



# The Swedish Financial Market

2013

S V E R I G E S   R I K S B A N K





# The Swedish Financial Market

2013

**FOR INFORMATION** about this publication, please contact  
Jenny Mannent, phone +46 8 787 06 89 or  
e-mail: [jenny.mannent@riksbank.se](mailto:jenny.mannent@riksbank.se)

**TO ORDER** the publication, please contact  
Sveriges Riksbank, [Kontorsservicecenter@riksbank.se](mailto:Kontorsservicecenter@riksbank.se)  
Or from the web site: [www.riksbank.com](http://www.riksbank.com)

Production: Sveriges Riksbank

Print: Printfabriken

ISSN 1401-7348

Stockholm 2013

# Contents

- **Foreword** 5
- **Introduction – The roles of the financial system** 6
  - Converting savings into funding 6
  - Managing risks 8
  - Efficient and safe payments 9
  - The interaction of intermediaries, markets and authorities 9
- **The financial markets** 17
  - The fixed-income market 17
    - The money market – for short maturities 18
    - Contract types for the money market's shortest segment 22
    - The bond market 31
    - Issues and the trading structure on the fixed-income market 37
    - The market for interest derivatives 39
  - The foreign exchange market 42
    - Frequently-used instruments in the Swedish foreign exchange market 43
    - Trading structure and turnover 45
  - The stock market 53
    - Issuers 54
    - Investors 54
    - Equity-related derivatives 55
    - Marketplaces 57
    - Trading in shares on NASDAQ OMX Stockholm 58
    - Trade in share-related derivatives 61
    - Share trading on other Swedish marketplaces 62
- **Financial intermediaries** 64
  - Credit institutions 71
    - Banks 71
    - Mortgage institutions 85
    - Other credit market companies 88
  - Private equity investment companies 90
  - Insurance companies, fund management companies and pension funds 91
    - Insurance companies 91
    - Fund management companies 95
    - State-owned pension funds 96
  - Securities institutions 97
    - Securities companies 98
    - Swedish credit institutions that engage in securities trading 98

## ■ **The financial infrastructure 107**

- Different types of payment 107
  - Simple payments 107
  - Payment using an intermediary 107
  - Payment using several intermediaries 108
- Transactions when trading in financial instruments 110
- Transactions in foreign-exchange trading 117
- Retail payments 117
  - Cash and prepaid cards 118
  - Payment instruments: electronic and paper-based 120
  - Payment channels – different ways of making a payment 124
- Systems in the financial infrastructure 130
  - Rix – the system for large-value payments 130
  - Bankgirot – the system for retail payments 131
  - Euroclear Sweden – central securities depository 132
  - NASDAQ OMX DM – central counterparty in derivatives clearing 134
  - EMCF – central counterparty for equities clearing 134
  - CLS – the system for foreign exchange settlement 135
- Payment flows in the Swedish financial infrastructure 136

## ■ **Boxes**

- Supervision and regulation of the financial sector in Sweden 11
- Riksbank facilities for short-term borrowing and deposit requirements 26
- A new framework for the Swedish reference rate Stibor 51
- Foreign operations – a part of the banking groups 67
- Creating money 74
- Why are banks regulated? 80
- Central regulations in the financial sector 100
- The OTC derivative reform – more robust risk management and increased transparency 114
- Swish – a new mobile payment service 126
- Payment behaviour in Sweden 127

## ■ **Appendices**

- Appendix 1. Tables 139
- Appendix 2. Market conventions in the Swedish fixed income and foreign exchange markets in SEK 148
- Appendix 3. Boxes published in the five latest issues of The Swedish Financial Market 150

## ■ **Index 152**

## ■ Foreword

*The Swedish Financial Market* is a description of various roles and functions in the Swedish financial sector. The description is divided into sections on the financial markets, financial intermediaries and the 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 stock market. This provides an account of how trading takes place. In addition, there is a presentation of various marketplaces and the different types of securities traded in these marketplaces, for example shares 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 sector. This distinction is, at times, difficult to make, as the activities of the financial companies are becoming increasingly internationalised. However, the report is based on national statistics compiled annually for Swedish financial legal entities. This provides a natural set of Swedish parameters for the publication.

Stockholm, August 2013

Jenny Mannent  
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 for investments 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.

It 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 had 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 stock market and the credit market. Governments primarily fund their activities on the credit market, for example by issuing bonds, while certain companies can also find capital by turning to the stock market. In terms of value, the significance of the stock 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 smooth their consumption evenly over their lifetime can deposit money in a bank account and withdraw it (plus interest) at a later date. They can also invest their money in shares or debt securities, or in funds on both



Swedish and foreign markets. This in turn means that the banks must to a greater extent 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. But lending does not only originate from deposits and wholesale funding. The commercial banks can also create money for lending. 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*<sup>1</sup>, 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 allocation 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 are the most efficient means of distributing funding. Companies can also turn directly to the capital market. By issuing bonds and other money market instruments, companies can borrow money on the fixed-income market. Funding can be provided even more efficiently by using these standardised securities that can be easily bought and sold on a market.<sup>2</sup> In simple terms, the *issuers* of bonds and other debt instruments 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. This in turn makes it 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.

---

1 For example, asymmetrical information arises when a lender does not have sufficient information to make a rationally-based decision on lending money to a borrower. The borrower knows more about his or her repayment prospects than the lender does.

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

Shares are another common example of standardised securities. Unlike bonds and other fixed-income instruments, shares 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 over time, those who invest in shares normally accept a higher risk than investors in, for example, government bonds. Thus, unlike the fixed-income market, the stock market is therefore 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 where to a great extent they manage money on behalf of others. Unlike companies and households, credit institutions, such as banks, are specialists at assessing credit risks.

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. They can do this by using the products offered by property and liability 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 assurance and pension insurance policies with life assurance 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 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 both to payments between banks and other financial institutions, usually of larger amounts, and to payments between private individuals and/or companies, usually of smaller amounts than those made directly between participants on the financial markets.

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 service. 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 OF INTERMEDIARIES, MARKETS AND AUTHORITIES

It is in the interest of society that the financial markets as a whole function safely and efficiently for private individuals, companies and other market participants. The interaction between intermediaries, markets and the financial infrastructure is fundamental for this. The commercial banks, in their role as intermediaries, are central to the financial system. As banks in Sweden normally obtain funding on the securities market at shorter maturities than they lend, liquidity risks arise as a natural part of their operations. This means that their liabilities fall due more frequently, and must therefore be rolled over more frequently, than their assets. This makes the banks dependent on ongoing access to funding. As a large part of the funding is secured via the financial markets, the banks are also dependent on liquid markets.

*Liquidity shortages* arise on the securities market when the assets become illiquid, that is when the value of the assets traded on the market has become so uncertain that the market participants hesitate to quote prices, and in some cases refrain from doing so. In other words, it becomes problematic to convert securities into liquid funds.

This in turn may lead to funding problems for companies and banks that are dependent on obtaining market funding. Market participants 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 a bank's loan portfolio may therefore make it difficult for the bank to get funding. A bank can reduce its credit risk<sup>3</sup>, and as far as possible ensure that it will get its money back, by choosing its borrowers carefully. However, the 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 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 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 companies and private individuals. Decreasing confidence can make it difficult for the banks to undertake 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 have an important role to play in the financial system in avoiding or, when necessary, managing such situations. One of the Riksbank's main tasks 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. The interaction between various authorities is critical both in this preventive work and in crisis management. 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"). The same applies to international cooperation as financial companies increasingly operate across national borders.

---

<sup>3</sup> Credit risk refers to a borrower becoming insolvent.

---

## Supervision and regulation of the financial sector in Sweden

Companies in the financial sector provide services that are important to the functioning and growth of the economy and thereby support the financial system's basic functions. If the financial companies encounter problems, such as during a financial crisis, this can impact the entire economy. For example, it can become more difficult to get credit, which can impact companies' propensity to invest and lead to increased unemployment. The stability of a country's financial system is thus important, which justifies the special regulation of the financial system. 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 regulations, laws and statutes and that thus have ultimate responsibility for the financial system. However, responsibility for safeguarding financial stability and maintaining an effective financial system has been divided between three authorities: the Riksbank, the Swedish National Debt Office and Finansinspektionen (the Financial Supervisory Authority). The allocation of responsibility means that the Riksbank is responsible for providing liquidity in the system. Finansinspektionen is responsible for the supervision of the financial companies, while the Swedish National Debt Office, together with the Government Offices, bears responsibility for more long-term forms of support (read more about the Government Support to Credit Institutions Act in the box "Central regulations in the financial sector").

Even if the authorities have different areas of responsibility, they must cooperate to be able

to efficiently promote financial stability. Since 2012, the Riksbank and Finansinspektionen have formalised this cooperation into a council for cooperation on macroprudential policy. At the council, authorities will continually consult and exchange information on the assessment of risks to the financial system as a whole, and will discuss appropriate measures for the prevention of risks.<sup>4</sup> In 2013, a commission of inquiry<sup>5</sup> submitted a proposal for the setting up of a council for macroprudential policy in Sweden. If this proposal becomes a reality, the council for cooperation will be confirmed by law and also supplemented with independent experts and an observer from the Ministry of Finance. However, no decision has been taken on this yet.

