Riksbank.

CREDIT MARKET COMPANIES

Other credit market companies include *finance companies* and corporate- and municipality-financing institutions. At year-end 2013, lending by these institutions comprised nine per cent of total lending by credit institutions. Just over 15 per cent of the total assets of SEK 870 billion is attributable to the finance companies linked to the four major banking groups (see Table 12). Outstanding loans to the public by other credit market companies amounted, at the end of 2013, to SEK 492 billion (see Chart 27). Of these loans, about 40 per cent were made to Swedish companies, while 14 per cent went to Swedish households, 27 per cent to the public abroad and 20 per cent to the Swedish public sector. There are 50 companies categorised as other credit market companies on the Swedish market, of which 37 are finance companies. The remaining companies are corporate- and municipality-financing institutions, monetary securities companies and monetary investment funds.

Prior to 1985, restrictions limited the scope of banks to lend money. By setting up finance companies, which were not subject to these restrictions, the banks were able to increase lending. Today, finance companies have typically specialised in one specific form of funding. They offer, for example, leasing⁸³ and factoring⁸⁴ services to corporate customers and promissory note loans and credit card accounts to households. For administrative reasons, they still operate as independent companies within the banking groups.

Finance companies are also owned by non-financial companies. In such cases, they provide complementary services to normal operations through the financing facilities they offer to the company's customers. For example, large car manufacturers often provide financing opportunities to purchasers.

Other finance companies have focused on granting loans to a particular sector. The largest of these institutions is Svensk Exportkredit (SEK), a mainly state-owned company. SEK is charged with the task of fostering growth in the Swedish export industry. In addition, Kommuninvest i Sverige AB was established by a number of municipalities and county councils. Its purpose is to arrange financing for its members that is as cost-efficient as possible. Similarly,

83 Leasing is a way for companies or private individuals to obtain funding for, for instance, a vehicle by hiring it over the longer term from a leasing company. In this way, it is not necessary to pay the entire purchase price in one go, but the vehicle can still be fully used.

84 Factoring can either refer to borrowing against an invoice or the sale of accounts receivable. An invoice borrowing agreement with a factoring company implies that a company receives credit against collateral consisting of its invoiced accounts receivable. A promissory note is the same as a debt instrument, i.e. a written promise to repay a debt. Loans against a promissory note are a common type of bank loan.

Landshypotek AB aims to provide its members (agricultural and forestry companies in Sweden) with funding on favourable terms. Finance companies mainly finance their operations mainly through loans from other financial institutions, in particular the banks. Some finance companies also obtain funding by issuing certificates, bonds and promissory notes in the securities market.

Private equity investment companies

The term private equity is often used to describe investments in unlisted companies with an active owner role. Such companies often entail higher risk, which means that banks do not normally invest in them. Instead, established companies that are not yet ready for listing on the stock exchange or other forms of public trading in their shares can acquire funding in the form of private equity. Smaller entrepreneurs wishing to develop their operations and avoid pledging private assets, such as their home, can also obtain private equity. This kind of funding has increasingly been channelled through a special type of intermediary, the private equity investment company. Private equity investments made in unlisted companies are referred to as *private equity*.⁸⁵

Private equity investment companies thus invest in unlisted companies in the form of equity. These investments are funded through risk capital funds owned by the private equity investment companies. The development of the companies in which the private equity investment company has invested, the 'portfolio companies', determines the return received by the private equity investment company.

These investments may basically be categorised as investments in early phases of a company's life cycle, known as *venture capital* investments, and investments in later phases of the company's life cycle, known as *buy-out* investments. Early phase investments usually entail high risk. This is because the investment is often made in newly-started companies with weak cash flows and few tangible assets. Private equity investment companies also differ from other financiers in that they frequently play an active owner role in the companies in which they invest.

In Sweden, the first private equity investment companies were established at the end of the 1980s. However, the sector has grown rapidly, especially in recent years. At the beginning of 2014, there were

⁸⁵ For a description of private equity investment companies in Sweden, refer, for example, to the box Private equity investment companies in Sweden, *Financial Stability Report, 2005:1*, Sveriges Riksbank.

136 private equity investment companies in Sweden, according to the Swedish Private Equity and Venture Capital Association (SVCA), which together administered around SEK 400 billion. The majority of these focus on the buy-out segment.⁸⁶

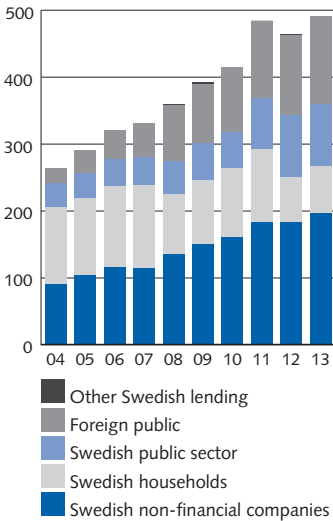
In Sweden, an amount equivalent to a half per cent of GDP is invested in private equity through private equity investment companies. A large part of the capital in Swedish equity funds is

Table 12. The ten largest institutions in the category other credit market companies, balance sheet totals at year-end 2013
SEK billion

Svensk Exportkredit AB	306
Kommuninvest i Sverige	285
Nordea Finans Sverige AB	49
Handelsbanken Finans	47
Swedbank Finans AB ¹	36
Volkswagen Finans Sverige AB	24
Wasa Kredit AB	14
Hoist Kredit AB	11
Entercard Sverige AB	10
Toyota Material Handling Europe Rental AB	7
Total, 10 largest	788
Total	870

1. Swedbank Finans includes the subsidiary ML Rental.
Note. Excluding the Swedish institutions' overseas operations conducted through branches abroad, and their foreign subsidiaries.
Source: The Riksbank

Chart 27. Other credit market companies' lending to the public
SEK billion



⁸⁶ According to the Swedish Private Equity and Venture Capital Association: www.svca.se.

from foreign investors. Institutional investors, such as fund-in-fund managers and pension funds, are among the categories of investor.

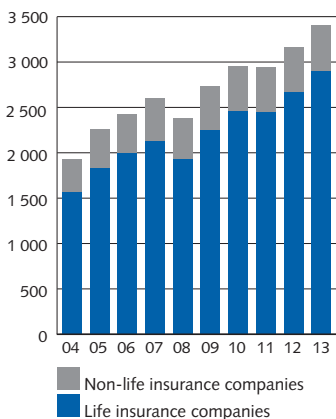
Insurance companies, fund management companies and pension funds

Financial intermediaries also include a number of middlemen whose activities are not primarily focused on the supply of capital. Examples of these are insurance companies, fund management companies and pension funds. While these serve different purposes in the financial system and the economy, they all have in common that they are important investors in the financial markets. As investors, they concentrate more on managing others' assets than their own.

INSURANCE COMPANIES

At year-end 2013, there were 288 Swedish *insurance companies* active in the domestic market. In addition, 41 foreign companies were operating through branches in Sweden. Most of the Swedish insurance companies are small, local companies, but the largest part of the market is concentrated to a few major companies. Taken together, the insurance companies had investment assets, that is to say assets invested to generate earnings, amounting to about SEK 3 408 billion at year-end 2013 (see Chart 28). Slightly less than 85 per cent of

Chart 28. Insurance companies' investment assets SEK billion



Source: Statistics Sweden

this amount was held by the ten largest insurance companies (see Table 13).⁸⁷

Insurance companies are divided into life insurance and non-life insurance companies. The life *insurance* companies' investment assets accounted for almost 85 per cent of the insurance companies' total investment assets (see Chart 28).

Life *insurance* and non-life *insurance* companies both offer insurance against risk, albeit totally different types of risk. These businesses may not be carried out in the same company, although it is common to have both types of business in the same corporate group.

Life insurance companies can pay out compensation when an insured person is unable to work, dies or reaches retirement age. The type of compensation provided by the insurance coverage depends on how the policies are formulated. The products need not be seen only as insurance, but can also be seen as a form of long-term saving in which the policyholder has a claim on the capital managed by the insurance company.

Life *insurance* can be divided up into traditional life *insurance* and unit-linked insurance. Traditional life insurance pays a guaranteed minimum return, while the yield from a unit-linked policy is determined by the performance of the individual funds. Saving in unit-linked insurance works essentially in the same way as saving in mutual funds (see the section on Fund management companies).

Non-life insurance companies compensate damage to property and pay third-party damages. Policyholders pay a premium to the

Table 13. The ten largest insurance companies' investment assets at year-end 2013, groups SEK billion

Alecta	605
Skandiakoncernen	460
AMF Pension	412
Folksam	367
SEB Trygg Liv	337
Länsförsäkringar	269
SPP Livförsäkring	158
Swedbank Försäkring	120
Handelsbanken Liv	93
If Skadeförsäkring	71
Total, 10 largest	2 893
Total, all	3 408

Source: Insurance Sweden

⁸⁷ The total investment assets indicated in Table 12 and in Chart 26 at the start of the chapter differ. This is because the figures in Table 12 do not include the AFA group, unlike the figures in Chart 26. The investment assets of the AFA group amounted to approximately SEK 217 billion at the end of 2012. According to Insurance Sweden.

companies in order to receive compensation for property damaged in an insurance event. Unlike life *insurance* non-life *insurance* policies are not a form of saving. The activities of these companies in the securities market only take place in order to manage the companies' own funds.

Wage earners can also take out group insurance policies, which are based on labour market agreements. These provide additional cover in the event of sickness, occupational injury or retirement.

Insurance companies in Sweden can take three corporate forms: dividend-paying limited liability companies, limited liability companies operated on mutual principles and entirely mutual companies Limited liability companies run on mutual principles and entirely mutual companies are known as non-dividend-paying companies.

This mutuality means that the policyholders bear the risk of deficits in the operations. On the other hand, any surplus in the operations will also accrue to the policyholders. Accordingly, the corporate form in which an insurance company conducts its business operations is of significance, for instance, for the allocation of yield.

The assets of a dividend-paying limited liability *insurance* company consist of investment assets, i.e. premiums invested in various securities. The liabilities consist primarily of what are known as technical provisions. The technical provisions must correspond to the amount needed by the company to meet all the commitments arising from the insurance contracts into which it has entered.⁸⁸ Equity consists of bonus funds, which are the insurance company's accumulated profits. In a dividend-paying limited liability insurance company, equity is owned by the shareholders. If the company does not fulfil its undertakings, the shareholders have the option to either contribute capital, or the let the company default. Policyholders in these companies do not take on any financial risk. On the other hand, financial risk is assumed by the policyholders in a limited liability company operated on mutual principles and in entirely mutual companies, where the policyholders themselves own the equity. All surpluses arising in mutual companies accrue to the policyholders. However, this also implies that the policyholders accept the risk that a deficit may arise, which can entail such results as the lowering of pension payments.

⁸⁸ The amount of these technical provisions is calculated using a number of variables, including expected return, life expectancy, estimates of future operating costs and premium income of contracts entered into, as well as the discount rate used to calculate the present value of the company's future commitments.

The investment assets of insurance companies comprise mainly equities and bonds. This means that the breakdown into equity and other assets varies depending on developments on the stock exchange. At year-end 2013, equities accounted for 54 per cent of investment assets. Holdings of bonds and short-term investments made up about 35 per cent and 4 per cent respectively of the investment assets. Investments in properties only accounted for a minor part (see Chart 29). Investment assets accounted for 30 per cent of investments abroad.

Insurance associations and pension foundations

In addition to insurance companies, insurance associations and pension foundations also provide insurance services. Compared to the insurance companies, these institutions represent only a small portion of the pension insurance market.

Insurance associations are associations that conduct insurance business on behalf of employees at one or more companies. Their activities are aimed at individuals in the same professional group or members of certain communities of interest. Most insurance associations only offer pension insurance, but a few also offer health insurance. At year-end 2013, a total of 75 insurance associations were operating, with total assets amounting to approximately SEK 125 billion.^{89, 90, 91}

Pension saving can also be conducted through pension foundations. An employer can choose to set up a pension foundation and transfer an amount to it each year, which is then paid out to the employees later on in the form of a pension. A pension foundation is a legal entity in itself. At year-end 2013, there were around 1 858 active pension foundations in Sweden, which, together, had about SEK 189 billion in assets.

89 The majority of insurance associations conduct their own asset management, while some outsource asset management. This means that some overlapping exists in the reporting of data, as these associations' assets are also included in investment assets of fund management companies.

90 The figures for the insurance associations' total assets refer to year-end 2011.

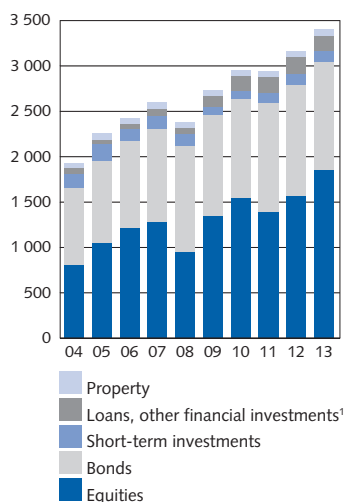
91 The Mutual Benefit Societies Act (1972:262) was repealed in connection with the introduction of the new act on insurance companies. The existing insurance associations may continue to conduct their operations in accordance with the 1972 act until the end of 2017. The associations must apply for a permit in accordance with the insurance companies act before the end of the transition period, or go into liquidation.