The Riksbank and Finansinspektionen, together with the Government Offices (mainly the Ministry of Finance) and the Swedish National Debt Office, also play an important role in managing financial crises. There is an agreement between

these authorities governing their cooperation on stability and crisis-management issues and an arrangement for consultation in a so-called stability council. The cooperation between authorities in Sweden is described by a written agreement known as a Memorandum of Understanding.<sup>6</sup>

The increasing globalisation of the financial markets and of the participants on these markets also creates the need for strong coordination with authorities in other countries with regard to the oversight and supervision of financial operations. Among other organisations, Swedish authorities participate in the European Systemic Risk Board (ESRB) and the European Banking Authority (EBA). The ESRB's task is to identify risks to the stability of the EU's financial system and to issue warnings and recommendations on serious risks.<sup>7</sup> The EBA is to promote a uniform application of the regulations in the member states and coordination of the national financial supervisory authorities.<sup>8</sup>

4 More information on the work of the council can be found at [www.riksbank.se](http://www.riksbank.se).

5 Financial Crisis Committee, SOU 2013:6 *Att förebygga och hantera finansiella kriser* (Preventing and managing financial crises) (only in Swedish).

6 This agreement is available at [www.riksbank.se](http://www.riksbank.se).

7 More information on the ESRB can be found at [www.riksbank.se](http://www.riksbank.se) and [www.esrb.europa.eu](http://www.esrb.europa.eu).

8 More information on the EBA can be found at [www.eba.europa.eu](http://www.eba.europa.eu).

### *The Riksbank*

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 to the Sveriges Riksbank Act, the Riksbank shall 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 supplying 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 in the financial system so that the payment system can continue to function even in such situations.<sup>9</sup> The Riksbank plays a special role in this as Sweden's central bank, because it can quickly supply money to the financial system if the need arises.<sup>10</sup>

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 on preventing 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

<sup>9</sup> The Riksbank's role and tasks in the work of promoting financial stability are described in the document *The Riksbank and financial stability*, at [www.riksbank.se](http://www.riksbank.se).

<sup>10</sup> This is what is meant by the term lender of last resort.

the attention of banks and other participants on the financial markets to risks and efficiency losses that the Riksbank has identified. However, in this work, the Riksbank has no binding tools to influence participants in the financial system.

The Riksbank instead acts to exert influence by engaging in a public dialogue, for example by publishing its Financial Stability Report twice a year and its 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*

Finansinspektionen is an authority that supervises financial

companies and marketplaces. This form of supervision, which focuses on individual financial institutions, is usually called micro supervision. The overall tasks and objectives of Finansinspektionen are to promote stability and efficiency in the financial system and consumer protection in the financial area. Among other means, it does this by issuing licences or permits, conducting supervision and issuing regulations.

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* means that Finansinspektionen exercises supervision to ensure that the companies that conduct financial operations or provide elements of the financial infrastructure comply with the special regulations that 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.

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.

Finansinspektionen, like the Riksbank, also has the task of regularly monitoring and analysing developments in the financial sector in order to be able to identify risks at an early stage. Finansinspektionen's supervision provides the authority with information on the development of individual companies and thus on the financial sector as a whole.

#### *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 Government 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 government 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 system. Without a deposit guarantee, there is a risk that, in times of financial unease or when a bank is rumoured to have economic problems, bank customers will withdraw their savings to avoid losing these in the event that the bank should be declared 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 the support authority under the Government 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 stock market. Nowadays, Swedish banks and companies operate to a great extent on global financial markets, but in this chapter we only describe 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 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*. Considerably fewer transactions are conducted on the fixed-income market than on the stock market, but they usually involve much larger amounts.

The fixed-income market is often divided into a *money market* and a *bond market*. The bond market comprises trade in securities – 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 in the various submarkets 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 in the spot market, *derivative instruments*<sup>11</sup> 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 maturities of 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.

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 existing on the markets as well as the turnover of various securities. Contract types for the money market's shortest segment are also examined, as it becomes less practical to use normal securities when maturities approach one week or 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 for interest-bearing assets that are usually issued with maturities of up to one year. 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. The total stock of money market instruments issued decreased significantly between 2008 and 2012. The value of these decreased by more than 40 per cent in this period. However, an increase has taken place over the last two years. In 2012, the value

---

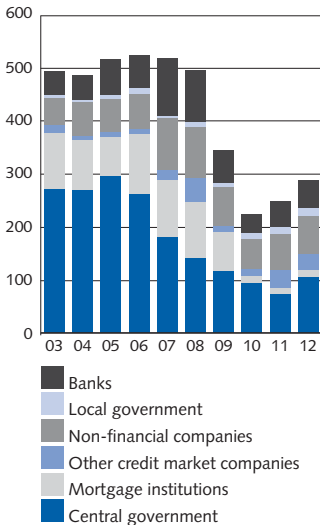
<sup>11</sup> Derivative instruments are contracts that are linked to various securities as underlying assets, and that are entered into (and traded) by the participants in the secondary market. The most common derivative instruments traded on the fixed income market include interest forwards, interest options and interest swaps.

of the total stock of securities increased by just over SEK 40 billion, amounting to SEK 285 billion at the end of the year (see Chart 1).

A *treasury bill*<sup>12</sup> 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. Treasury bills' previous dominant position in the money market has successively declined, as the government's issue of treasury bills has declined in tandem with the fall in the government's borrowing requirement in recent years. Borrowing at longer maturities through bonds has been given priority ahead of the issue of treasury bills.<sup>13</sup> However, in 2012, the government budget swung to a deficit after the previous year's surplus, which led to a greater net borrowing requirement in treasury bills. At the end of 2012, treasury bills accounted for slightly less than 40 per cent of the outstanding stock of short-term securities. However, the outstanding volume increased by about SEK 30 billion during 2012 and amounted to approximately SEK 105 billion at the end of the year.

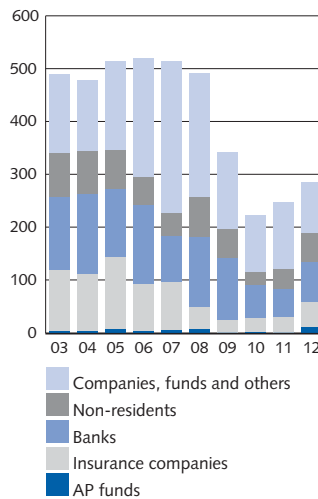
A *certificate* is the same kind of debt instrument as a treasury bill

**Chart 1. Outstanding volumes on the money market, per issuer SEK billion**



Sources: Statistics Sweden and the Riksbank

**Chart 2. Investors on the money market, per issuer SEK billion**



Sources: The AP funds, Statistics Sweden and the Riksbank

<sup>12</sup> The treasury bill is constructed as a zero-coupon bond, i.e. a security without interest payments during the term of the bill.

<sup>13</sup> 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.

but is issued by mortgage institutions and companies, for example. The primary aim of the mortgage institutions' short-term borrowing is to fund lending to their customers.<sup>14</sup> Banks and mortgage institutions have also issued a greater proportion of long-term securities than previously, at the expense of borrowing over the shorter term. Several international and national regulations have started to demand funding at longer maturities, a situation for which these participants are preparing.<sup>15</sup> Moreover, the mortgage institutions are matching their long-term lending with long-term borrowing to a greater extent than previously. The financial risk is reduced when liabilities and assets have the same maturity.

The short-term borrowing of the mortgage institutions via certificates issued in Swedish kronor amounted to just over SEK 12 billion at year-end 2012. Borrowing has thus increased for two years in a row, but, compared with the situation prior to the financial crisis, the outstanding volumes are small. The banks' short-term borrowing in certificates issued in Swedish kronor increased slightly in 2012 to SEK 51 billion.

From September 2010, it became possible to discern issues of mortgage certificates on Swedish and foreign markets in the statistics.<sup>16</sup> The mortgage institutions have not reported any issues of mortgage certificates in Swedish kronor on foreign markets, but they have reported issues in foreign currency on these markets.

Non-financial companies' borrowing amounted to SEK 73 billion at year-end 2012, which represents an increase of SEK 5 billion. The borrowing volume for "other credit market companies" also increased by SEK 5 billion to SEK 29 billion by year-end. In recent years, municipalities have slowly increased their borrowing volume to SEK 15 billion at year-end 2012.

#### *Investors on the money market in Sweden*

Swedish banks, insurance companies and funds form the largest categories of investors in the money market (see Chart 2). The

---

14 The mortgage institutions' borrowing via certificates is relatively small, however, in relation to their short-term fixed-rate lending. In order to match the fixed-rate periods of mortgage institutions' funding and their lending to households, the institutions issue bonds and subsequently enter into swap contracts to obtain short-term interest bonds. Mortgage institutions also borrow from their parent banks. For further information, see the description of swap contracts in the sections "The market for interest derivatives" and "Frequently-used instruments in the Swedish foreign exchange market".

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

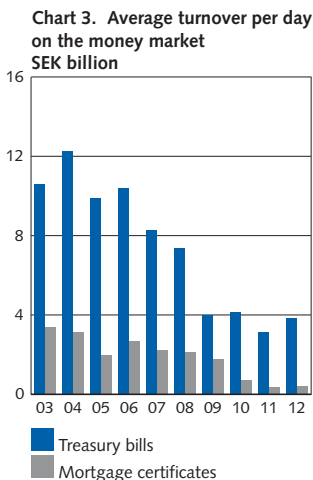
16 See financial market statistics, [www.scb.se](http://www.scb.se).

category “Companies, funds and others”<sup>17</sup> together has the greatest holding on the money market and controlled over one-third of the outstanding stock at year-end 2012. The banks’ holdings of short-term fixed-income securities constituted about one-quarter of the total money market at the same date, while the insurance companies’ holdings corresponded to about 17 per cent of the market.

Foreign investors accounted for about 20 per cent of the market’s total volume at year-end 2012. Over the last decade, the AP funds have had very low volumes of short-term fixed income securities.<sup>18</sup> No investments whatsoever were made on the money market in 2011, but holdings amounted to slightly less than 4 per cent of the total volume of short-term fixed income securities at year-end 2012.

### *Low turnover on the money market*

From a historical perspective, turnover on the money market continued to be low in 2012. According to statistics from the Riksbank’s primary monetary policy counterparties<sup>19</sup>, turnover in mortgage certificates issued in Swedish kronor increased by SEK 30 million per day in 2012, compared with 2011. On average, turnover was SEK 400 million per day in 2012. At the same time, turnover in treasury bills increased by SEK 700 million per day to SEK 3.8 billion per day (see Chart 3). The



17 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.

18 More information about the AP funds is available in the section on state-owned pension funds in the chapter “Financial intermediaries”.

19 More information about the Riksbank’s counterparties is available at [www.riksbank.com](http://www.riksbank.com).

turnover of treasury bills and mortgage certificates was low in relation to the total spot turnover of government and mortgage securities, and constituted an average of 12 per cent of turnover in 2012. In addition, this proportion has decreased over time. During the period 2000-2008, turnover of treasury bills and mortgage certificates was 20 per cent or more of total spot turnover.

#### CONTRACT TYPES FOR THE MONEY MARKET'S SHORTEST SEGMENT

Ordinary securities are less practical when maturities in the money market are reduced to a week or even less, where the very shortest market segment is the overnight market. Other contract solutions are used instead, such as *deposit contracts (deposits)* and *repurchase agreements (repos)*. These standardised contracts offer the participants greater flexibility in borrowing or investing at the shortest periods of maturity.

##### *Deposits*

*Deposit contracts* are standardised deposit and loan agreements without requirements for underlying collateral. Normally, market participants do not use deposit contracts for depositing and lending for longer than a week. This is because the counterparty limits<sup>20</sup> and capital adequacy requirements<sup>21</sup> make this form of placement relatively more expensive than other financial contracts with longer maturities.<sup>22</sup> Deposit contracts are instead used to even out the need for liquidity between the banks overnight. The banks have, quite simply, agreed to assist each other with liquidity, for which they normally pay the overnight rate, which is close to the repo rate. Nearly all of the turnover in deposit contracts relates to transactions with very short maturities.<sup>23</sup> In 2012, the Swedish institutions designated by Statistics Sweden as Monetary Financial Institutions<sup>24</sup> had average outstanding deposit volumes in the form of deposit contracts of SEK 133 billion at the end

---

20 The amount a bank can lend to its counterparties is determined by the bank's own limits, 'counterparty limits'.

21 More information about capital adequacy requirements can be found in the article "Central regulations in the finance sector" in the chapter *Financial Intermediaries*.

22 See the article entitled "*The Swedish Market for Balancing Liquidity*" in Sveriges Riksbank Economic Review 2005:4.

23 Before the financial crisis, the major banks estimated that around 90 per cent of the turnover on deposit contracts involved maturities of up to two days. See the article entitled "*The Swedish Market for Balancing Liquidity*" in Sveriges Riksbank Economic Review 2005:4.

24 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).



of each month. The major share of this amount, that is an average of SEK 121 billion, came from deposits from Swedish monetary financial institutions. Only a minor part of the deposits thus originated from foreign institutions.<sup>25</sup>

### *Repos*

A *repo* is an agreement in which one party agrees to sell a security to another party in return for liquid funds.<sup>26</sup> At the same time, the parties also agree that the same security will be repurchased at a predetermined price at a certain 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 over 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 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 transferred to the lender, hence repos entail minimal counterparty risk<sup>27</sup> for the lender. In principle, all securities that can be traded on the fixed income market can be used as collateral for repos.

The turnover in repo transactions among the Riksbank's primary monetary policy counterparties and the National Debt Office's dealers increased slightly between 2011 and 2012, following a fall during the financial crisis (see Chart 4). In 2012, turnover was about SEK 124 billion per day. Almost all of this turnover is in repos with maturities of up to one week. The turnover in repos was slightly more than four times as high as the spot turnover in the underlying government and mortgage securities.<sup>28</sup> According to the statistics compiled by the Riksbank, spot turnover in these underlying securities amounted to about SEK 34 billion in 2012 (see the section "Turnover on the bond market").

---

<sup>25</sup> 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).

<sup>26</sup> There are also reverse repos. For example, the Swedish National Debt Office conducted reverse repos during the financial crisis when the banks were given the opportunity to borrow liquid funds from the National Debt Office with mortgage bonds as collateral.

<sup>27</sup> Counterparty risk refers to the risk that a business transaction cannot be completed.

<sup>28</sup> These figures include treasury bills, nominal government bonds, mortgage certificates and mortgage bonds. Inflation-linked government bonds are not included in these figures.

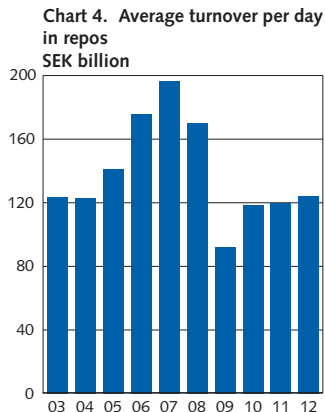
The main reason for the high turnover in repos is that they offer investors a quick and efficient way of getting access to capital. Bond dealers can fund their securities portfolios via the repo market. They can also acquire securities quickly in order to meet their obligations under their dealer agreements.

Another reason for the high turnover in repos is that the repo market makes it possible for foreign participants to own Swedish securities without taking a currency risk. The use of repos allows the currency risk to be sold at the same time as the investor retains his or her interest investment via the underlying security that forms the collateral for the loan.

According to Statistics Sweden's financial market statistics, the outstanding volume of repo borrowing by the monetary financial institutions at the end of each month averaged around SEK 138 billion in 2012. Slightly more than SEK 98 billion of this amount came from repo borrowing by Swedish monetary financial institutions.<sup>29</sup>

#### *The overnight market*

The overnight market is the shortest maturity on the money market with overnight deposits and lending. On the overnight market, the banks balance liquidity at a price close to the Riksbank's repo rate.<sup>30</sup>



Source: The Riksbank

<sup>29</sup> The special conventions used in trading in the money market's short-term contracts are presented in Appendix 2 on market conventions.

<sup>30</sup> 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 from business transactions by customers and transfers in foreign exchange and securities portfolios by portfolio managers or other financial market players.

The repo rate also influences Stibor<sup>31</sup>, which is a reference rate for trade in Swedish kronor. This reference rate is described in more detail in the article “A new framework for the Swedish reference rate Stibor”. A reference rate for loans on the interbank market is also published every day for several currency areas for maturities of up to one year. For example, the reference rate for the British pound and the US dollar is the Libor (London Interbank Offered Rate), while the most common reference rate for the euro is the Euribor (Euro Interbank Offered Rate).

The Riksbank can also provide deposit and lending facilities for the money market’s shortest segment, but the interest conditions for these are less beneficial for the market players. In addition, only those participants in the Riksbank’s central payment system RIX<sup>32</sup> who have a monetary policy counterparty agreement with the Riksbank may take advantage of the possibility of depositing money with or borrowing money from the Riksbank at short maturities. The Riksbank’s interest-bearing instruments and the counterparties that may use them are described in more detail in the box “Riksbank facilities for short-term borrowing and deposit requirements”.

---

31 Stibor stands for Stockholm Interbank Offered Rate.

32 See the section on RIX in the chapter *The financial infrastructure*.

## Riksbank facilities for short-term borrowing and deposit requirements

The Riksbank offers facilities for depositing or borrowing money at short maturities with the aim of governing short-term interest rates. The players who can take advantage of these participate in the Riksbank's central payment system RIX or have some form of monetary policy counterparty agreement with the Riksbank. The Riksbank's counterparties in the fixed-income market mainly comprise RIX participants, monetary policy counterparties and primary monetary policy counterparties.<sup>33</sup> At year-end 2012, the Riksbank had 25 RIX participants, 17 of whom were also monetary policy counterparties. Of these RIX participants, five were also already primary monetary policy counterparties. In 2012, one new participant was added to this narrower counterparty category.

Depending on the level of the counterparty agreement signed with the Riksbank, short-term lending and deposit facilities

may take the form of intraday facilities, fine-tuning transactions, standing facilities, monetary policy repos or Riksbank certificates. RIX participants have access to the Riksbank's intraday facilities. A RIX participant that is also a monetary policy counterparty may purchase Riksbank certificates and participate in monetary policy repos. It may also use the Riksbank's standing facilities and participate in the fine-tuning transactions that adjust liquidity in the banking system.<sup>34</sup> Banks not participating in RIX or players who are RIX participants but not credit institutions must use the Riksbank's monetary policy counterparties to deposit deficits or surpluses with the Riksbank.