FUND MANAGEMENT COMPANIES

Fund management companies administer and manage capital in mutual funds. Generally, each fund management company can offer a large number of funds with a different investment focus. The Swedish fund management market is dominated by the bank-owned fund management companies. The four biggest fund management companies, owned by the largest banking groups, together account for 60 per cent of the fund market (see Table 14). In the case of these fund management companies, the banks' branches or Internet services act as distribution points.

Fund investment in Sweden totalled SEK 2 347 billion in managed capital at year-end 2013. The Swedish households' holdings of trade funds amounted to SEK 677 billion in 2013. The assets managed in equity funds amounted to SEK 1 319 billion at year-end 2013. Besides equity funds, other kinds of fund include fixed income funds, which invest in interest-bearing securities, and 'mixed funds', which invest in both equities and interest-bearing securities. The assets managed in fixed income funds and mixed funds amounted to SEK 514 billion and SEK 475 billion respectively for the same period. In addition to these types of funds, there are also hedge funds, which differ from other funds in that their management is relatively unrestricted regarding

**Chart 29. Insurance companies' investment assets, per type of financial asset
SEK billion**



1. Changed definition from and including the first quarter of 2009. The current definition includes lending, derivatives and repos.

Source: Statistics Sweden

both investment strategies and the financial instruments that may be used, such as derivatives. The assets managed in hedge funds totalled SEK 40 billion at year-end 2013 (see Table 15).

Fund management companies affiliated to insurance companies have markedly increased their equity of the fund market in recent years, due to the growing interest in choosing funds for pension saving. This, in turn, is partly a result of Sweden's pension reform in 2000, which saw the introduction of a premium pension system (PPM) (see the section on National Pension Funds). In the premium pension system, the amounts set aside for premium pensions are invested in mutual funds. For private forms of pension savings, there are also a number of fund-based options (see the section on Insurance companies). These forms of savings are basically the same product, the differences being the forms of ownership and taxation. Consequently, mutual funds today compete to some extent with the life insurance companies.

Table 14. The ten largest fund managers, assets under management, December 2013
SEK billion

Robur	585
SEB	306
Nordea	268
Handelsbanken	246
Seventh AP Fund	186
Länsförsäkringar	85
AMF Pension	85
SPP Fonder	83
Brummer & Partners	57
Skandia Fonder AB	41
Total, 10 largest	1 942
Total, all	2 347

Source: MoneyMate

Table 15. Mutual fund wealth, per type of fund
SEK billion

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Equity funds	514	733	868	895	543	863	1 160	933	1 054	1 319
Fixed-income funds	275	310	340	354	373	378	403	466	476	514
Mixed funds	158	202	238	247	204	254	297	308	387	475
Hedge funds	50	71	82	76	66	88	84	95	96	40
Total	997	1 316	1 528	1 572	1 185	1 583	1 944	1 802	2 013	2 347

Sources: MoneyMate and the Swedish Investment Fund Association

STATE-OWNED PENSION FUNDS

The Swedish public pension system is made up of two components: one collective and one individual. The collective element is often referred to as an income pension, and is a “pay-as-you-go” system whereby pensions are financed by current charges. The individual element consists of a premium reserve system in which pension disbursements are financed by money paid into funds during individuals’ working lives and where individuals themselves choose their fund management company. Of the guaranteed pension, equivalent to 18.5 per cent of the individual’s income, 16 per cent is managed under the pay-as-you-go system and 2.5 per cent under the premium reserve system.

The task of the national pension funds is primarily to manage the pension capital within the framework of the pay-as-you-go system. This task is carried out in the first place by the First, Second, Third, Fourth and Sixth AP Funds. The Seventh AP Fund manages the capital in a premium reserve system, in competition with private fund management companies.

The Seventh AP Fund includes the pension capital of those people who did not choose a particular fund management company for their premium reserve pension.

The First, Second, Third and Fourth AP Funds are bound by identical investment regulations, which state inter alia that pension capital may be invested in all capital market instruments that are listed and tradable.⁹² One restriction is that at least 30 per cent of the funds’ assets must may be exposed to foreign exchange risk. The Sixth AP Fund has the most flexible investment rules with regard to choice of instrument, but it may not invest abroad. The Seventh AP Fund may also invest in instruments other than equities and debt securities and, like the first four AP funds, is also allowed to invest abroad.

At year-end 2013, the investment assets of the AP funds totalled about SEK 1 271 billion. This can be compared with life *insurance* companies and the fund management companies, whose investment assets amounted to SEK 2 900 billion and SEK 2 347 billion respectively in December 2013.

⁹² Up to five per cent of the assets may be invested in unlisted securities. However, these investments must take place indirectly through mutual funds or private equity investment companies.

Securities institutions

Securities institutions is the term used to refer collectively to the securities companies and Swedish credit institutions that are licensed by Finansinspektionen to engage in securities trading. The term also covers foreign companies that engage in securities trading through a branch in Sweden. Finansinspektionen can license eight different kinds of investment activities (see the box Central regulations in the financial sector).

Securities institutions have two primary functions. These are to trade with securities in their own name on behalf of customers, i.e. commission trading, and to buy and sell securities on their own behalf in their capacity of market maker.⁹³ Being a market maker involves quoting two-way prices (i.e. bid and ask prices). All market makers must therefore be prepared at all times to buy and sell securities. To do this, the institutions need to hold a stock of securities, and thereby take on some of the market risk. By bringing together purchasers and sellers of securities and acting as market makers, they help create the conditions for a liquid and efficient market in securities.

Another important role played by the securities companies is in underwriting and assisting in other ways in connection with the issue of securities. By doing so, they make an important contribution in reducing the information gap between issuers and investors. Securities companies are also able to provide credit to customers purchasing securities and administrative services. They also accept deposits, to a limited extent.

At year-end 2013, 193 Swedish companies had one or more of the above-mentioned licences to engage in securities trading. Just over 60 per cent of these companies were securities companies, while the others were mainly credit institutions such as banking companies and savings banks.

SECURITIES COMPANIES

One type of securities institution is a securities company. Frequently, many securities companies are specialised in one or a small number of activities and therefore only need licenses for those. This group includes, for example, a large number of smaller asset management companies, as well as companies with other specialisations. Among the securities companies, there are also a number of power and commodity dealers.

⁹³ The role of market-makers is described in more detail in the chapter The financial markets.

As many securities companies concentrate on arranging contracts between potential buyers and sellers, their balance sheets are often relatively modest. At year-end 2013, the total assets of the securities companies amounted to about SEK 12 billion.

SWEDISH CREDIT INSTITUTIONS THAT ENGAGE IN SECURITIES TRADING

In addition to investment companies, many banks engage in securities trading on a major scale. Of the total of 39 banking companies registered in Sweden at year-end 2013, 26 were licensed for securities trading. The four major banks are represented among the companies holding the most licenses.

Among the banking companies conducting securities trading, there also exists a group of companies operating basically only in securities trading, but which have, for various reasons, applied for and been granted banking licences, mainly to avoid restrictions and competitive disadvantages vis-à-vis the banks. Furthermore, the Swedish securities companies may, subject to certain restrictions, accept deposits in order to facilitate their securities trading business.

Besides the securities companies and banking companies referred to above, 47 savings banks had one or more securities trading licences at year-end 2013. Usually, these involved a license to act as an agent in securities transactions, i.e. to accept customers' orders locally and submit them to an affiliated bank holding more licenses.

Central regulations in the financial sector

The financial companies provide services that are of great importance to society and the companies' customers. Consequently, there are many rules they must follow. These rules may exist in laws passed by the Riksdag, regulations decided by the government or statutes issued by Finansinspektionen. However, the content of the regulations is largely determined by decisions taken at EU level.

Regulations and directives are among the legal acts the EU can decide on. An EU Regulation is binding and directly applicable in Sweden. It thus applies without being converted to a Swedish statute. However, unlike regulations, directives must be converted to Swedish statutes, such as laws. This is something that Sweden is obliged to do due to its membership of the EU. In addition, the European supervisory authorities have comprehensive regulatory powers.

Banks and credit market companies

Banks that conduct banking operations and credit market companies that conduct financing operations are subject to the regulations in the **Banking and Financing Business Act**.

This act describes the requirements that banks and credit market companies⁹⁴ must meet. This includes provisions regarding how they should be organised, how they should conduct their operations and what demands are made of their owners and management.

This act also states what banking and financing business entails, and that banks and credit market companies need a licence from Finansinspektionen before they can begin conducting such operations.

A banking business is an operation that combines the mediation of payments through general payment systems with receiving money (for instance, deposits in accounts) to be repaid within a maximum of 30

94 Banks and credit market companies are both what are known as credit institutions.

days of the customer's request. A financing business also combines two operations: 1) receiving funds from the general public and 2) offering credit, guaranteeing credit, buying claims (for instance, invoices) or the financial leasing of personal property (such as cars).

In addition to conducting banking or financing business, banks or credit market companies may also conduct other financial activities.

A bank can be either a limited liability bank, a savings bank or a co-operative bank. A credit market company can be a limited liability company or an economic association. Banks and credit market companies are subject to supervision by Finansinspektionen.

The Basel III framework has been implemented in the EU through the Capital Requirements Directive (CRD IV) and Regulation (CRR). CRR, which is directly applicable to all member states, is a shared rulebook for capital adequacy. CRD IV, on the other hand, has required national implementation. All in all, the two frameworks have led to changes in the Banking and Financing Business Act and

to the passing of new laws such as the Supervision of Credit and Investment Institutions Act and the Capital Buffers Act. This last act includes provisions requiring credit institutions and investment firms to maintain capital buffers beyond the capital requirements otherwise applicable to the operations.

These new laws also include limits on the number of seats a member of a board of directors may hold at the same time, as well as new rules on variable remuneration for executive management and other managers. In addition, credit institutions, securities companies and Finansinspektionen are to introduce appropriate systems for the management of reported suspected regulatory infringements at these institutions (so-called whistleblowing systems). The institution in question and Finansinspektionen are to afford people who choose to report suspected irregularities absolute secrecy protection with regard to information that may reveal their identity.

Another important act is the **Act on Measures against Money Laundering and Terrorist Financing**.

This act aims to prevent financial operations from being used to conceal the connection between property and criminal activities or the funding of terrorism.

Examples of other laws governing banks and credit market companies are the **Consumer Credit Act** and the **Act on the Deposits Guarantee Scheme**. The Consumer Credit Act includes provisions on cancellation rights for credit agreements, good lending practices, credit assessment, information to consumers and repayment of debts in advance, among others. The Act on the Deposits Guarantee Scheme aims to guarantee funds in accounts of up to EUR 100,000 per customer and institution. However, any such amounts are paid in Swedish kronor. All types of accounts with banks and credit market companies (and securities institutions that are licensed to receive customers' funds in accounts, see below) are covered by the guarantee.

The **Payment Services Act** and the **Act on Unauthorised Transactions with Payment Investements** cover accounts, services and products used to

make payments. Among its other purposes, the Payment Services Act aims to ensure that there are clear and consumer-friendly rules for payments. Among other provisions, the law forbids traders from charging fees for card payments. In addition, the length of time it takes to execute a payment has been regulated, normally to one to two banking days, depending on the type of transaction in question. The law also regulates the information that the banks and other payment service providers are to provide their customers.

The Act on Unauthorised Transactions with Payment Instruments clarifies account holders' responsibilities in the use of payment instruments by unauthorised parties. In this case, a payment instrument could be a debit card, a PIN code or a security authenticator for online banking. Among other areas, the law regulates how losses are to be allocated in the event that a card falls into the wrong hands.

The **Government Support to Credit Institutions Act**, also known as the Support Act, was passed to manage the financial crisis that culminated in 2008. The Support Act gives the

Swedish state the possibility to support banks and credit market companies if deemed necessary to prevent them suffering financial problems that might pose a threat to the stability of the financial system. For example, in such a situation, the state can provide guarantees, grant capital injections or, as a last resort, take over ownership of a credit institution through the compulsory redemption of the companies' shares. On the basis of the Support Act, a programme for borrowing with a government guarantee has been introduced, as has a capital injection programme.

Companies with obligation to notify

The **Obligation to Notify Certain Financial Operations Act** stipulates that companies that conduct certain financial operations without being licensed under the Banking and Financing Business Act are obliged to notify Finansinspektionen.

Deposit companies

Under the **Deposits Business Act**, other limited companies and economic associations

besides the credit and securities instructions can accept money (for example, deposits) from the public that is to be repaid within one year after a request from the customer. They must first register with Finansinspektionen. These companies, known as deposit companies, may accept at most SEK 50 000 per consumer, but there is no corresponding limit to the amount of money that may be received by other customers such as companies. Deposit companies are not subject to supervision but are to be inspected by Finansinspektionen once a year. These companies are also covered by the Act on Measures against Money Laundering and Terrorist Financing. However, the money received by deposit companies is not covered by the deposit guarantee or investment protection⁹⁵.

Payday loan companies

The **Act on certain consumer credit operations**, which regulates operations conducted by payday loan companies, for example, entered into force on 1 July 2014. This requires companies to conduct their

⁹⁵ As regards investor compensation, see the summary of the Investor Compensation Act at the end of this chapter.

operations in a healthy manner and for major owners and management of the companies to be suitable. Conducting such operations requires a permit from Finansinspektionen which shall control the companies' compliance with the applicable regulations in its supervision.