### *Intraday facilities (intraday credits)*

As a central bank, the Riksbank helps to ensure that payments between banks can be made efficiently and without delay.

<sup>33</sup> On 2 April 2009, the Riksbank also introduced the counterparty category "restricted monetary policy counterparties", who may participate in certain of the Riksbank's monetary policy transactions. For example, this counterparty category was given the possibility of receiving loans in Swedish kronor during the financial crisis. More information about the Riksbank's counterparties is available at [www.riksbank.com](http://www.riksbank.com).

<sup>34</sup> Since 8 October 2008, all monetary policy counterparties may participate in the fine-tuning transactions, according to an interim decision. Prior to this, only primary monetary policy counterparties were allowed to participate in these transactions.

Banks participating in RIX are therefore able to borrow interest-free from the Riksbank during the day against collateral in securities. A loan of this type is called an intraday credit. The value of the collateral after any haircuts sets the ceiling for the loan, which is to say the maximum limit for the amount of credit the counterparty may be granted by the Riksbank during the day.

Intraday credits are the fastest way of acquiring liquidity, as long as there is sufficient collateral. The credit is provided more or less instantaneously. The facility is needed mainly from when RIX opens until the early afternoon, which is when it becomes clear what surpluses and deficits the banks have in their transaction accounts. Banks with liquidity deficits at the end of the day fund this overnight in some way (see below). When there is a liquidity surplus, this must instead be deposited. The banks can either even out their surplus or 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.

### *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 close to and stable around the repo rate. The overnight rate 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.<sup>35</sup>

The Riksbank only carries out fine-tuning transactions in 'one direction'. This means that when the banking system has a liquidity surplus at the end of the day, the Riksbank will not lend to an individual bank with a deficit in the fine-tuning

<sup>35</sup> See, for example, the brochure *The Riksbank's Management of Interest Rates – Monetary Policy in Practice*, Sveriges Riksbank 2005.

transactions. Instead, this bank must even out its deficit with a bank that has a corresponding surplus on the overnight market or borrow from the Riksbank using the standing facilities. If the banking system, as a whole, has a liquidity deficit, only lending is conducted in the fine-tuning transactions. To regulate the liquidity in the banking system, the Riksbank can issue certificates or implement monetary policy repos with a maturity of seven days and a fixed interest rate equivalent to the repo rate. The extent of the weekly measures is based on forecasts for liquidity in the banking system. At the same time, the Riksbank in practice sets the conditions governing the overnight market.<sup>36</sup>

#### *Riksbank Certificates*

Since October 2008, the banking system has had a structural liquidity surplus.<sup>37</sup> In 2012,

the Riksbank offered the banks the opportunity to purchase certificates for an average of about SEK 28 billion per week, but certificates were only issued on three occasions, for SEK 3-5 billion.<sup>38</sup> Since the Riksbank's last large fixed-rate loan of the financial crisis to the banks matured on 6 October 2010, they have had no interest in investing in certificates.<sup>39</sup> The reason for this is that they have wanted to have access to their liquidity surpluses for a maturity shorter than seven days. The banks have instead invested their entire surplus in the fine-tuning transactions.

#### *Fine-tuning transactions*

Since October 2008, there has been too much liquidity in the banking system as a whole, which means that some of the commercial banks have a surplus of liquidity at the end of the day. The part of this surplus that is not

<sup>36</sup> More information on the overnight market may be found in the articles *The Swedish market for balancing liquidity*, Sveriges Riksbank Economic Review 2005:4, and *The Swedish market for balancing liquidity between the banks overnight 2007-2010*, Sveriges Riksbank Economic Review 2011:1.

<sup>37</sup> Normally, the level of liquidity in the banking system depends primarily on changes in the stock of banknotes and coins in circulation. The Riksbank's annual transfers to the Treasury have contributed to an increase of liquidity in the banking system. However, between October 2008 and the autumn of 2010, the size of the banks' loans with the Riksbank determined the level of liquidity in the banking system. More information about the banking system's structural liquidity surplus can be found in the article "*The framework for the implementation of monetary policy, the Riksbank's balance sheet and the financial crisis*" in Economic Commentary 2011:1. Sveriges Riksbank.

<sup>38</sup> Until October 2008, the Riksbank used monetary policy repos to supply the banking system with liquidity. Up until this point, the banking system had had a structural deficit of liquidity.

<sup>39</sup> More information on the Riksbank's extraordinary measures can be found in the article "*The Riksbank's monetary policy measures during the financial crisis – Evaluation and lessons learnt*", Sveriges Riksbank Economic Review 2012:3.

invested in Riksbank certificates is evened out in the Riksbank's fine-tuning transactions.<sup>40</sup> These transactions entail the banks depositing their surpluses with the Riksbank overnight. The counterparties that deposit their surpluses with the Riksbank receive the repo rate minus ten basis points.

In 2012, an average of SEK 28 billion was deposited in the fine-tuning operations, which corresponds to the entire liquidity surplus in the banking system (see Chart 5). It thus follows that if all or parts of the liquidity surplus had been invested in Riksbank certificates, the overnight deposits would 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 ten basis points.

#### *Standing facilities*

Nevertheless, it may happen that the transaction accounts of

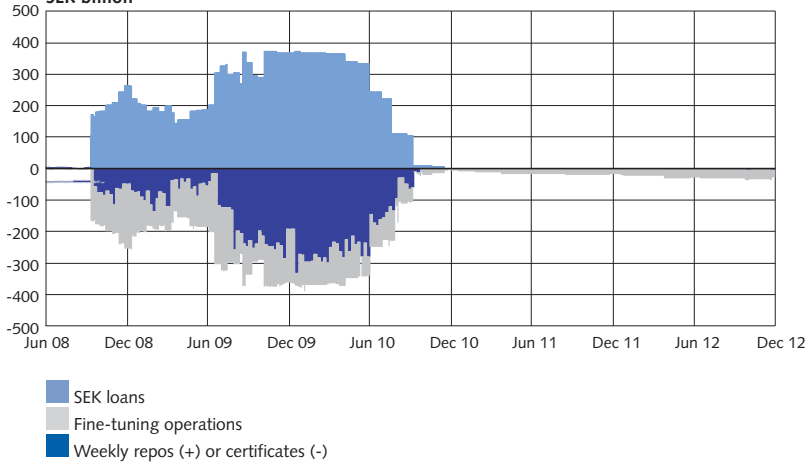
individual banks at the Riksbank are not balanced when RIX closes. A credit institution that then has a negative balance on its RIX account at RIX's closing time is considered to have asked for credit under the standing facilities. A credit institution that, in contrast, has a positive balance is considered to have asked to make a deposit under the standing facilities. Deposits and lending under the standing facilities run from the time RIX closes until the system opens on the following banking day.

Much smaller amounts are handled by the standing facilities than by the fine-tuning transactions. This is because, 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.<sup>41</sup> During 2012, the average deposit in the Riksbank via the standing facilities amounted to approximately SEK 93 million per day.

<sup>40</sup> Prior to October 2008, the amounts involved in these transactions were small in relation to the weekly monetary policy repo transactions, hence the name 'fine-tuning transactions'.

<sup>41</sup> Between 22 April 2009 and 6 July 2010, the deposit and lending rates in the standing facilities were equivalent to the repo rate +/- 50 basis points respectively.

**Chart 5. The Riksbank's deposits and lending in Swedish kronor  
SEK billion**



Source: The Riksbank



## THE BOND MARKET

The bond market brings together managers of long-term savings with those that need to borrow capital for longer maturities. The issuers are the same as on the money market, that is mainly the central government and the mortgage institutions. Companies and municipalities may also issue bonds. Bond issues often relate to a long-term funding requirement and trading takes place in debt securities – bonds – with maturities of one year and longer.

The bond market is much larger than the money market. In 2012, 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 2 764 billion.

A bond is a debt instrument in the form of an agreement to lend money that is subsequently repaid with interest. A bond with several part payments<sup>42</sup> (coupons) over its term is known as a coupon bond. 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.

The bond market can be divided into a primary market for new bond issues, and a second-hand or secondary market where investors can buy and sell bonds that have already been issued. A sale in the primary market provides capital directly to the issuer of the bond. Thus, the issuer is a borrower in the market.

Investors who have bought bonds at issue can choose to resell them in the second-hand market. On an effective second-hand market, it is easy to buy and sell various securities. This leads to these bonds also becoming more attractive for investors on the primary market. A high demand for bonds on the primary market in turn reduces the borrowing costs of the issuers as it means that the interest rate will be lower.

Bonds are also used in so-called repo transactions, in which the holder can acquire liquidity by lending the bonds. The market for these repo transactions is larger than that for spot transactions in the same securities (see the section on repos).

---

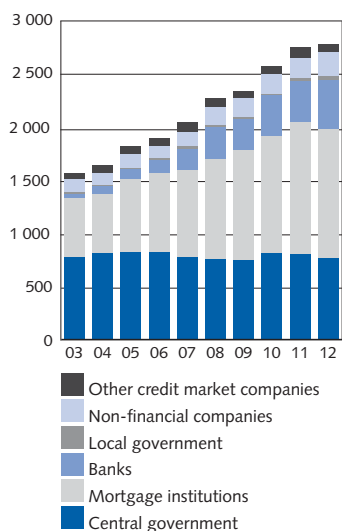
42 The part payments are payments of interest.