Insurance businesses

Private insurance operations are regulated in two fundamental legislative blocks: the **Insurance Business Act and the Insurance Contracts Act**. The Insurance Business Act contains rules on the establishment of insurance companies in Sweden, their operations and supervision. The rules distinguish between life *insurance* and non-life *insurance* operations, activities that, in principle, must be conducted in separate companies.⁹⁶ In addition, a distinction is made between insurance companies offering direct insurance and reinsurance companies. Reinsurance companies may not conduct any other business activities than reinsurance operations. However, there is nothing to prevent life

insurance and non-life *insurance* companies from conducting reinsurance operations. Among other measures, policyholders are protected by the requirement that companies have a certain capital buffer beyond the commitments held by that company.

The Insurance Contracts Act regulates the legal relationship between the insurer and the policyholder – as well as other beneficiaries. The Act applies to non-life *insurance*, life *insurance*, accident insurance, health insurance and consumer insurance.

The Insurance Broking Act applies to the actual distribution of insurance products. It regulates how these operations are licensed, stipulates a central register of brokers and lays down certain requirements with which the brokers must comply.

Financial markets

The Swedish Securities Market Act covers several businesses that are important to a well-functioning securities market, namely securities business,

⁹⁶ Life insurance and non-life insurance operations may only be combined to a very limited extent. For example, a life insurance company may only conduct certain non-life insurance operations (health and accident insurance). These operations shall otherwise be conducted in separate companies.

stock market operations and similar, as well as clearing and settlement. The principal rule is that a licence is required for companies wishing to conduct any of these operations and that these companies will then come under the supervision of Finansinspektionen.

Securities business involves, for instance, the purchase or sale of financial instruments (such as equities) on behalf of customers, financial advice, discretionary portfolio management⁹⁷ and investment advice regarding financial instruments. The companies that are allowed to conduct securities business are called securities institutions.

The Swedish Securities Market Act contains regulations on how the securities institutions should organise and conduct their operations and what demands are made of their owners and management. The act also includes rules of conduct that are aimed at protecting consumers. Like the credit institutions, the Swedish securities institutions are governed by the Act on Measures against Money Laundering and Terrorist Financing.

For regulated markets (stock exchanges) and similar marketplaces, the Securities Market Act includes, among its provisions, the demands made of the companies' operations. It also describes which requirements must be met before a financial instrument can be traded on a regulated market, as well as the rules regarding entry onto regulated markets. Moreover, there are provisions regarding the demands made on the stock market owners and management.

According to the Act, a clearing organisation that engages in clearing activities (that is, clearing or settlement) must comply with certain operational requirements. Requirements are placed both on the party providing the clearing and on any party participating in the clearing. In addition, there are provisions regarding the demands made on a clearing organisation's owners and management.

For parties providing clearing services as central counterparty, regulations on licensing and supervision can be found in the **Regulation on OTC derivatives, central counterparties and**

⁹⁷ Discretionary portfolio management is a financial service provided by banks and others, whereby the investor gives the manager a mandate to take ongoing investment decisions, often within certain agreed limits.

trade repositories (EMIR).

This regulation includes rules on how a central counterparty is to organise and conduct its operations, which demands are to be placed on its owners and the amount of buffer capital that is to be present. In addition, there are provisions specifying whether OTC contracts are to be cleared via a central counterparty and covering the reporting of derivative contracts to a trade repository.

Another act that has particular importance for securities trading is the **Financial Instruments Accounts Act**. The accounts show, for instance, who owns the equity and other financial instruments. This Act includes provisions covering, for instance, the measures to be adopted after the clearing and settlement of a securities transaction, namely the recording, in the new owner's securities account, of the securities to have changed owner.

Securities trading is also regulated in the **Financial Instruments Trading Act** and the **Market Abuse (Financial Instruments Trading) Penal Act**. Among its provisions, the Financial Instruments Trading Act

describes the conditions under which there arises the obligation to prepare a prospectus in the sale of financial instruments and to notify holdings of equities.

The Market Abuse (Financial Instruments Trading) Penal Act includes penal provisions for the trading of financial instruments by parties having access to information that is not public and which influences the price of the instrument (insider trading), and for actions influencing the price of a financial instrument traded on the securities market (market manipulation).

The Financial Advice to Consumers Act ensures consumer protection in the event of investment advice, i.e. advice relating to investment in financial instruments.

The Investor Protection Act contains rules which provide some financial protection to investors who have lost securities if the securities institution, fund company or management company managing them becomes bankrupt. Investment cover amounts to SEK 250,000 per customer and institution.

The Mutual Funds Act and the Alternative Investment Funds Act contain provisions on

fund operations. A Swedish fund is a collection of securities, for example equities and bonds. The fund's assets are owned by those who have deposited money in the fund. The funds are administered by a fund management company. The fund management company, which requires a permit for its operations, selects the securities in which the fund is to invest.

However, the assets of a fund, as well as incoming and outgoing payments relating to the fund, are administered by a depository.

This also implements the decisions taken by the fund management company and, at the same time, ensures that these comply with the law or fund rules. The depository must be a bank or other credit institution. The fund management company and the depository operate independently of each other.

Recommendations and general guidelines

There are also a large number of recommendations, general guidelines and other non-binding legal acts regarding various issues significant to the

financial market's players. Even if these recommendations are not binding, financial market parties are expected to comply with them. The purpose of these non-binding legal acts is often to complement laws and regulations with detailed regulation or to provide various players with information on how a certain supervisory authority interprets legislation.

Recommendations and general guidelines for the financial market's participants are issued by Finansinspektionen, the Riksbank, the EU and its supervisory authorities, and international organisations.

New regulations

In the wake of the financial crisis that culminated in 2008, comprehensive work has been initiated to reform the international framework for financial supervision and regulation. This means that major changes will take place to regulations in the years ahead. In turn, these changes will have major effects on both financial companies and supervisory authorities.

■ The financial infrastructure

An effective financial infrastructure is an important precondition for financial stability. The financial infrastructure consists of different systems and of routines for how to use them. The Riksbank defines the financial infrastructure as the systems which handle financial positions and/or enable financial flows between various participants, their legal frameworks and procedures and the participants' use of these systems. This chapter begins with a general description of how a payment is made. We then describe in more detail transactions regarding trading in financial instruments and foreign-exchange trading.

We also explain what retail payments are and how payment instruments are used. The chapter concludes with a description of the most important systems in the Swedish financial infrastructure and an illustration of payment flows in Sweden.

Different types of payment

There are several different kinds of payment. These include simple payments, for example those made in cash, and more complicated payments, for example card payments where one or more intermediaries are required to make the payments. Three different types of payment and the demands they impose on the financial infrastructure are described below.

SIMPLE PAYMENTS

A *simple payment* involves, for example, the buyer paying the seller with banknotes or coins. No intermediary is required for such a payment and there is no time lag between the initiation and completion of the payment. Figure 5 provides an example of a simple payment.

PAYMENT USING AN INTERMEDIARY

The major difference between a simple payment and a *payment using an intermediary* is that the latter requires an underlying and supporting structure. More parties are thus required than those directly involved in the transaction.

An example of a payment using an intermediary is an account transfer between two individuals with accounts at the same bank where the payer initiates the payment by instructing the bank to transfer the money. The bank then transfers the money from the payer's account to the recipient's account and informs the recipient that his/her account has been credited. When the transfer is executed the payment is settled and thus completed.

Figure 6 illustrates the transaction between A and B when A and B have accounts with the same bank. The bank receives information on the transaction, debits A's account and credits B's account by the same amount.

PAYMENT USING SEVERAL INTERMEDIARIES

The picture becomes more complicated if A and B have accounts with different banks. It is then necessary to have more systems and a more developed financial infrastructure to be able to transfer information on the transaction between the parties concerned. Such an infrastructure covers not only systems but also all the routines and regulations required to manage an account-based payment from beginning to end. Consequently, there is usually a time lag between the initiation and

Figure 5. Example of a simple payment

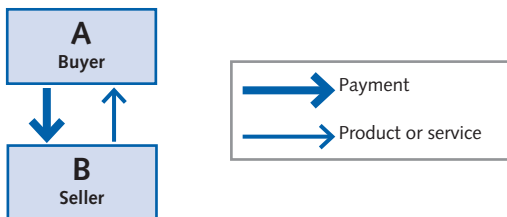
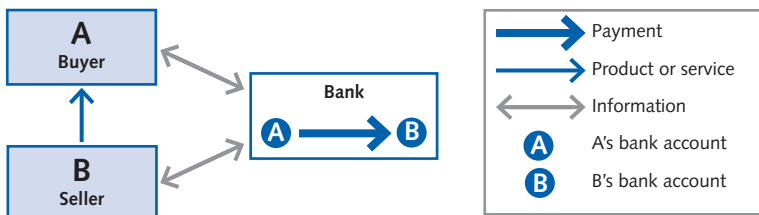


Figure 6. Example of a payment using an intermediary



the completion of the payment.⁹⁸ The financial infrastructure that is required for this type of payment is illustrated in Figure 7.

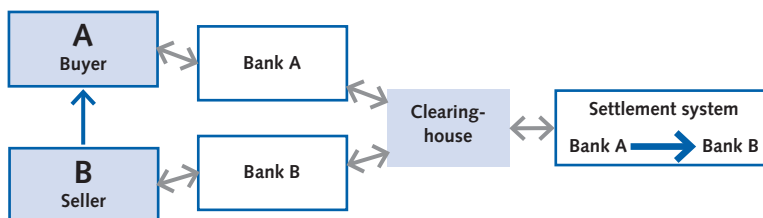
A and B may, for example, be private individuals, companies or authorities. A buys a product or service from B, and pays for it by making some type of payment to B.

The processes used for this type of payment can generally be summarised in three stages. In the first step, the payment is verified and authorised. This often takes place in connection with the actual payment and involves verifying the identities of the parties. The balance in the account of the payer is also checked in this step. If the verification shows that there are sufficient funds the payment can be approved, i.e. authorised.

The second step entails clearing the transaction. This involves compiling instructions and information about the transfer. The transaction is cleared by a clearing organisation. In the example shown in Figure 7, clearing involves a compilation of the transactions between two parties, A's and B's banks, and is therefore referred to as bilateral clearing. If more accounts and payment intermediaries are involved the compilation of transactions can be conducted for all the counterparties at the same time, so-called multilateral clearing.

Clearing orders can be calculated as either gross amounts or net amounts. A's bank may, for instance, need to pay B's bank SEK 100, while B's bank has to pay A's bank SEK 50. If the clearing order is calculated in gross amounts, that is in terms of the total sums, then this means that A's bank pays SEK 100 and B's bank pays SEK 50. Alternatively, the clearing organisation can use bilateral netting. This consists of two parties offsetting their debts and claims against one another. The effect is to reduce the parties' risk exposures to each other and thus their liquidity requirements. If the clearing positions

Figure 7. Example of a payment using several intermediaries



⁹⁸ Recently, however, some institutions have begun to offer what are known as real-time payments where the time lag shrinks to a few seconds. One example of this is the banks' new payment service Swish.

are compiled, then A's bank will pay SEK 50 to B's bank. Multilateral netting involves all the participants' debts and claims being offset against one another. Each participant then will have a single amount due from or payable to the other participants.⁹⁹ In some cases, clearing can instead be conducted through a central counterparty.

In the third and final step, the payment is settled. This means that the actual transfer is made from the payer's account to the recipient's account. Prior to settlement, it is checked that there are liquid funds in the accounts that the banks themselves hold for this purpose in a settlement system. The payment leads to the sender bank's account being debited and the recipient bank's account being credited with the amount transferred. The sending bank debits and the receiving bank credits the customers' accounts.

This settlement process is normally conducted using the accounts that the banks and some other financial companies, for example the clearing organisations, have with the relevant national central bank. Settlement thus takes place using central bank money in the accounts in a settlement system that can be likened to a bank for the banks. Read more about the Swedish settlement system in the section on RIX and on the settlement system Payments in real time in the section on Bankgirot.

When the three steps of verification/authorisation, clearing and settlement have been carried out, the payment is complete – it is usually said that the payment is final and irrevocable after settlement.

Transactions when trading in financial instruments

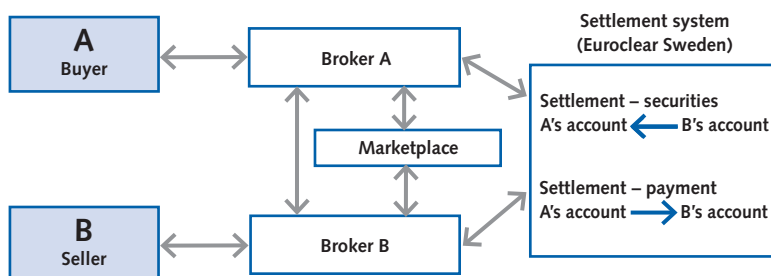
Financial instruments include securities such as equities, bonds and derivatives. In a transaction involving equities or bonds, the steps are largely the same as those in the example of a payment using more than one intermediary. This means that a similar infrastructure is also needed. The difference between a payment using several intermediaries and a transaction in financial instruments is that securities trading entails two flows. Apart from the transfer of the payment for the securities from the buyer to the seller (the payment process), there is also a transfer of the securities themselves from the seller to the buyer (the securities process). Securities trading is outlined in Figure 8.

⁹⁹ If it is instead assumed that there are three participants, where A is to pay SEK 100 to B and SEK 120 to C, where B is to pay SEK 50 to A and SEK 20 to C, and where C is to pay SEK 150 to B, the net positions that arise are as follows for A: SEK -170; for B: SEK +180; and for C: SEK -10. The payment flows can then be simplified so that A pays SEK 170 to B and C pays SEK 10 to B.

A securities transaction consists of three steps. The first step is the actual moment of trade, when A and B – through a broker – place their buy and sell orders in the marketplace. A broker can also find a counterparty outside the marketplace, or itself act as a counterparty, and such transactions are then referred to as over-the-counter (OTC) transactions.¹⁰⁰ As large sums are handled in securities trading, the security aspect is particularly important. A mistake in this type of transaction could have serious financial consequences for the parties concerned. In the second step, the transaction is sent to the settlement system.¹⁰¹ This is where matching takes place, which is to say a check is made that the parties' records of the securities transaction correspond. The instructions for the transfers are then compiled. In the third and final step, the transaction is completed with the settlement of the trade, which entails the simultaneous execution of the transfers in the payment process and the securities process. Settling the payment process and the securities process at the same time is referred to as Delivery versus Payment (DvP) and is a way of eliminating the counterparty risk in a securities transaction. This eliminates the risk of a party paying for something that he or she does not receive, which could be the case if the two transactions were conducted at different times.

There are a number of important differences between transactions involving derivatives and transactions involving equities or bonds. A derivative transaction entails the parties entering into a contract where the value is dependent on changes in the value of an underlying instrument.¹⁰² Such a transaction does not thus necessarily involve, but may involve, a transfer of title to the underlying instrument, as

Figure 8. Example of a financial instrument transaction



100 Over the Counter is a collective term for the transactions conducted outside a central marketplace (for example an exchange).

101 This is assuming that the transaction is conducted without using a central counterparty.

102 The underlying instrument may be a security, a certain currency or a commodity.

is always the case in connection with an equity or bond transaction. Moreover, in a derivatives transaction the investor is exposed to a counterparty risk for a longer period of time than in an equity or bond transaction. The contract may be valid for several months, or even for years, and throughout this period the value of the claim on the counterparty may change. This increases the risk that the counterparty will be unable to pay as planned. This risk remains until the derivatives contract matures. Only then is the transaction settled.

The clearing and settlement of financial instruments sometimes involves a *central counterparty* (CCP)¹⁰³. A central counterparty is said to improve the security of settlement by acting as a buyer to all the sellers and as a seller to all the buyers in securities transactions. Both the buying and the selling parties thus have the central counterparty as their counterparty. Counterparty risk between several counterparties is thus replaced by counterparty risk against one, the central counterparty. Figure 9 and Figure 10 illustrate the difference between

Figure 9. Exchange of funds in securities transactions without a central counterparty¹⁰⁵

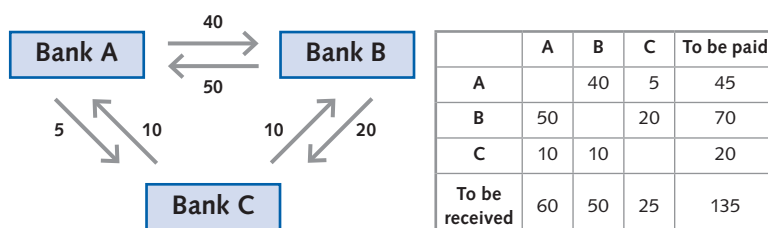
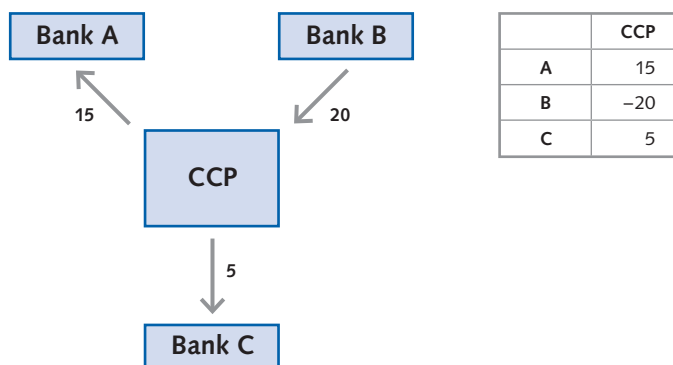


Figure 10. Exchange of funds in securities transactions with a central counterparty



¹⁰³ Central Counterparty.

¹⁰⁴ An exchange of securities is handled in the same way.

not using and using a central counterparty, as regards both the size of the payment and the number of payments.

If the transactions are cleared and settled without using a central counterparty, as in Figure 9, each of the three participants will have to make and receive two payments. In total, this will involve six transactions and an exchange of funds amounting to SEK 135. If the transactions are instead cleared and settled through a central counterparty, as in Figure 10, the number of settlement transactions falls to three, which also reduces the exchange of funds between the participants. The participants' net positions with the central counterparty is the difference between what each participant would have paid in total and what they would have received from the other participants if clearing and settlement had been conducted without a central counterparty. This is shown in the table in Figure 10 and is the difference per participant between the final column and the final row in the table in Figure 9. The exchange of funds is thereby reduced to SEK 40. However, the comparison in the example requires that all transactions in Figure 9 can be managed by the central counterparty in Figure 10. If this is not the case, it is not certain that the exchange of funds and the net positions can be reduced.

The OTC derivative reform – safer risk management and increased transparency

In recent years, the OTC derivative market has been subject to wide and comprehensive calls for reform. These have arisen from the deficiencies in transparency and risk management identified on the market for OTC derivatives¹⁰⁵ in conjunction with the financial crisis of 2008. The OTC derivative market is a very large market and these deficiencies thus created major risks to the global financial system. The G20 leaders¹⁰⁶ therefore agreed to reform the OTC derivative market. This agreement consisted of five parts, which have been implemented in legislation across the world:

- reporting to trade repositories
- trade of standardised OTC derivatives on marketplaces
- central counterparty clearing of standardised OTC derivatives
- safeguards for bilaterally-cleared OTC derivatives
- capital requirements for exposures in bilaterally-cleared OTC derivatives

In Europe, the agreement has been implemented in legislation through EMIR – the European Market Infrastructure Regulation on OTC derivatives, central counterparties and trade repositories.¹⁰⁷

Reporting to trade repositories

All trade in OTC derivatives must be reported to trade repositories. Such reporting increases transparency by gathering the information on OTC derivatives into central trade repositories. The aim of this is to give the authorities an idea of the risks on the OTC derivative market.

Trade on marketplaces

Trade on organised marketplaces contributes to increased transparency as these have clear and transparent rules for trading and, in addition, information is collected there on volumes and prices, for example. Furthermore, trade on marketplaces helps reduce market abuse. However, not all OTC derivatives contracts are suitable for trading on

¹⁰⁵ OTC stands for over the counter and means that the instruments are not traded on a regulated/organised marketplace.

¹⁰⁶ The Group of Twenty (G20) is a group consisting of nineteen larger economies and the European Union. Several countries in Europe, including Sweden, are not included in the G20 but participate indirectly through their membership in the EU. The leaders of these countries meet regularly to discuss current economic and political issues.

¹⁰⁷ More information on this is available in the box Central regulations in the financial sector).

marketplaces, for instance, if the contracts are too individually-adapted and turnover is thus very low.

Central counterparty clearing

To improve risk management and, in particular, counterparty risks¹⁰⁸, there is a requirement that OTC derivative transactions be cleared by central counterparties. A central counterparty is a participant in the financial infrastructure that acts as an intermediary between buyers and sellers in a securities transaction. In central counterparty clearing, the original contract between the buyer and the seller is replaced by two new contracts with the central counterparty. This means that the original counterparties in the transaction no longer have any direct relationship to one another, but instead to the central counterparty.

It is important that a central counterparty manages its risks safely. The main risk for a central counterparty is that one or more of its counterparties (participants) will go bankrupt. This could mean that the central counterparty suffers losses as a result of negative exposures

to this counterparty. A central counterparty therefore must have access to predetermined financial resources to be able to manage such losses.

Safeguards for bilaterally-cleared OTC derivatives

Not all OTC derivatives are suitable for clearance through a central counterparty; the risks in these OTC derivative contracts must therefore be managed in a different way. In such cases, parties trading OTC derivatives must instead pledge collateral to each other. This collateral will be claimed if losses arise due to the other counterparty failing to fulfil its commitments.

Capital requirements for banks in bilaterally-cleared OTC derivatives

Although the banks' risk management of OTC derivatives improves through these new requirements, the banks are nevertheless not completely protected if their counterparties experience serious problems. To further strengthen the banks' resilience, they are therefore required to hold capital to cover exposures in bilaterally-cleared OTC derivatives.

¹⁰⁸ Counterparty risk is the risk that a counterparty will default/go bankrupt before the transaction has been settled.

Transactions in foreign-exchange trading

The infrastructure for foreign exchange trading is essentially similar to that for trading in financial instruments. Here too, there are two flows that have to be cleared and settled. The difference is that two payments are exchanged for one another, one in each currency.

The settlement of foreign exchange transactions can give rise to substantial risks. If the banks trading with one another are in different time zones, there is a risk that one party in a foreign exchange transaction will pay in the sold currency without receiving the bought currency. This entails full counterparty risk. However, there are systems in the infrastructure that manage this and that can eliminate counterparty risk by settling both currencies at the same time. CLS, Continuous Linked Settlement, is one such system and is presented in more detail later on in the chapter.

Foreign exchange payments that are not settled using a special infrastructure require mediation by banks in other countries. Such mediation is common when foreign exchange transactions derive from ordinary payments and not from trading in financial instruments, for instance. If, for example, a foreign bank wants to make payments in Swedish kronor on its own behalf or on behalf of a customer, it opens an account with a Swedish bank. The Swedish bank then becomes what is known as a correspondent bank. The foreign bank sends a payment instruction to the Swedish correspondent bank with information regarding the amount and final recipient. The Swedish bank in turn withdraws the specified amount in kronor from the foreign bank's account. If the recipient of the payment has an account in the same bank as the foreign bank, the amount is credited directly to this account. The payment is thereby settled. If the recipient of the payment has an account with another Swedish bank, the payment must first pass through the Swedish financial infrastructure before it reaches the recipient.

Retail payments

Retail payments are payments of relatively small amounts that are made in large numbers, primarily between households, companies and authorities.¹⁰⁹ Retail payments is thus a collective term for payments between non-banks. Examples of such payments include card payments, cash payments, credit transfers and direct debits.

¹⁰⁹ For more information on retail payments in Sweden, see the Riksbank study *The Swedish retail payment market, 2013*, Sveriges Riksbank.

Cards and cash are primarily used for payments at a point of sale, while credit transfers and direct debits are primarily used for remote payments. As described earlier in this chapter, all payments not made with cash involve the participation of a third party that helps, in some way, to mediate the payment between the sender and the recipient. Third parties are, in turn, dependent on the financial infrastructure for ensuring payments can be made.

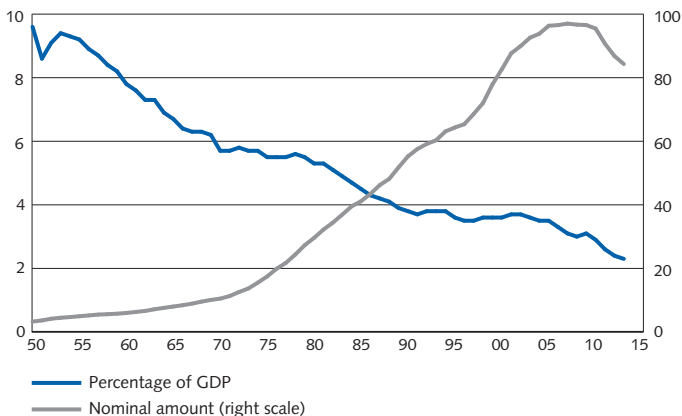
Retail payments are made in a variety of different situations, for many different reasons, and can vary greatly. A description of various types of payment methods on the Swedish retail market is given below.

CASH

Swedish banknotes and coins are a claim on the Riksbank resembling a promissory note. This means that an economic value is represented by the banknote or coin. For example, if a banknote is destroyed, the holder's claim on the Riksbank will also cease to exist. The fact that this value is inherent in the cash means that the debt between the buyer and the seller is directly settled when the banknotes and coins are handed over.

In an interview survey conducted by the Riksbank in 2012, 93 per cent of respondents stated that they had used cash in the last month. As there are no overall statistics on the number of cash payments made in the economy, an estimate must be made to determine the extent to which cash is used. One way of doing this is to relate the value of cash in circulation to gross domestic product (GDP).

Chart 30. Value of banknotes and coins in circulation
(annual average, banks' holdings excluded)
Percentage as a proportion of GDP and SEK billion



Sources: Statistics Sweden and the Riksbank

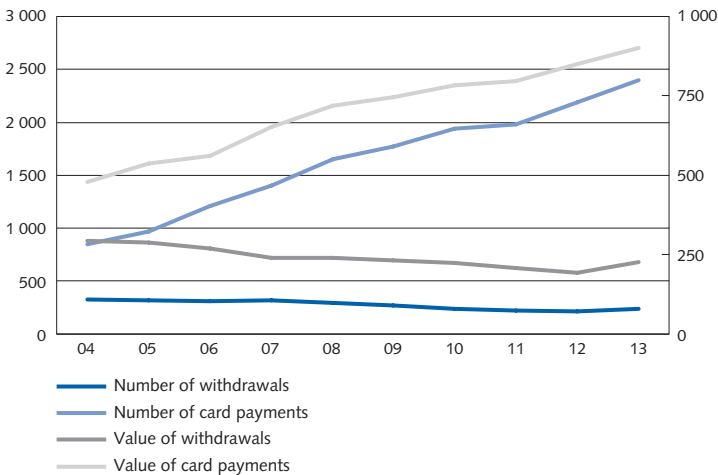
Measured as a percentage of GDP, cash steadily decreased from almost 10 per cent in 1950 to 2.3 per cent in 2013. However, the value of banknotes and coins in circulation increased every year from 1950 to 2007, when the trend seems to have changed. After this, the value decreased every year (see Chart 30).