### Issuers on the bond market in Sweden

Volumes on the bond market in Sweden have successively increased over the years and amounted to SEK 2 764 billion at year-end 2012, which was about SEK 30 billion more than 12 months previously (see Chart 6). The largest issuers on the Swedish bond market are the central government and the mortgage institutions. They represent slightly less than 30 and 45 per cent respectively of the total volume of bonds in Swedish kronor. The term Swedish bond market refers to the market for bonds issued by Swedish issuers in Swedish kronor. Swedish participants can also turn to the international markets to gain access to capital. Issues are then conducted in other currencies.<sup>43</sup>

Central government borrowing is used to fund the central government loan requirement.<sup>44</sup> The outstanding stock of government bonds amounted, at the end of 2012, to SEK 761 billion (see Chart 6). The government's borrowing on the bond market thus continues to be high, despite the fact that the borrowing requirement has decreased in recent years. This is explained by the Swedish National Debt Office's

**Chart 6. Outstanding volumes on the bond market, per issuer SEK billion**



Sources: Statistics Sweden and the Riksbank

43 It is primarily the banking sector that secures funding in foreign currencies. As a rule, issues conducted in other currencies are converted into SEK via derivatives, primarily currency swaps. For more information on this, see, for example, the article on covered interest rate parity in *The Swedish Financial Market 2012*, Sveriges Riksbank. Balance of payment statistics from Statistics Sweden showed that the volume issued in foreign currencies and held abroad amounted to slightly less than half of the total lending volume at the end of 2012.

44 The Swedish National Debt Office manages central government borrowing on the bond market.

borrowing strategy. In order to offer investors good liquidity in Swedish government bonds, a large stock of bonds is maintained at the expense of borrowing in treasury bills and loans in foreign currencies. The Swedish National Debt Office can use what are known as interest rate swaps to ensure that it can still meet its target of a certain average maturity for the central government debt. The same principle applies to borrowing in foreign currencies. To achieve the target of a certain currency exposure, despite extensive borrowing in Swedish kronor, the Swedish National Debt Office can instead use currency swaps.

The mortgage institutions primarily issue bonds to fund the loans (mortgages) provided to Swedish households in connection with the purchase of housing. Their total borrowing in 2012 decreased by around SEK 37 billion, to SEK 1 204 billion by year-end. However, seen over a longer term perspective, the mortgage institutions' borrowing in the form of bonds has increased, which is due to households' increased borrowing for housing.

It has become increasingly important for the mortgage institutions not to fund their operations at too short maturities after the financial crisis. Extending maturities on borrowing leads to a reduction of the financial risks associated with the renewal of short-term borrowing so that the mortgage institutions can fund long-term lending to households. The entire stock of mortgage bonds in Swedish kronor consists of so-called covered bonds.<sup>45</sup> Covered bonds provide the holder with the right to a specific Cover Pool if the issuer should be declared bankrupt.<sup>46</sup> Seven Swedish banks or their mortgage institutions have permits from Finansinspektionen to issue covered bonds.<sup>47</sup> According to Statistics Sweden's financial market statistics, the outstanding volume was SEK 1 928 billion at year-end 2012.

The mortgage institutions continually issue bonds on the Swedish market for covered bonds under the terms and conditions that apply to the respective bond loans. This means that bonds with the same maturity and coupon rates are continually being issued. This issuing procedure is known as on-tap and also occurs in other countries, for example Denmark. The market for covered bonds is important to the Swedish banks' long-term wholesale funding. About 60 per cent of this funding is primarily comprised of Swedish covered bonds.

---

45 On 1 July 2013, Finansinspektionen introduced new regulations for covered bonds. See [www.fi.se](http://www.fi.se).

46 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 article on covered bonds in *The Swedish Financial Market 2012*, Sveriges Riksbank.

47 The seven institutions are Landshypotek, Länsförsäkringar hypotek, Nordea hypotek, SBAB, SEB, Stadshypotek and Swedbank.

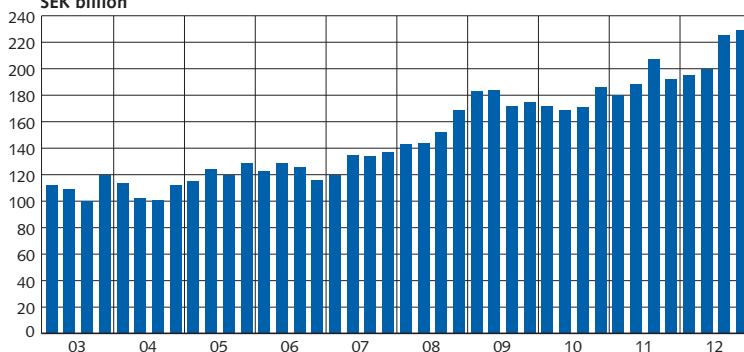
The banks' borrowing on the bond market increased by about 20 per cent in 2012, compared with 2011. The outstanding volume amounted to SEK 460 billion at the end of the year (see Chart 6).<sup>48</sup>

Non-financial companies, for example industrial enterprises, may also raise capital by issuing bonds. At year-end 2012, their borrowing in the Swedish bond market totalled just over SEK 230 billion (see Chart 7). This was an increase of almost SEK 40 billion compared with the previous year.

After the financial crisis, companies increasingly started to look for other sources of funding than just straightforward bank loans. However, bank loans remain their primary loan-based source of funding. Among other reasons, this is because, to arouse interest among investors, larger amounts are often required to issue bonds on the market than small and medium-sized companies need. In addition, relatively few small and medium-sized Swedish companies have credit ratings, which makes it difficult for investors to assess the credit risks of these companies. The market is thus dominated by a few large, well-established companies, such as TeliaSonera, Volvo, Vattenfall and Vasakronan. However, several medium-sized companies have chosen to issue corporate bonds in recent years.

Municipalities and county councils may also use bonds to fund their operations and investments. However, only a smaller number of municipalities and county councils had outstanding listed bond loans in

**Chart 7. Outstanding volumes on the corporate bond market, issued by non-financial companies**  
SEK billion



Source: Statistics Sweden

<sup>48</sup> SBAB's parent company is now included in the category Banks, instead of in the category Mortgage Institutions. A similar re-classification took place in 2007 when SEB Bolån was merged with SEB. Since then all bonds, including mortgage bonds, belong to the sector banks.

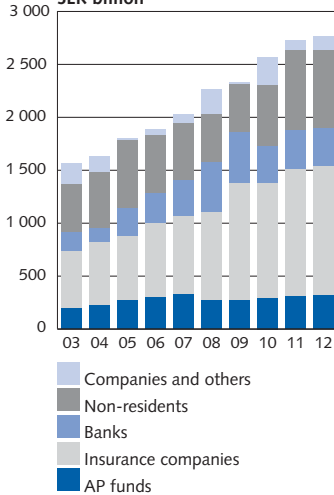
their own name at year-end 2012.<sup>49</sup> At year-end, their total borrowing amounted to approximately SEK 20.3 billion.

The other municipalities and county councils, 274 in total, had outstanding bonds loans in association with Kommuninvest, a credit market company.<sup>50</sup> Kommuninvest increased its lending to member municipalities from SEK 168 billion in 2011 to SEK 201 billion at year-end 2012. In order to fund its lending, Kommuninvest issues bonds in Swedish kronor. Kommuninvest is included in the category “Other credit market companies” in Chart 6. The outstanding amount of issued bonds for this category totalled SEK 70 billion at year-end 2012.

#### *Investors on the bond market*

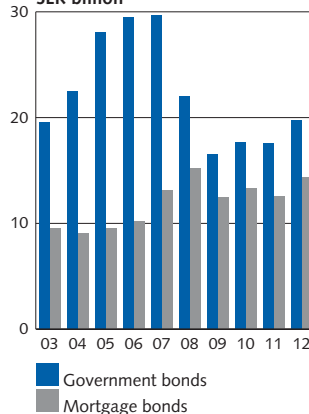
At year-end 2012, insurance companies were the category of investors with the largest holding in SEK in the bond market. They accounted for 44 per cent of the holdings, which corresponds to SEK 1 219 at year-end 2011 (see Chart 8). The banks' bond holdings amounted to SEK 367 billion at the same date.

**Chart 8. Investors on the bond market**  
SEK billion



Sources: The AP funds, Statistics Sweden and the Riksbank

**Chart 9. Average turnover per day on the bond market**  
SEK billion



Source: The Riksbank

49 These municipalities and county councils are the City of Helsingborg, Lund Municipality, Norrköping Municipality, Stockholm County Council, the City of Stockholm, Sundsvall Municipality, Södertälje Municipality, Täby Municipality, Uppsala Municipality, the City of Västerås and Örebro Municipality.

50 Credit market companies are finance companies that fund their activities with money from the public. These companies are under the supervision of Finansinspektionen (the Swedish Financial Supervisory Authority) and are covered by the deposit guarantee scheme. More information is available at [www.fi.se](http://www.fi.se).