Another way of indirectly measuring cash use is to examine cash withdrawals. Households mainly use ATMs to gain access to cash. The number of ATM withdrawals and the total value of withdrawals increased until the start of the current century but has decreased over the last ten years (see Chart 31). Between 2004 and 2013, the total withdrawal value fell by just under 23 per cent. There are no reliable statistics for over-the-counter withdrawals at bank branches, but households are estimated to have withdrawn almost SEK 30 billion in 2009, balanced by an almost equally great amount in over-the-counter deposits. Statistics for cash withdrawals in conjunction with card payments in shops (cash back) are also lacking. However, the Riksbank's interview survey indicates that about SEK 20 billion was withdrawn in this way in 2012, although not enough to compensate for the reduced withdrawals from ATMs. The overall view suggests that the use of cash has decreased.

CARD PAYMENTS

Cards are primarily used when buyer and seller meet directly, in what are known as point-of-sale (POS) payments. Payment is initiated

Chart 31. Number of transactions and total value, withdrawals and card payments.
 Left scale: millions of transactions. Right scale: SEK billion.



Source: The Riksbank

electronically at the merchant's card terminal. Cards are also used increasingly frequently for remote payments for the purchase of goods and services on the internet. In addition, cards are used for cash withdrawals from ATMs and from tills in shops.

The cards issued by banks in Sweden are debit cards, charge cards and credit cards and are almost always tied to an international card system, usually Visa or Master Card. Non-financial undertakings also issue various types of card. These are usually companies within the consumer goods trade or petrol companies. It also happens that the same card is supplied with both a debit card function and a charge card function or some other combination of the three basic functions.

A *debit card* is issued by a bank and linked to an account. The amount of the transaction is debited directly from the cardholder's account and the card does not allow any credit.

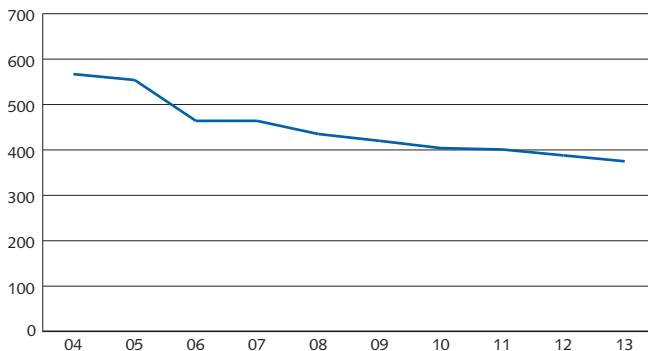
A *charge card* does not debit the cardholder's account directly. Instead, the card issuer gathers purchases for a specified period and then invoices the cardholder for the total amount for the period.

A *credit card* functions like a charge card but allows the cardholder the possibility of credit. This means that the cardholder can choose to pay all, part or none of the invoiced amount. In the latter two cases, the outstanding debt is rolled over into a new period and starts to accrue interest.

The use of cards has increased rapidly in Sweden in recent years (see Chart 31). In terms of the number of payments and total transaction value, cards are the most widely-used payment instrument for POS payments.

Between 1998 and 2013, the number of card payments increased from 213 million transactions to 2 398 million per year. Over the same

**Chart 32. Average value of a card payment
SEK**



Source: The Riksbank

period, the value of these payments has increased from SEK 149 billion to SEK 900 billion. Debit cards are the dominating card type and stand for 83 per cent of the number of card transactions and 73 per cent of the total value.

The value of an average card payment fell markedly over the period 1998-2013, from SEK 700 to SEK 375 (see Chart 32). The people of Sweden are thus using cards to a greater degree to pay smaller amounts than before. Cards are thus increasingly acting as a substitute for cash.

CREDIT TRANSFERS

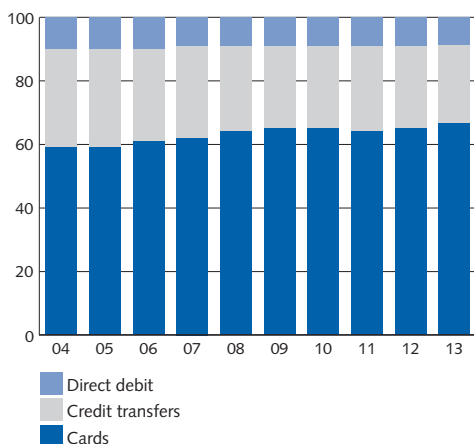
Credit transfers are used for remote payments, that is for payments where the payer and the recipient do not meet directly. In a credit transfer, the payer instructs his bank to transfer a certain sum from his bank account to the recipient's bank account.

In an account-to-account transfer, the paying party's bank carries out the payment without this being requested by the recipient's bank. The recipient's account number is specified on the payment instruction together with the amount.

In a giro payment, a special bank or PlusGiro number is used to identify the recipient, instead of an account number. Giro payments are the dominant way of paying household bills and other invoices, as well as for payments between companies.

In terms of SEK, the transaction value for credit transfers and direct debits amounted to SEK 14 175 billion in the year 2013. The

Chart 33. Use of payment instruments
Per cent



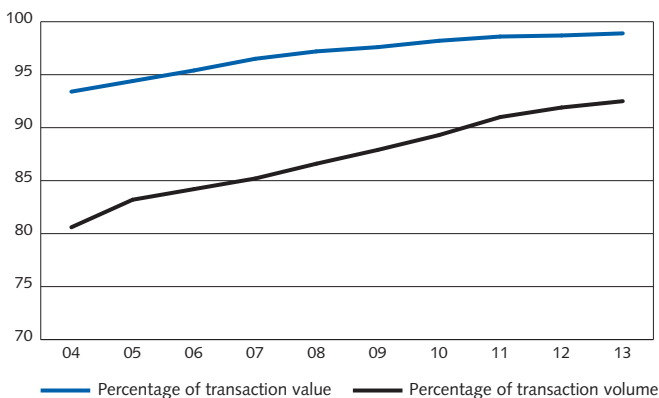
Source: The Riksbank

total number of credit transfers in the same year was 894 million. Credit transfers are thus relatively few in comparison, for example, with the number of card payments (see Chart 33), but in terms of value, credit transfers and direct debits account for 94 per cent of the total transaction value of account-based payments.¹¹⁰

Most credit transfers and account-to-account transfers are now initiated electronically (see Chart 34). Usually they are initiated using an online bank or via data files that can be used by companies. A few credit transfers are still paper-based and are mainly initiated by households using credit transfer forms that are posted, or over-the-counter at a bank.

E-invoices form a service for electronic invoices in Sweden. If a customer has subscribed to this service, the customer's invoices will be presented directly to his or her online bank, allowing the customer to avoid having to manually register all information such as recipient, amount, date and OCR reference number, just like a direct debit. The customer only needs to check the payment details and then approve the payment. E-invoices also have advantages for the payment recipient, including reduced expenditure on paper invoices and increased possibilities for integration with the company's accounting system. Certain banks offer e-invoices with automatic payment. This gives the customer benefits similar to those with direct debiting (see below) at the same time as the customer has greater control over payments and can easily choose to stop them.

Chart 34. Percentage of electronically-initiated debits and transfers
Per cent



Source: The Riksbank

¹¹⁰ This statistic does not include transfers between accounts within the same bank or transfers between PlusGiro accounts in Nordea.

DIRECT DEBIT

Direct debit is a payment service in which the payment recipient and the payer agree on the automatic debiting of the payer's bank account. Direct debit is, in principle, an automated giro payment, but, unlike normal giro payments, it is initiated by the recipient's bank. It is used for the same purposes as other credit transfers, but is particularly suited to recurring payments in smaller amounts.

In 2013, the number of direct debit payments was about one-quarter of the number of credit transfers, but, in terms of value, these payments only amounted to about 4 per cent of the value of giro payments. In 2012, just over 70 per cent of households stated that they used direct debit to pay bills.

ELECTRONIC MONEY AND PREPAID CARDS

Electronic money (e-money) is money in the form of digital value units that can only be used for electronically-transferred payments. In addition to e-money, terms such as e-wallet, digital money and electronic currency are used. In theory, e-money is a substitute for cash that exists in the memory of a computer or as the chip in a card. In practice, however, cash and e-money do not have the same characteristics, as e-money also has many similarities with account-based payments. Like a card payment, e-money also needs a financial infrastructure. The real difference is that the money is deposited with the issuer of the e-money, instead of in a bank account. The holder of e-money can redeem it for a traditional account balance or cash from the issuer.

E-money is a relatively broad concept. Among other payments, the definition's framework covers mobile payments, which involve money being stored on and transferred via a mobile telephone, and payments stored via the Internet, such as PayPal. The term e-money is sometimes even used to describe card payments.

Prepaid cards are closely related to e-money, but are not subject to the Electronic Money Act as they can only be used within a limited network of points-of-sale or for a limited range of goods or services. Currently existing prepaid cards are linked to specific chains of shops or are used to make telephone calls.

As e-money is such a broad concept, there are no exact statistics. However, almost one-fifth of respondents to the Riksbank's 2012 interview survey stated that they have access to e-money for Internet purchases.

MONEY ORDERS

A *money order* is a secure way of paying that is sometimes used for larger purchases where it would be impractical to pay cash and where the seller cannot accept a normal cheque or card payment. A money order is bought at one of the Swedish banks for the desired amount and is made out to the recipient or to the buyer of the money order. The value of the money order represents a claim on the bank. If the money order is made out to the buyer of the money order, the buyer can later use it as a means of payment by transferring it to the recipient. Today, the use of money orders is negligible, even if they are occasionally used for payment in certain specific situations.

Virtual currencies

Virtual currencies have recently arisen as an alternative to more traditional payment services. A virtual currency is a digital unit of currency that is primarily used for Internet-based payments. It is not issued by a central bank but is usually issued and controlled by the developer, which can be a company or other private organisation. The common factor for virtual currencies is that they are generally not subject to the same regulation as traditional payment services.

Some virtual currencies only occur in certain online games and cannot be used in other contexts or be exchanged for any other currency. Users receive the virtual currency as remuneration or reward for activities performed on the website where the currency can be used. World of Warcraft Gold is one example of this type of currency. There also exist virtual currencies that can be purchased with traditional currencies and example of this kind of virtual currency. Some

can also be used in other online environments, such as the Linden Dollar in the game Second Life.¹¹¹ A third type of virtual currency can be both bought with and sold for traditional currency.

Some virtual currencies can also be used for payments between private individuals and not just within the framework of a certain online environment. Bitcoin, Litecoin and Ripple are examples of these.

How much acceptance a virtual currency has is determined by the users of the currency. There is thus no guaranteed return on virtual currencies. They differ in this way from national currencies, which have the status of legal tender and which can always be used for tax payments and so on. Consequently, virtual currencies cannot be seen as an alternative to national currencies. The use of virtual currencies is also very small compared with traditional payment services. Table 16 shows the value of the issued "currency" and its return over five days in July 2014.

111 For example, the Linden Dollar can be exchanged for euros on several independent marketplaces online.

Table 16. Highest issued value and global turnover (24 hours) for decentralised virtual currency schemes

NAME	USD MILLION	
	ISSUED	TURNOVER
Bitcoin	7 998	13.28
Litecoin	252	2.12
Darkcoin	50	0.10
Peercoin	44	0.12
Dogecoin	30	0.03
Others	207	2.69
Total	8 581	18.34

Note. These figures apply to exchange rates and turnover per 21-25 July 2014.
Sources: <http://coinmarketcap.com> and the Riksbank

Systems in the financial infrastructure

The systems that are used to manage payments and trading in financial instruments in Sweden are described below. These systems form the cornerstones of the Swedish financial infrastructure.

RIX – THE SYSTEM FOR LARGE-VALUE PAYMENTS

A large proportion of the banks' payments are made via their accounts in the Riksbank's system for large-value payments, RIX. All major Swedish banks and clearing organisations participate in the system (see Figure 11).¹¹² RIX thus constitutes an important hub in the infrastructure. The Riksbank owns and runs RIX and is also a participant. The banks' accounts in RIX are used for both the direct payments between the banks and for the final settlement of payment orders from bank customers. This means that most payments involving a transfer from an account in one bank to an account in another bank are settled in RIX. Payments arising from transactions in financial instruments are also settled in RIX.

Settlement is based on the principle of Real Time Gross Settlement (RTGS). This means that payments are settled immediately, one by one. This is under the condition that the payer has sufficient liquid funds, which is to say money in its account. This settlement method reduces the risk associated with settlement, but on the other hand requires large amounts of liquidity.¹¹³ In order to ensure the smooth settlement of payments, the banks are able to cover their liquidity requirements by borrowing intraday funds from the Riksbank. All such borrowing is covered by approved collateral.

Some payments are first processed at one of the clearing organisations: Bankgirot, Euroclear Sweden, Nasdaq OMX Clearing, EuroCCP or CLS. Thereafter, only the remaining net sum is settled in RIX. However, the majority of the payments are sent directly from the participants for settlement in RIX. During 2013, the number of transactions in RIX averaged 15 324 per banking day. The average daily turnover was SEK 450 billion.

¹¹² The banks participate either as direct or indirect participants. 16 Swedish credit institutions and Bankgirot, EuroCCP, Euroclear Sweden, Nasdaq OMX Clearing, CLS, the Swedish National Debt Office and the Riksbank are participants in RIX.

¹¹³ In multilateral net settlement, all the participants' debts are offset against one another. This method requires less liquidity, but entails a higher level of risk, as the entire settlement process is stopped if one participant – regardless of size – cannot meet its obligations.

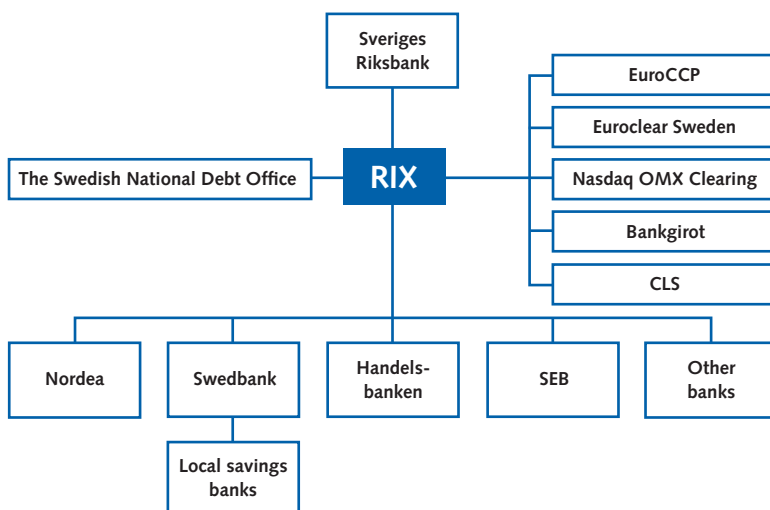
BANKGIROT – THE SYSTEM FOR RETAIL PAYMENTS

Bankgirot is a bank-owned clearing organisation and is the central participant in the mediation of retail payments in Sweden. An average of four million transactions to a total value of SEK 47 billion are cleared through Bankgirot's system each bank day. Several different types of payments and transfers are made through Bankgirot. These include bank giro payments (such as direct debits and payments of suppliers and wages), account-to-account transfers, cash management transfers between banks and the final settlement of card payments and ATM withdrawals. Bankgirot also offers services unconnected with ordinary payments, such as electronic identification and electronic invoicing.

Bankgirot owns and operates the bankgiro system, which manages all of Bankgirot's payment products. As clearing organisation, Bankgirot also offers a clearing and settlement service. In 2012, Bankgirot launched the new payment system Payments in Real Time. This supplies the settlement of payments in real time, 24 hours a day, every day of the year, between participating banks. The first product to use the platform for Payments in Real Time is Swish.¹¹⁴

Bankgirot's payment system compiles and mediates information to the banks regarding the size of the transfers that are to be made and to which account transfers shall be made. The payments are settled in

Figure 11. The Swedish payment system



¹¹⁴ Swish is a mobile payment service offered by some banks that allows private individuals to issue and receive payments in real time via their bank accounts using their mobile telephones.

SEK or EUR. The settlement of SEK payments is carried out in RIX on a Real Time Gross Settlement basis. As regards payment orders in EUR, each paying bank receives settlement documentation from Bankgirot and subsequently forwards this documentation to the European Central Bank's settlement system TARGET2, either directly or via its custodial bank. Bankgirot is then responsible for matching and confirming the implementation of the settlement.

EUROCLEAR SWEDEN – CENTRAL SECURITIES DEPOSITORY

As mentioned earlier, transactions relating to financial instruments require settlement in two phases: one for the securities and one for the payments. Systems for the registration of the securities and for keeping them in accounts are also required. In Sweden, it is Euroclear Sweden that registers and holds securities in accounts and settles transactions on the equity market and fixed income market. Some transactions on the derivatives market are also settled in this system. Today, securities exist almost exclusively as electronic records. Euroclear Sweden, which keeps the central register for the various participants' holdings, is therefore very important to the financial infrastructure. Euroclear Sweden registers all transactions involving issues of securities in Swedish krona and the trading of securities and pledging.

A transaction involving equities or debt securities begins with an investor placing an order with an intermediary, usually a bank, to buy or sell. The bank can itself take on the role of counterparty or seek a counterparty on a marketplace, for example a stock exchange. When the bank has found a counterparty to trade with and the transaction is completed, Euroclear Sweden is informed. This marks the start of a matching process in which the buy and sell orders are paired. Euroclear Sweden verifies the identity of the bank and that the counterparty (bank or central counterparty) are in agreement on the securities concerned, the number/nominal amount, payment, trading date and settlement date. On the settlement date, all the matched instructions that have been registered under this particular settlement date are verified.

Euroclear Sweden verifies that the seller can supply the security and that the buyer can pay. After that, the transaction is settled and the money and security exchange owners. Euroclear Sweden uses a number of processes that reduce the need for liquidity and securities in the system. These optimisation processes are run continuously throughout the day so that several orders can be settled at the same time, and the settlement is made more efficient as buy and sell orders can offset one another.

As transactions in financial instruments often involve large sums, it is important that both phases of the transaction are completed at the same time, that is that money and securities are transferred simultaneously. To further reduce the risks, the settlement is carried out using accounts provided by the central bank, which means that the settlement is made in central bank money. For this purpose, the Riksbank permits Euroclear Sweden to administer accounts in RIX. In order to cover its liquidity needs in connection with securities settlement, a participant may transfer liquid funds between the Riksbank accounts administered by Euroclear Sweden and its regular RIX accounts at any time during the day. The Riksbank can also grant credit against collateral on these accounts during the day.

In 2013, the average gross sum for the settlement of equity transactions amounted to SEK 36 billion per day. The corresponding figure for fixed income market transactions was SEK 341 billion.¹¹⁵ The value of fixed income market transactions is thus higher than that of transactions on the equity market. However, the number of transactions is much higher on the equity market, with an average of 47 000 transactions per day, compared to an average of 1 300 per day on the fixed income market.

NASDAQ OMX CLEARING – CENTRAL COUNTERPARTY IN DERIVATIVES CLEARING

Nasdaq OMX Clearing handles repos and equity, interest rate and commodity derivatives by acting as the central counterparty and thus manages the risks associated with open exposure to a transaction counterparty. When Nasdaq OMX Clearing acts as central counterparty in the deal between buyer and seller, each transaction is replaced by two new deals, where Nasdaq OMX Clearing is the seller to all buyers and the buyer to all sellers. Consequently, the original parties have a claim on, or a debt to, Nasdaq OMX Clearing instead of one other. This means that the counterparty risks that the parties would have been exposed to in relation to each other are transferred to Nasdaq OMX Clearing.

The signing of a derivatives contract usually creates payment flows – for example, in an option transaction, an option premium is payable.¹¹⁶ Payments can also often arise during the term of a

¹¹⁵ In addition to the debt securities traded by institutional investors on the fixed income market, Euroclear Sweden handles certain fixed income instruments that are mainly aimed at private individuals in the same way as equity transactions. These are included in the equity market statistics and not in the fixed income market statistics.

¹¹⁶ The price of an option is called the option premium. It reflects the compensation for the risk that the issuer of the option takes.

derivatives contract. These payments are cleared in Nasdaq OMX Clearing and settled in RIX.

When a derivatives contract matures, the contract is settled, either through the exchange of liquidity or by delivering the agreed amount of the underlying security. In the case of cash settlement, the amount is cleared on Nasdaq OMX Clearing and settled directly in RIX. In connection with the delivery of the underlying security, the securities phase of the deal is settled by transferring the securities concerned in Euroclear Sweden's system, while the payment phase is settled through the RIX accounts administered by Euroclear Sweden.

In 2013, a daily average of approximately 473,000 derivatives and repos were traded on Nasdaq OMX Clearing each day.

EUROCCP – CENTRAL COUNTERPARTY FOR EQUITY CLEARING

EuroCCP N.V. (EuroCCP)¹¹⁷ is the central counterparty that clears most Swedish equities. Most equities traded on the equity market in Stockholm¹¹⁸ must be cleared via EuroCCP, which is to say those belonging to the list Large Cap. In addition, EuroCCP clears equities on several other marketplaces in Europe.

The clearing service offered by EuroCCP involves it acting as the central counterparty in equity transactions in place of its members. The counterparty risks that the parties would have had in relation to each other is thus transferred to the central counterparty. Clearing is performed in line with the multilateral netting principle. The final settlement of the Swedish equity transactions is conducted by Euroclear Sweden. In 2013, Swedish equity transactions amounting to a daily average value of SEK 14 billion were cleared in EuroCCP.

CLS – THE SYSTEM FOR FOREIGN EXCHANGE SETTLEMENT

As mentioned above, the settlement of foreign exchange transactions can give rise to substantial risks if the two phases in a transaction are settled separately in the respective countries. The time lag that arises leads to major exposures between the banks. To reduce these risks, Continuous Linked Settlement (CLS) started up in September 2002. In CLS, foreign exchange transactions are settled on a Payment versus Payment (PvP) basis. This entails the participating banks having

¹¹⁷ EuroCCP is the Dutch central counterparty and has cleared equities on the European market for several years. However, the company changed name in January 2014. Previously, the company was known as the European Multilateral Clearing Facility (EMCF). There is also a British central counterparty known as EuroCCP. This company will disappear in 2014, with its operations being incorporated into the Dutch EuroCCP. For more information, see www.euroccp.com.

¹¹⁸ The stock exchange in Stockholm is called Nasdaq OMX Nordic.

accounts – one for each currency – with CLS through which the two currencies in a transaction are transferred simultaneously. In turn, CLS has accounts with the central banks for the respective participating currency areas. The net balance of each member's transactions is paid to or by CLS using each country's system for large-value payments – in Sweden's case RIX. This eliminates

In 2013, average turnover per day in CLS as a whole amounted to USD 4 997 billion. Daily turnover in the system is thus significantly higher than Sweden's annual GDP.¹¹⁹ The Swedish krona accounts for only 1.3 per cent of the total turnover, which is to say SEK 411 billion per day. All four major Swedish banks are direct participants¹²⁰ in CLS and several currencies are included in the system.¹²¹

Payment flows in the Swedish financial infrastructure

Figure 12 presents the different types of payment that are settled in the Swedish financial infrastructure. The payments are either made directly in RIX or via clearing in Euroclear Sweden, NASDAQ OMX Clearing, Bankgirot, EuroCCP or CLS before they are passed on for settlement in RIX. The amounts presented in the figure are approximate and provide an estimate of the amounts for the different types of payment that were settled in RIX, on average, per day in 2013. The figures for CLS are counted double. The reason is that both values in a foreign exchange transaction, the Swedish currency and the foreign currency, generate payment flows. The different systems may in some cases reduce the total flows by converting gross positions to net positions, which is described below.

THE FIXED INCOME MARKET

As shown in Figure 12, trade in the fixed income market gives rise to the largest payment flows in the infrastructure. In 2013, Euroclear Sweden settled an average of SEK 341 billion per day from the fixed income market.¹²² The fixed income market refers to spot trading and

119 In 2013, Sweden's GDP amounted to approximately USD 536 billion (calculated using an average exchange rate of 6.78) or to around SEK 3,634 billion.

120 In addition to direct participants, the CLS also has third party participants who use its system via a direct participant.

121 The currencies included in the system at present are the US dollar, the Australian dollar, the British pound, the Canadian dollar, the Danish krone, the Euro, the Hong Kong dollar, the Israeli shekel, the Japanese yen, the Korean won, the Mexican peso, the Norwegian krone, the New Zealand dollar, the South African rand, the Singapore dollar, the Swedish krona and the Swiss franc.

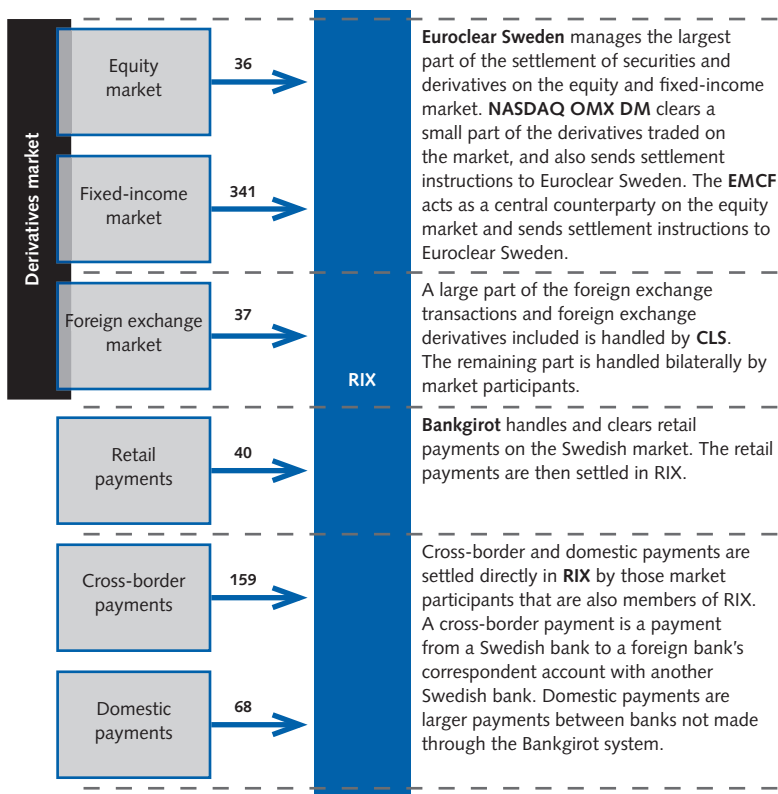
122 In addition to the debt securities traded by institutional investors on the fixed income market, Euroclear Sweden handles certain fixed income instruments that are mainly aimed at private individuals in the same way as equity transactions. These are included in the equity market statistics and not in the fixed income market statistics.

derivatives trading to the extent that these lead to the delivery of an underlying security.