In 2012, foreign investors<sup>51</sup> reduced their holdings on the bond market by SEK 30 billion, to SEK 732 billion by year-end. This is probably because foreign investors have chosen to reallocate their securities investments from Sweden to other markets now that the market unease abroad has diminished. The macroeconomic development in Sweden and Sweden's stable public finances helped to increase their interest in Swedish bonds over the years 2010-2012.

Companies and others<sup>52</sup> increased their bond holdings by almost SEK 40 billion in 2012, following a substantial reduction in the previous year. This category had invested about SEK 130 billion in bonds at year-end 2012.

The Swedish bond holdings of the AP funds increased to SEK 315 billion in 2012.

#### *Turnover on the bond market*

At year-end 2012, the total average daily turnover in government and mortgage bonds was about SEK 34 billion, according to statistics from the Riksbank's primary monetary policy counterparties. This means that SEK 4 billion more of these securities was bought and sold every day, compared with 2011 (see Chart 9).<sup>53</sup> However, the level of 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 and amounted to about SEK 14 billion per day in 2012.

The main explanation for the fall in the turnover in bonds is that many investors chose to retain primarily government bonds in their portfolio holdings during the financial crisis. This is because, in times of financial unease, investors tend to retain safe investments such as government securities.<sup>54</sup>

Government bonds are primarily bought and sold on the secondary market. In 2012, over 98 per cent of all the transactions in government bonds were conducted on the secondary market, while less than two per cent took place on the primary market, that is in the form of issues.

---

51 There are no further details on the type of foreign investor contained in 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.

52 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.

53 The statistics compiled by the Riksbank cover approximately 60 per cent of the turnover in repos at monetary financial institutions.

54 The phenomenon of increased investments in securities issued by central governments during periods of uncertainty is also commonly known as 'flight to quality'.

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). 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 of these bonds 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, there are seven or eight such dealers, depending on the kind of security to be auctioned. 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 in already existing loans on an ongoing basis, 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. The maturity dates usually coincide with existing maturities in treasury bills.

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.

Companies often have agreements with one or more banks on borrowing programmes, in which they issue bonds and certificates on specific predetermined terms. As mentioned earlier, companies and banks also issue securities abroad and then convert the loans into SEK with the aid of 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. It has become increasingly common for companies to opt for this form of bond borrowing.

#### *Trading structure*

The fixed-income market has an active second-hand market. Government bonds are the type of debt security that has the highest turnover. Turnover is high because these bonds are issued in large volumes and are exposed to low credit risk.<sup>55</sup> Mortgage bonds also have a relatively good second-hand turnover. Corporate bonds, on the other hand, are usually retained by investors until maturity to a greater extent, resulting in a lower turnover on the second-hand market. Securities in the money market, treasury bills and other certificates are also retained in the portfolio for their entire terms to a greater extent.

Trading in government bonds takes place by telephone or electronically. Just now, electronic trading covers three so-called benchmark bonds.<sup>56</sup> The electronic trading system is called SAXESS.

The dealers function as intermediaries in bond trading. The dealers are known as *interbank participants* and the trading that takes place between these dealers is normally referred to as *interbank trading*. Trade by the dealers with other counterparties, for example industrial enterprises or insurance companies, is referred to as *customer trade*.

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

---

<sup>55</sup> 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 may be considered to be very slight.

<sup>56</sup> Benchmark bonds consist of the most frequently traded government bonds, with maturities of two, five and ten years.



only clients are institutional participants. Brokers do not trade on their own behalf. Trading via brokers has increased in recent years.

A majority of the dealers in government securities are also dealers in mortgage securities, which means that bid and ask prices are quoted daily. As trade in corporate securities is limited in Sweden, it is unusual for both bid and ask prices to be quoted regularly in the trading system for these securities. It is rather the case that prices for corporate bonds are quoted in response to a client's request.

## 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 futures contract on the other hand, the price is adjusted daily in a market valuation process, i.e. the contract is "marked to market". Futures are usually traded on an exchange while forward contracts are often standardised agreements between two parties.

The most common way to use forwards on the Swedish fixed income market is to trade in *IMM-FRA (International Money Market Forward Rate Agreements)*.<sup>57</sup> These are standardised interest rate forwards that have deposit contracts as the underlying asset and specific maturity dates known as IMM days.<sup>58</sup> The turnover in IMM-FRAs among the Riksbank's primary monetary counterparties averaged SEK 185 billion per day during 2012. The corresponding figure for the previous year was SEK 163 billion.

Contracts based on the outcome for the Riksbank's policy rate, the repo rate, were also introduced a couple of years ago. These are called *RIBA futures* or Riksbank futures.<sup>59</sup> Like the FRA contracts the

---

<sup>57</sup> 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.

<sup>58</sup> IMM (International Money Market) days always fall on the third non-holiday Wednesday in March, June, September and December.

<sup>59</sup> See *The Swedish Financial Market 2009*, Sveriges Riksbank.

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 at which the Riksbank will set its policy rate (the repo rate). FRA contracts are primarily used to manage interest rate risks, as these are affected by the repo rate set by the Riksbank. Like the FRA contracts, the RIBA contracts are settled on the IMM days.<sup>60</sup> Both of these types are also fictitious contracts, which means that the underlying loan sums are not transferred. The turnover in RIBA contracts is moderate compared to that for IMM-FRAs. In 2012, the turnover in RIBA contracts averaged just over SEK 26 billion a day. The corresponding figure for 2011 was slightly less than SEK 19 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, mortgage 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 not especially large. The average turnover in bond forwards with government bonds as the underlying asset also fell slightly from just over SEK 21 billion per day to SEK 18 billion per day between 2011 and 2012. The turnover in forwards with mortgage bonds as the underlying asset rose from an average of slightly over SEK 6 billion to SEK 7 billion per day over the same period.

Turnover in forward contracts on treasury bills declined sharply to an average of SEK 1 million per day in 2012, from a figure of SEK 12 million per day in the previous year. The turnover in treasury-bill forwards has also decreased over a longer perspective. For example, average turnover amounted to SEK 102 million per day in 2010. This decrease is most likely due to the greater usage of IMM-FRAs.

#### *Interest rate swaps*

*Swaps* are another type of derivative on the fixed-income market. An *interest-rate swap* is an agreement between two parties to exchange interest payments over a certain period of time. For example, one party can choose to pay a fixed rate of interest and, in exchange,

---

<sup>60</sup> 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.

receive a variable rate from the other party.<sup>61</sup> As swaps are closely related to forwards, investors may combine them to obtain the yield and risk desired.

Interest-rate swaps with long maturities are referred to by the abbreviation *IRS* and involve the exchange of interest rate payments over several 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 overnight rate.<sup>62</sup> This enables a participant to protect themselves against changes in the variable rate, which in this case is the tomorrow next (T/N) rate. As credit risk is limited in these contracts, the market-listed interest rate reflects the Riksbank's monetary policy expectations to a great degree.

The daily turnover in *Stina* swaps among the Riksbank's primary monetary policy counterparties rose from slightly less than SEK 11 billion to SEK 16 billion between 2011 and 2012.

#### *Interest-rate options*

The Swedish market for interest-rate options is small. An *option* in the fixed-income market is a contract whereby the buyer 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 seller of the option has only the obligation to exercise the contract.

In Sweden, trade is conducted 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 only approximately SEK 2 million.<sup>63</sup>

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, shares and forwards.

---

61 The convention is always to state the variable rate as the current Stibor rate, while the fixed rate is stated at the government bond yield (with the same maturity as the swap) plus an addition.

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

63 Due to the low turnover in this instrument, the Riksbank ceased to collect statistics from its primary monetary policy counterparties as at 30 September 2007. During the years 2004-2006, the average turnover in interest-rate options was SEK 130 million per day, with the equivalent figure in 2007 being SEK 11 million.

### *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 marketplaces such as stock exchanges. On exchanges, trading in derivatives is standardised, with known maturity dates and contract sizes. Derivatives traded off organised exchanges may either be standardised or tailored to suit the buyer's or seller's requirements. 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. Some of these OTC derivatives are cleared by NASDAQ OMX Stockholm, which thus acts a counterparty to the buyers and sellers.<sup>64</sup> The active trading in the derivative instruments is carried out on a market where a number of dealers set prices by telephone or electronically.

### The foreign exchange market

The foreign exchange market is an important financial market. What we normally call the foreign exchange market is a worldwide market. It is characterised by trading with large amounts, a large number of participants, low transaction costs and the rapid dissemination of price information. The global daily turnover in this market is tens of thousands of billions of SEK.

This section primarily deals with the *Swedish* foreign exchange market, which is to say the foreign exchange transactions that take place in the international market, 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, so an account of such trading is provided at the end of 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.<sup>65</sup> Foreign exchange derivatives link the fixed-income and foreign exchange markets

---

<sup>64</sup> See also the description in the chapter *The financial infrastructure*.

<sup>65</sup> See, for example, the article on covered interest rate parity in *The Swedish Financial Market 2012*, Sveriges Riksbank.

together. This connection is usually called *covered interest rate parity (CIP)*.

SEK may be exchanged either by *spot transactions*, where the deal is concluded directly and liquidity or money is normally received after two banking days, or via a derivative instrument, when liquidity is received at some other agreed time (see the section “Frequently used instruments in the Swedish foreign exchange market”).