THE EQUITY MARKET

Euroclear Sweden also settled SEK 36 billion per day from transactions relating to the equity market. These values were settled using the accounts that Euroclear Sweden administers in RIX and relate to the delivery of underlying securities. This excludes those internal transactions in which a clearing member is its own counterparty on the exchange. The figure includes trade both on and outside the exchange. The figure includes trade both on and outside the exchange.

Figure 12. Payment flows in the Swedish financial infrastructure
SEK billion, daily averages 2013



Sources: Bankgirot, CLS, EuroCCP, Euroclear Sweden, Nasdaq OMX Clearing and the Riksbank

EuroCCP, which acts as a central counterparty on the equity market, cleared transactions amounting to SEK 13 billion in 2013. After clearing and netting, SEK 4 billion of this sum was then settled through Euroclear Sweden.

THE FOREIGN EXCHANGE MARKET

From a clearing and settlement point of view, trade on the foreign exchange market can be managed in two different ways, in CLS or through a correspondent bank. Payments in Swedish krona for foreign exchange transactions are usually based on foreign exchange contracts, either spot or forward contracts, or are handled as currency swaps or options. In 2013, payments in a value of SEK 411 billion were cleared by CLS every day. After netting, only SEK 18 billion per day remained to be finally settled in RIX. The foreign exchange transactions cleared through a correspondent bank and finally settled in RIX amounted to SEK 19 billion per day in 2013. These transactions consist of interbank payments in connection with foreign exchange trading, for example a transfer between a Swedish bank and a foreign bank's account with another Swedish bank. In total, the sums settled in RIX stemming from foreign exchange trading thus amounted to SEK 37 billion per day.

THE DERIVATIVES MARKET

Derivatives trading on Nasdaq OMX Clearing generates relatively small payment flows. These consist of payments for derivative transactions, for example equity options, equity futures, index options and index futures. Only a small proportion of the turnover from derivative transactions generates an actual payment as derivative positions are largely netted between the participants concerned. The underlying values may be large in many cases, but the values that are actually settled, and thus paid, are limited. The amounts are netted in Nasdaq OMX Clearing's system and only a small portion is finally settled in RIX. For 2013, this figure was SEK 223 million per day, divided among the equity market and fixed income market. At present, Nasdaq OMX Clearing settles no foreign exchange derivatives. The foreign exchange derivatives settled in RIX primarily come from CLS.

RETAIL PAYMENTS

The account-based retail payments are managed through Bankgirot. This covers the majority of all payments to and from individuals and most companies, such as wage payments, giro payments, card

purchases and supplier payments. An average of SEK 47 billion a day was cleared in Bankgirot's system in 2013. After netting in Bankgirot, SEK 40 billion per day remained to be paid between the major banks (that is, to be settled in RIX).

CROSS-BORDER PAYMENTS

One of the largest items in RIX is foreign payments, that is payments in Swedish kronor that go to a Swedish bank which, in turn, is a correspondent bank for a foreign bank. This is also known as foreign clearing, and accounted for payments totalling SEK 159 billion per day in 2013. If the recipient Swedish bank has accounts with the foreign bank, no transaction in RIX occurs. The reported value of SEK 159 billion per day therefore relates only to the payments that are made between Swedish banks in cases where one of the banks has acted as a correspondent bank for a foreign bank. The total value of foreign payments is therefore probably much higher.

DOMESTIC PAYMENTS

Domestic payments, which gave rise to an average of SEK 68 billion per day in 2013, refer partly to payments stemming from the money market with short maturities and partly to pure interbank payments. These payments are in Swedish kronor and arise between Swedish banks in Sweden. An interbank payment can arise, for instance, when a company needs to make a payment to another company quickly and the sending and receiving companies have different banks. In this case, the payment will go through RIX. Smaller payments that are not urgent usually go through Bankgirot.

Appendix 1. Tables

**Table A. Issuers and investors on the money market
SEK billion**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Issuers in the money market										
Central government	267	294	259	180	139	116	92	72	105	94
Mortgage institutions	93	72	113	106	105	72	14	10	12	0
Other credit market companies	9	10	9	19	45	12	12	34	18	42
Non-financial companies	62	62	66	96	97	73	58	68	83	80
Municipalities	5	6	11	5	9	6	10	14	15	18
Banks	47	69	62	108	96	62	37	48	51	33
Total	483	515	520	515	491	341	223	246	287	268
Investors in the money market										
AP funds	2	7	3	4	6	0	1	0	10	8
Insurance companies	108	135	88	92	42	23	26	30	49	38
Banks	152	129	151	87	133	119	64	51	71	96
Rest of the world	82	75	52	43	75	54	23	39	56	53
Companies and others	133	168	226	289	235	145	109	126	98	72
Total	483	515	520	515	491	341	223	246	287	268

Sources: Statistics Sweden, annual reports (AP funds) and the Riksbank

**Table B. Average turnover per day on the money market
SEK billion**

	TREASURY BILLS	MORTGAGE CERTIFICATES
2004	12.2	3.1
2005	9.9	2.0
2006	10.4	2.7
2007	8.3	2.2
2008	7.4	2.1
2009	4.0	1.7
2010	4.1	0.7
2011	3.1	0.4
2012	3.8	0.4
2013	3.9	0.1

Source: The Riksbank

**Table C. Average turnover per day in repos
SEK billion**

2004	123
2005	141
2006	176
2007	196
2008	170
2009	92
2010	119
2011	120
2012	124
2013	113

Source: The Riksbank

**Table D. Issuers and investors on the bond market
SEK billion**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Issuers in the bond market										
Central government	810	817	812	768	753	741	802	796	761	801
Mortgage institutions	552	685	747	821	937	1 035	1 105	1 241	1 159	1 219
Banks	70	91	115	196	298	290	290	297	372	509
Kommuner och landsting	13	16	20	21	18	18	18	30	40	63
Municipalities and county councils	94	120	117	143	164	169	188	192	210	279
Other credit market companies	71	71	81	90	88	71	78	94	70	114
Total	1 611	1 799	1 891	2 037	2 257	2 324	2 482	2 650	2 612	2 986
Investors on the bond market										
AP funds	223	266	301	326	266	268	293	308	315	318
Insurance companies	599	613	701	744	834	1 114	1 087	1 205	1 219	1 194
Banks	129	262	281	337	475	473	346	364	370	396
Rest of the world	529	638	545	537	459	462	462	581	701	887
Companies and others	131	19	63	93	223	7	294	191	7	191
Total	1 611	1 799	1 891	2 037	2 257	2 324	2 482	2 650	2 612	2 986

Sources: Statistics Sweden, annual reports (AP funds) and the Riksbank

**Table E. Outstanding volume of corporate bonds
in SEK issued by Swedish non-financial companies
SEK billion**

2004	94
2005	120
2006	117
2007	143
2008	164
2009	169
2010	186
2011	192
2012	210
2013	279

Source: Statistics Sweden

**Table F. Average turnover per day on the bond market
SEK billion**

	GOVERNMENT BONDS	MORTGAGE BONDS
2004	22.5	9.1
2005	28.1	9.5
2006	29.5	10.2
2007	29.7	13.2
2008	22.0	15.2
2009	16.6	12.4
2010	17.7	13.3
2011	17.5	12.5
2012	19.7	14.4
2013	19.3	13.1

Source: The Riksbank

**Table G. Average daily turnover on the Swedish foreign exchange market
SEK billion**

	SPOT	FORWARDS	OPTIONS	LONG-TERM FOREIGN-EXCHANGE SWAPS	SHORT-TERM FOREIGN-EXCHANGE SWAPS
2004	50	14	8	55	79
2005	58	17	12	66	116
2006	70	23	14	75	128
2007	84	39	14	91	141
2008	81	34	9	103	137
2009	70	28	13	112	108
2010	72	26	13	121	96
2011	77	28	13	126	96
2012	77	23	11	123	98
2013	86	20	7	94	90

Source: The Riksbank

**Table H. Net issues of Swedish equities
SEK billion, market value**

	LISTED EQUITIES	NON-LISTED EQUITIES
2004	-20	77
2005	-18	71
2006	13	48
2007	10	84
2008	-70	-47
2009	76	126
2010	14	36
2011	10	49
2012	4	248
2013	14	88

Note. Net issues refers to new issues of equities minus equity buy-backs
Source: Statistics Sweden

Table I. Equity turnover and market capitalisation on Nasdaq OMX Stockholm SEK billion

	EQUITY TURNOVER	MARKET CAPITALISATION
2004	3 391	2 699
2005	3 764	3 507
2006	5 519	4 227
2007	6 525	3 959
2008	4 694	2 239
2009	3 393	3 413
2010	3 627	4 230
2011	3 684	3 496
2012	2 769	3 916
2013	2 930	4 826

Source: Nasdaq OMX Stockholm

Table J. The balance sheet totals and assets of the financial intermediaries at year-end 2013 SEK billion

	TOTAL ASSETS/ INVESTMENT ASSETS	LENDING TO THE PUBLIC	OTHER LENDING	DEBT SECURITIES	EQUITIES	OTHER ITEMS
Credit institutions						
Banks	6 550	2 704	1 848	869	540	588
Mortgage institutions	2 549	2 372	92	17	0	68
Other credit market companies	870	492	46	188	6	137
Total credit institutions	9 968	5 568	1 987	1 074	546	793
Investors						
Insurance companies	3 408	62	20	1 250	1 847	228
National Pension Funds	1 271	-	-	403	804	64
Fund management companies	2 347	-	-	476	1 316	555
Total investors	7 026	62	20	2 129	3 967	848
Securities companies	12	0.4	5	0.4	0.7	6

Note. Column 1 shows the total assets for banks, mortgage institutions, other credit market companies and securities companies, while for insurance companies and AP funds they show investment assets and for securities funds they show the funds managed.

Sources: Statistics Sweden, annual reports and the Riksbank

Table K. Geographical breakdown of the major banks' lending 2013 Per cent

	SWEDEN	OTHER NORDIC COUNTRIES	BALTIC COUNTRIES	GERMANY	UNITED KINGDOM	REST OF THE WORLD
Swedbank	86.3	3.5	9.8	0.0	0.0	0.3
SEB	73.9	3.4	8.8	11.4	0.0	2.4
Nordea	25.7	70.1	2.4	0.0	0.0	1.7
Handelsbanken	65.7	22.3	0.0	0.3	7.8	3.9
Four major banks	53.6	36.3	4.2	2.0	1.8	2.1

Sources: Bank reports and the Riksbank

**Table L. The four major banks' deposits and lending in foreign currency
SEK billion**

	LENDING	DEPOSITS	DEPOSITS DEFICIT
2004	1 714	1 190	524
2005	2 143	1 398	745
2006	2 373	1 499	874
2007	2 957	1 810	1 147
2008	3 946	2 131	1 814
2009	3 685	2 037	1 648
2010	3 299	1 936	1 363
2011	3 537	2 297	1 240
2012	3 506	2 224	1 282
2013	3 656	2 404	1 252

Note. Deposit deficit = lending minus deposits

Sources: Bank reports and the Riksbank

**Table M. Credit institutions' lending to the public
SEK billion**

	TOTAL	BANKS	MORTGAGE INSTITUTIONS	OTHER CREDIT MARKET COMPANIES
2004	2 874	1 217	1 393	263
2005	3 237	1 419	1 529	289
2006	3 652	1 668	1 664	320
2007	4 185	2 259	1 595	331
2008	4 621	2 497	1 765	360
2009	4 719	2 355	1 972	392
2010	4 923	2 402	2 107	414
2011	5 219	2 543	2 193	484
2012	5 410	2 685	2 261	464
2013	5 568	2 704	2 372	492

Source: The Riksbank

**Table N. The banks' assets
SEK billion**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Lending to the public in Sweden	1 042	1 181	1 345	1 880	2 027	1 890	2 000	2 132	2 244	2 254
Lending to the public abroad	170	224	291	323	415	359	354	365	400	410
Swedish National Debt Office and the Riksbank	11	14	32	56	262	265	54	63	67	58
Lending to Swedish monetary financial Institutions	610	669	721	620	757	781	919	794	847	973
Lending to foreign monetary financial Institutions	352	442	547	748	713	737	545	582	525	612
Debt securities	369	503	569	634	927	1 021	864	778	794	869
Other	610	609	681	691	1 176	827	1 161	1 284	1 365	1 374
Total	3 163	3 642	4 185	4 952	6 277	5 880	5 896	5 997	6 242	6 550

Source: The Riksbank

Table O. Banks' lending to the public
SEK billion

	SWEDISH NON-FINANCIAL COMPANIES	SWEDISH HOUSEHOLDS	SWEDISH PUBLIC SECTOR	PUBLIC ABROAD	OTHER SWEDISH LENDING
2004	627	313	42	170	65
2005	741	351	49	224	53
2006	827	401	68	291	81
2007	1 093	648	97	323	98
2008	1 218	717	93	415	53
2009	1 050	761	128	359	57
2010	1 058	817	64	354	110
2011	1 144	866	68	365	101
2012	1 156	967	56	400	106
2013	1 142	1 004	53	410	95

Source: The Riksbank

Table P. The banks' liabilities and equity
SEK billion

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Deposits from the public in Sweden	1 111	1 266	1 439	1 612	1 810	1 829	1 987	2 114	2 257	2 384
Deposits from the public abroad	134	134	162	145	132	142	144	182	203	204
Deposits from Swedish monetary financial institutions	168	181	221	307	748	572	264	234	243	261
Deposits from foreign monetary financial institutions	735	825	925	983	1 113	963	859	845	715	736
Securities issued	349	548	659	956	1 226	1 372	1 524	1 626	1 700	1 974
Other	458	467	552	666	937	617	733	593	683	527
Equity	208	221	227	283	310	384	385	403	441	462
Total	3 163	3 642	4 185	4 952	6 277	5 880	5 896	5 997	6 242	6 550

Source: The Riksbank

Table Q. Banks' deposits from general public
SEK billion

	SWEDISH NON-FINANCIAL COMPANIES	SWEDISH HOUSEHOLDS	SWEDISH PUBLIC SECTOR	PUBLIC ABROAD	OTHER SWEDISH LENDING
2004	388	569	42	134	45
2005	451	617	56	134	48
2006	505	712	70	162	24
2007	520	870	63	145	159
2008	603	945	93	132	170
2009	610	987	84	142	148
2010	625	1 080	68	144	214
2011	660	1 172	68	182	215
2012	693	1 269	80	203	216
2013	725	1 338	83	204	237

Source: The Riksbank

Table R. The banks' average deposit and lending rates from/to Swedish non-financial companies and households and treasury bill yields

Per cent

	LENDING RATE	DEPOSIT RATE	TREASURY BILL YIELDS 6 MONTHS
2004	3.91	0.93	2.03
2005	3.30	0.73	1.95
2006	4.37	1.82	3.13
2007	5.17	2.78	4.19
2008	4.28	1.73	1.15
2009	2.35	0.27	0.22
2010	3.42	0.95	1.54
2011	4.28	1.59	1.31
2012	3.57	1.10	0.90
2013	3.23	0.81	0.78

Note. Several major amendments have been made to the statistics as of September 2005.

Source: The Riksbank

Table S. Mortgage institutions' lending to the public
SEK billion

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Single-family dwellings	749	869	966	915	979	1 069	1 135	1 184	1 216	1 265
Tenant-owned apartments	152	196	240	241	279	329	372	395	413	453
Multi-family dwellings	400	395	391	369	389	432	434	441	453	471
Commercial and office buildings	28	28	28	31	35	52	62	71	79	84
Other	40	40	37	39	83	88	103	102	99	99
Total	1 369	1 528	1 662	1 595	1 763	1 970	2 106	2 192	2 261	2 372

Source: The Riksbank

Table T. Mortgage institutions' new lending per original fixed-term rates
Per cent

NEW LOANS DURING THE MONTH	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Variable rate	54.8	50.3	55.8	47.9	67.1	84.1	68.6	54.1	58.2	63.9
Fixed-rate term ≤ 5 years	32.3	31.0	26.5	29.4	24.6	13.0	24.4	40.8	33.7	27.5
Fixed-rate term > 5 years	13.0	18.7	17.8	22.6	8.3	2.9	7.0	5.1	8.0	8.7

Source: The Riksbank

Table U. Mortgage institutions' loan stock per original fixed-term rates
SEK billion

POSITION AT END OF MONTH	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Variable rate	496	604	705	645	799	1 130	1 152	1 040	1 019	1 149
Fixed-rate term ≤ 5 years	615	598	603	579	616	523	786	992	1 093	1 087
Fixed-rate term > 5 years	283	327	356	370	348	319	140	131	123	113
Total	1 393	1 528	1 663	1 595	1 763	1 972	2 078	2 163	2 235	2 350

Source: The Riksbank

Table V. Securities issued by mortgage institutions
SEK billion

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Certificates	171	175	146	167	81	116	10	27	22	13
Bonds	738	853	1 043	1 137	1 286	1 393	1 432	1 619	1 621	1 632
Of which covered bonds	-	-	-	-	-	-	1 431	1 618	1 620	1 632
Other securities	0	0	0	0	0	0	0	0	0	0
Total	910	1 028	1 189	1 304	1 367	1 509	1 442	1 646	1 643	1 645

Source: The Riksbank

Table W. Lending by other credit market companies to the public
SEK billion

	SWEDISH NON-FINANCIAL COMPANIES	SWEDISH HOUSEHOLDS	SWEDISH PUBLIC SECTOR	PUBLIC ABROAD	OTHER SWEDISH LENDING
2004	91	114	37	21	0
2005	104	115	38	33	0
2006	116	121	41	42	1
2007	114	124	42	51	1
2008	135	91	49	83	2
2009	150	97	54	89	2
2010	160	104	54	96	0
2011	183	110	76	115	0
2012	183	67	94	119	1
2013	197	69	94	131	0

Source: The Riksbank

Table X. Insurance companies' investment assets
SEK billion

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Life insurance companies	1 567	1 833	1 990	2 132	1 931	2 246	2 459	2 447	2 665	2 900
Non-life insurance companies	363	420	439	468	447	485	498	497	500	507
Total	1 930	2 253	2 429	2 600	2 378	2 731	2 956	2 943	3 166	3 408

Source: Statistics Sweden

Table Y. The insurance companies' allocation of investment assets
SEK billion

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Equities	807	1 051	1 215	1 282	947	1 344	1 546	1 383	1 569	1 847
Bonds	844	894	953	1 016	1 164	1 114	1 087	1 205	1 219	1 194
Short-term investments	160	188	140	148	133	90	94	112	124	117
Loans, other financial investments ¹	59	51	49	78	68	120	164	173	183	176
Property	61	70	72	76	65	63	66	70	70	73
Total	1 930	2 253	2 429	2 600	2 378	2 731	2 956	2 943	3 166	3 408

1. Changed definition as of the first quarter of 2009. The current definition includes lending, derivatives and repos.

Source: Statistics Sweden

Table Z. Value of banknotes and coins in circulation (annual average, banks' holdings excluded)
Percentage as a proportion of GDP and SEK billion

	NOMINAL AMOUNT	PERCENTAGE OF GDP
2004	93 829	3.5
2005	96 342	3.5
2006	96 541	3.3
2007	97 019	3.1
2008	96 688	3.0
2009	96 555	3.1
2010	95 452	2.9
2011	90 670	2.6
2012	86 816	2.4
2013	84 288	2.3

Sources: Statistics Sweden and the Riksbank

Table AA. Card transactions in payment terminals and ATM withdrawals
Number of transactions in SEK millions and transaction value in SEK billions

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
ATMs										
Number of ATMs	2 716	2 814	2 816	3 085	3 236	3 319	3 351	3 566	3 416	3 237
Number of transactions	324	321	313	320	295	269	241	225	214	236
Transaction value	293	289	270	240	239	232	225	209	193	226
Payment terminals										
Number of ATMs	161 098	176 637	184 590	187 330	194 776	217 760	203 117	209 631	211 388	214 709
Number of transactions	652	801	1 000	1 154	1 358	1 490	1 646	1 799	2 048	2 328
Transaction value	270	312	423	463	488	496	557	598	654	698

Source: The Riksbank

Table AB. Use of various instruments of payment

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Number of transactions, millions										
Cards		970	1 212	1 405	1 650	1 773	1 940	1 982	2 190	2 398
Debit cards	674	777	972	1 107	1 322	1 438	1 558	1 629	1 810	1 987
Credit cards	172	193	240	298	328	335	382	353	380	411
Credit transfers		517	575	651	699	726	768	831	859	894
Electronic	365	430	484	555	605	638	686	756	789	827
Form		87	91	96	94	88	82	75	70	67
Direct debit		160	197	208	229	241	272	289	297	312
Cheques, including money orders	1	1	1	1	1	1	0	0	0	0
Total	1 442	1 648	1 984	2 265	2 579	2 741	2 981	3 103	3 346	3 604
Transaction value, SEK billion										
Cards	479	537	562	651	718	745	783	796	849	900
Debit cards	369	413	432	477	520	540	563	577	617	658
Credit cards	110	124	130	174	198	206	220	219	232	242
Credit transfers	7 204	8 090	8 666	10 020	10 806	10 615	11 528	12 604	13 633	14 175
Electronic	6 732	7 635	8 269	9 674	10 499	10 358	11 315	12 430	13 471	14 024
Form	472	456	397	346	307	257	213	174	162	151
Direct debit	302	344	384	424	452	469	504	543	545	553
Cheques, including money orders	59	55	54	60	69	42	27	30	40	0,2
Total	8 044	9 027	9 666	11 155	12 045	11 871	12 842	13 973	15 067	15 628

Source: The Riksbank

**Table AC. Average value of a card payment
SEK**

2004	567
2005	554
2006	505
2007	464
2008	435
2009	420
2010	404
2011	401
2012	388
2013	375

Source: The Riksbank

**Table AD. Percentage of electronically-initiated debits and transfers
Per cent**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Percentage of transaction value	93.4	94.4	95.4	96.5	97.2	97.6	98.2	98.6	98.8	98.9
Percentage of transaction volume	80.6	83.2	84.2	85.2	86.6	87.9	89.3	91.0	91.9	92.5

Source: The Riksbank

■ Appendix 2. Market conventions in the Swedish fixed income and foreign exchange markets in SEK

A. Conventions in the Swedish bond market

Day count basis: Bonds have 30E/360 days per year, where 30E refers to "End-of-month".

Coupon Frequency: Annual coupon.

Quotations Basis: Prices/interest rates are expressed in decimals.

Trade date: Designated as T0.

Maturities: The designation of the bond indicates the maturity. Common maturities are for example 2, 5 or 10 years. Longer maturities also exist.

Settlement date: Three business days from the trade date (also called T+3). When the maturity of a bond falls below one year the bond is termed a "period bond" (the bond is traded T+2).

B. Conventions in the Swedish money market

Day count basis: Deposits, repo rates, treasury bills and bank, mortgage and Riksbank certificates, actual number of days /360 days per year (Actual/360).

Quotations Basis: Prices/interest rates are expressed in decimals.

Trade date: Designated as T0.

Maturities: Up to 12 months. Common maturities are 1, 3, 6, 9 or 12 months.

Settlement date: Two business days from the trade date (also called T+2).

C. Conventions in the shortest maturity segment of the money market

Day count basis: Deposits and repos and the Riksbank's repos: actual number of days/360 days per year (Actual/360).

Quotations Basis: Prices/interest rates are expressed in decimals.

Trade date: Designated as T0.

Maturities:

O/N (Overnight) = today (T0) to tomorrow (T1).

T/N (Tomorrow/next) = tomorrow (T1) to the day after tomorrow (T2).

S/N (Spot/next) = the day after tomorrow (T2) to the day after (T3).

1w (One week) = the day after tomorrow (T2) and one week thereafter (T2 to T9).

D. Conventions for the foreign exchange market in SEK

Foreign Exchange Quotation:

1 euro = x units SEK.

Quotations Basis: Prices/interest rates are expressed in decimals.

Trade date: Designated as T.

Value date: Two business days from the trade date (also called T+2).

■ Appendix 3. Boxes published in the five latest issues of The Swedish Financial Market

The Swedish Financial Market 2013

Supervision and regulation of the financial sector in Sweden
Riksbank facilities for short-term borrowing and deposit requirements
A new framework for the Swedish reference rate Stibor
Foreign operations – a part of the banking groups
Creating money
Why are banks regulated?
Central regulations in the financial sector
The OTC derivative reform – more robust risk management and increased transparency
Swish – a new mobile payment service
Payment behaviour in Sweden

The Swedish Financial Market 2012

Supervision and regulation of the financial sector in Sweden
Riksbank facilities for short-term borrowing and deposit requirements
Covered bonds in Sweden
The TED spread and the basis spread – different measures of risk
Covered interest rate parity
Foreign operations – a part of the banking groups
The banks' wholesale funding
Central regulations in the financial sector
Central counterparty clearing
Risks in the financial infrastructure
What is the cost of a payment?

The Swedish Financial Market 2011

Supervision and regulation of the financial sector in Sweden
Riksbank facilities for short-term borrowing and deposit requirements
Phase-out of the measures taken by the Riksbank during the financial crisis
Covered bonds in Sweden
The Swedish market for corporate bonds
The TED spread and the basis spread – different measures of risk
Covered interest rate parity

High frequency trading
Foreign operations – a part of the banking groups
The banks' wholesale funding
Central laws in the financial sector
Risks in the financial infrastructure
New payment service laws
The payment behaviour of the Swedes

The Swedish Financial Market 2010

Covered bonds in Sweden
Riksbank facilities for short-term borrowing and deposit requirements
The impact of the Riksbank's extra lending on the balance sheet
RIBA and NOIS – two new derivatives on the fixed-income market
The TED spread and the basis spread – different measures of risk
Covered interest rate parity
Share trading via an electronic system
Foreign operations – a part of the banking groups
Central laws in the financial sector
Risks in the financial infrastructure
SEPA and the Payment Services Directive
TARGET2-Securities – securities settlement on a common European platform

The Swedish Financial Market 2009

Development trends in European equity trading
Share trading via an electronic system
Covered bonds in Sweden
Riksbank facilities for short-term borrowing and deposit requirements
The impact of the Riksbank's extra lending on the balance sheet
TED spread and basis spread – different measures of risk
Covered interest rate parity
Foreign operations – a part of the banking groups
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