In relation to the fixed-income market and the stock market, the largest turnover in terms of amounts is on the foreign exchange market. However, a large share of the number of foreign exchange transactions is not conducted there. This is because banks and enterprises that operate internationally neutralise a large share of their income and expenditure in foreign currencies internally. For example, sales in EUR can be balanced against purchases of goods in EUR. In this way, a company can, for example, minimise the hedging it needs. This so-called *netting* does not generate any flows in the foreign exchange market, but does offer a method for dealing with transactions in foreign currency without requiring the exchange of currency for each and every one of them. When a bank or a company needs to reduce or raise the amount of foreign exchange in its account with a foreign bank however, it normally turns to the institutionalised foreign exchange market.

#### FREQUENTLY-USED INSTRUMENTS IN THE SWEDISH FOREIGN EXCHANGE MARKET

This section presents the instruments most commonly used in trading where Swedish kronor constitute part of the transaction.

##### *Spot*

The definition of spot is “a system of trading in which commodities are delivered and paid for immediately after a sale”<sup>66</sup>. 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 derivative instrument is made according to the purposes of the participants. The derivative

---

<sup>66</sup> *Concise Oxford Dictionary*, 11th edition.

instruments used in the foreign exchange market are *foreign exchange forwards*, *foreign exchange swaps*, *cross currency basis 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 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 could be regarded as the equivalent of the money market's 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 the fixed-income market: contract types for the money market's shortest segment). 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, or longer. 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.<sup>67</sup>

A *cross currency basis 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 borrows a currency from another party at the same time as it pays the counterparty the same amount in another currency. During the contract time, interest payments are exchanged for each currency<sup>68</sup>, and, when the contract matures, the same spot rate that the parties paid when the contract was agreed is repaid. Cross currency basis swaps are commonly used to fund foreign currency investments, and are utilised by both financial institutions and their customers. Most contracts have long maturities, from one year to occasionally as long as 30 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

---

<sup>67</sup> Foreign exchange rates are stated in pairs, such as USD/SEK, EUR/USD, GBP/SEK and EUR/SEK.

<sup>68</sup> For example, Stibor for SEK and Euribor for EUR.

fixed income market, with the difference that the underlying asset is a currency.<sup>69</sup> Foreign exchange options may be used, for example, to reduce the foreign exchange risk in future transactions. The buyer of a foreign exchange option has the opportunity, but not the obligation, to exercise the option on the date that the payment falls due. 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 still important, but has decreased considerably in recent years. A standard spot transaction by telephone involving the EUR/SEK currency pair is EUR 5 million. Trading in the electronic systems is more order-driven<sup>70</sup> and standard transactions do not exist to the same extent. Like fixed-income derivatives, foreign exchange derivatives in SEK are only traded OTC (see the section “The trading structure on the market for interest derivatives”). Turnover in the Swedish foreign exchange market is described from two separate perspectives at the end of this section.

### *Interbank trading and customer trading*

Every third year, the Bank for International Settlements (BIS) publishes the study *Report on global foreign exchange market activity*, which is based on surveys carried out by individual central banks.<sup>71</sup> According to the latest study, 39 per cent of turnover on the international foreign exchange market in April 2010 consisted of what is called *interbank trading*. This refers to trade between interbank participants. According to the results of the study carried out in 2007, interbank trading’s share of the total turnover was approximately 42 per cent. The primary reason for the slight decline in the proportion of interbank trading is increased activity in other segments. Above all, trade between dealers and other financial institutions such as hedge funds,

<sup>69</sup> See the description in the section “*The fixed income market – The market for interest derivatives*”.

<sup>70</sup> Orders submitted are automatically matched without the brokers having to contact one another.

<sup>71</sup> This survey is known as “*The Triennial Central Bank Survey*”. More information is available at [www.bis.org](http://www.bis.org).

pension companies and insurance companies has increased heavily in recent years. In 2010, this trade accounted for approximately 48 per cent of the global turnover, according to the BIS survey. Three years previously, these participants accounted for 40 per cent of the turnover. The next BIS report on the foreign exchange market will be published at the end of 2013.

Interbank trading is often the result of *customer trading*, that is transactions between dealers and customers. Customers are, generally speaking, all participants other than dealers. If the customer, for example a Swedish company, needs EUR to execute a payment today, it will turn to its bank, which will quote a EUR 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 quoted 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 order-driven 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. For example, SEK trading is conducted in systems such as Reuters Dealing 3000. 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).

In the trading conducted by the Riksbank's counterparties on behalf of their customers, including major companies, the major banks often use electronic platforms that they have developed in-house. These are called *single-bank platforms* and quote the customer rates only from the bank itself. However, there are also *multibank platforms* in which several banks participate. These quote the customer rates from several banks, enabling the customer to compare. A majority of customer trading in SEK is computerised, but some trading still takes place over the telephone. This pattern also generally applies to interbank trading in foreign exchange derivatives.

In the case of electronic platforms, there are systems that are anonymous and have central clearing, for example FXMarketSpace. Increased risk awareness has also led to an increase in the demand for safe services for managing currency transactions after the transaction



itself has taken place. CLS is one example of such a service that offers the settlement of currency transactions (see also the chapter “The financial infrastructure”).

Some electronic trading takes place in the form of *algorithmic trading*. Algorithmic trading is securities trading in which an order is generated by a computer system on the basis of predetermined instructions and parameters. In algorithmic trading, computers are programmed so that they can carry out an order according to certain codes. These codes are known as trading algorithms. In addition to trading in currency, algorithmic trading also takes place in trading in shares. This is discussed in more detail in the section on the stock market under the heading “Trading structure”. This also describes the term high frequency trading, which is a form of algorithmic trading.

#### *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 SEK back at a low price against another currency.

Unlike in spot trading, derivative trading in SEK against other currencies does not take place using EUR as a hub currency, but USD. 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 in foreign exchange transactions where one side of the foreign exchange transaction is comprised of SEK. At year-end 2012, the counterparties consisted of the four major

Swedish banks and a further five larger international players.<sup>72</sup> At an estimate, the Riksbank's counterparties account for about half of the global turnover in SEK.<sup>73</sup>

According to the statistics collected by the Riksbank, average turnover amounted to SEK 332 billion per day during 2012, which was slightly lower than in the previous year (see Chart 10).<sup>74</sup> Of this, the daily turnover in spot transactions averaged around SEK 77 billion per day in 2012, practically unchanged since 2011.

The turnover in foreign exchange swaps was approximately SEK 221 billion per day in 2012, a level of activity which was, in principle, unchanged since 2011. The turnover in foreign exchange swaps with maturities from two days to 18 months decreased by SEK 3 billion to SEK 123 billion per day between 2011 and 2012.<sup>75</sup> The turnover in foreign exchange swaps with maturities of up to two days increased by SEK 2 billion to SEK 98 billion per day during the same period.

The turnover in foreign exchange options among the Riksbank's counterparties decreased by SEK 2 billion to SEK 11 billion per day between 2011 and 2012. The turnover in foreign exchange forwards in SEK at the Riksbank's counterparties totalled approximately SEK 23 billion per day in 2012. This was a decrease of about SEK 5 billion per day compared with 2011.

The Bank for International Settlements (BIS) is a cooperation body known as 'the central banks' central bank' which conducts an investigation into the global foreign exchange and derivatives market every third year. The most recent investigation took place in April 2010, when over three-quarters of the trade in SEK took place outside Sweden. Banks based in the United Kingdom accounted for 31 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 important elements in well-diversified foreign portfolios focused on Europe.

---

72 More information about the Riksbank's counterparties is available at [www.riksbank.com](http://www.riksbank.com).

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

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

75 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. This definition differs from the market's definition as described in the section on derivatives and may thus refer to both currency swaps according to the market's definition, and to cross-currency interest swaps.

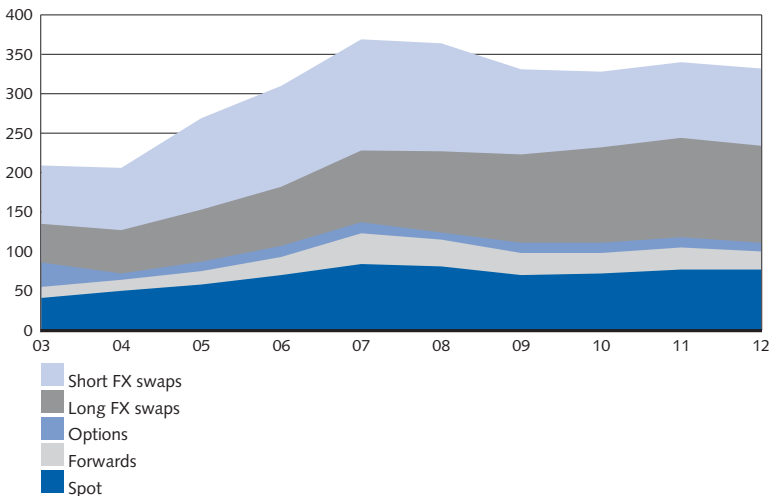
Other countries where there is extensive trading in SEK are Denmark (18 per cent), the United States (9 per cent) and Finland (8 per cent).

#### *Foreign exchange trading in Sweden*

Above, 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 previously cited was the foreign exchange undertaken in April 2010 by the four major Swedish banks based in Stockholm. According to the survey, Sweden is the 15th largest trading venue in foreign exchange in global terms. Between 1998 and 2010, foreign exchange trading in Stockholm increased by around 9 per cent per year. The turnover increased from an average of USD 16 billion per day in 1998 to an average of USD 45 billion per day in 2010.

The currency pair traded most in Stockholm is USD/SEK. However, its share of the total turnover has fallen somewhat, from 39 per cent

**Chart 10. 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. This definition of short and long swaps differs from the market's definition as described in the section on derivatives. Source: The Riksbank

in 2007 to 27 per cent in 2010 (see Table 1). The next largest currency pair is EUR/USD. This represented 25 per cent of trading in Stockholm in 2010. The third largest currency pair was EUR/SEK. In 2010, this currency pair accounted for 18 per cent of the trade in Stockholm. Further down the line, the ranking of the most frequently traded currency pairs in Stockholm varies from year to year.

The largest single currency traded in Stockholm in April 2010 was not SEK but USD, which formed one part of approximately 69 per cent of all the currency pairs traded. This was followed by EUR (around 50 per cent) and SEK (around 50 per cent).

**Table 1. The six currency pairs with the highest turnover in Stockholm**  
Per cent

	1998		2001		2004		2007		2010	
1	USD/SEK	28	USD/SEK	33	USD/SEK	31	USD/SEK	39	USD/SEK	27
2	DEM/USD	16	EUR/USD	14	EUR/USD	16	EUR/USD	26	EUR/USD	25
3	DEM/SEK	7	EUR/SEK	12	EUR/SEK	11	EUR/SEK	23	EUR/SEK	18
4	USD/JPY	4	GPB/USD	4	GPB/USD	5	GPB/USD	2	GPB/USD	3
5	GBP/USD	2	USD/JPY	3	USD/JPY	2	USD/JPY	4	USD/CHF	2
6	GBP/SEK	2	GBP/SEK	1	USD/CHF	2	USD/CHF	2	USD/JPY	2
	Others	40	Others	32	Others	33	Others	4	Others	23
	Total	100	Total	100	Total	100	Total	100	Total	100

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

## A new framework for the Swedish reference rate Stibor


The Swedish reference rate Stibor was formally introduced in 1986 and is defined as the interest rates that the banks in what is known as the Stibor panel, on average, report that they can offer each other for loans without collateral in Swedish kronor. At present, six banks are included in the Stibor panel. Stibor is determined every day for the maturities T/N (tomorrow next), one week, one month, two months, three months and six months.

Stibor was initially used as a reference rate for the pricing of a small number of derivative contracts. Over time, Stibor has gained increasing significance as a reference and guideline in the pricing of financial contracts. In 2012, financial contracts worth around SEK 50 000 billion were priced using Stibor as a basis. The reference rate thus influences the Swedish economy and thereby also the Riksbank's policy targets. Among other areas, Stibor influences the way in which the Riksbank assesses the stability of

the financial system, as it forms a guideline for the banks' costs for loans without collateral on the interbank market and thereby the credit risk in the banking sector.

Reference rates such as Stibor are usually determined on the basis of the banks' assessments of the interest rates. The financial crisis of the autumn of 2008 made clear that there were problems in the determination of reference rates around the world. Among other causes, this was due to the lack of actual transactions forming a basis for the reference rates. The Riksbank has examined Stibor on several occasions and a comprehensive inquiry was initiated in the autumn of 2011.<sup>76</sup> The purpose of this inquiry was to clarify whether the framework for Stibor was clear and confidence-inspiring, as well as whether it was possible to verify the reference rate on the basis of market pricing. The inquiry resulted in several conclusions and a recommendation in the Riksbank's Financial Stability Report 2012:2 that the Swedish

<sup>76</sup> See "The Riksbank's review of Stibor", Riksbank Studies, November 2012 and the article "Reference rates under the magnifying glass" in Financial Stability Report 2012:1.



banks should adopt a number of measures to strengthen the framework for Stibor.

Following the Riksbank's recommendation, the Swedish Bankers' Association formally assumed responsibility for the framework for Stibor on 4 March 2013, at the same time as the framework also entered into force.<sup>77</sup> This means that the Bankers' Association has overall responsibility and acts as principal for Stibor, with its Board as highest decision-making body. The Bankers' Association also appoints a Stibor Committee with responsibility for the framework and for following up its application. The framework for Stibor has thereby become

more transparent. At the same time, requirements have been strengthened for the control of the manner in which Stibor is determined and the possibility of verifying the reference rate. Furthermore, the incentive structure has been changed so that the Stibor banks are obliged to borrow or place at their stated Stibor bids on request. No such obligation existed previously. The number of maturities for which Stibor is determined has been reduced to cover the most frequently-used maturities. Consequently, observations in the reference rates for maturities of nine and twelve months were abandoned in March 2013.

---

<sup>77</sup> See the Swedish Bankers' Association's website, [www.swedishbankers.se/web/bf.nsf/pages/startpage\\_eng.html](http://www.swedishbankers.se/web/bf.nsf/pages/startpage_eng.html).

## The stock market

The stock market helps to perform two of the financial market's basic functions: converting saving to funding and managing risks. It enables investors to channel their savings to companies in need of capital. This gives investors access to investments with relatively high, albeit fluctuating, yield. At the same time, the companies redistribute a proportion of their risks to investors who are willing to bear them.

*Share* (or equity) is the term for the owners' share in a company (limited company). The capital contribution made by the owners in return for these shares comprises the company's *share capital*. A share is essentially a claim on the company's assets and profits after the company's creditors, for example the company's lenders, have received their portion. As the value of this claim is determined by the profitability of the company, share 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. A part of the company's profits are distributed to the shareholders in the form of dividends: a payment of part of the company's assets to the shareholders. In Sweden, these dividends are usually paid out once a year. The remaining profits are added to the company's equity capital. A shareholding also entails co-determination rights in the company in that each share carries some form of voting right at the company's annual general meeting.<sup>78</sup>

Companies that are expanding and need additional capital may issue new shares, issue bonds on the fixed-income market or borrow money, for example from a credit institution. Due to the risks associated with lending to expanding businesses, companies' funding needs can rarely be fully met on the fixed-income and credit markets, or at least not at a reasonable cost. Some of these companies therefore meet their funding needs by issuing new shares that are sold to investors who are willing to take on risk.

The mediation of risk capital takes place most easily and most efficiently on an organised marketplace for shares, for example a stock exchange. Companies use stock exchanges to issue shares, and investors to buy and sell shares.

A description of the stock market in Sweden is presented below. We start by describing the issuers and investors on the market. After this, we first describe the equity-related products investors can trade

---

<sup>78</sup> 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 shares, which only confer one vote per share.

in and then describe the role of marketplaces in share trading. The section concludes with a description of share trading on NASDAQ OMX Stockholm and other marketplaces in Sweden.

The growing integration of the European stock markets is making it increasingly difficult to determine what a Swedish share is. In this section, we use the term Swedish shares to designate the shares listed on Swedish marketplaces. Certain companies defined as foreign companies, for example those with head offices located abroad, can still list their shares on Swedish marketplaces. These will thus still be referred to as Swedish shares. In the same way, Swedish shares that are only listed on a foreign marketplace can be traded overseas and are not discussed in this section.

### ISSUERS

Far from all Swedish companies may obtain funding by issuing shares. To be a limited liability company, which slightly less than one-third of all Swedish companies are at present, a company must have capital in an amount of SEK 50 000. However, only companies with at least SEK 500 000 in capital may offer their shares for public trading.

Limited liability companies that do not sell their shares to the public are referred to as *private limited companies*, while companies whose shares are sold to the public are referred to as *public limited companies*. Both established companies and companies that are not yet ready for stock exchange listing or other forms of public share trading can choose to be classified as private limited companies. In certain cases, they can receive funding in the form of private venture capital. Such funding is sometimes channelled via a special form of intermediary, a venture capital company. These are described in more detail in the chapter Financial intermediaries.

### INVESTORS

Shareholding in Sweden is widespread and extensive. At year-end 2012, the total value of the shares listed at Swedish marketplaces amounted to approximately SEK 3 900 billion (see Table 2). This is an increase of just over 12 per cent compared with 2011, but it is about 7.5 per cent lower than in 2010. In turn, Table 3 shows that foreign investors owned about 40 per cent out of the total of SEK 3 900 billion. Foreign investors thus answer for the largest portion of shareholdings, which they have done since 1996. Swedish households' direct shareholdings amounted to slightly less than 11 per cent. But the households also own shares indirectly through investment funds



and savings in insurance and pension schemes. At the end of 2012, the proportion of shareholdings held by financial companies amounted to slightly less than 28 per cent, while non-financial companies held slightly less than 12 per cent.

## EQUITY-RELATED DERIVATIVES

Derivative contracts with individual equities or share indices as underlying assets may be traded on marketplaces in Sweden. The vast majority of these derivatives are options or forwards. A *share option* is

**Table 2. Swedish marketplaces 2012 (2011 within parentheses)**

	NUMBER OF COMPANIES		MARKET VALUE SEK BILLION	
NASDAQ OMX Stockholm	258	(259)	3 916	(3 496)
NGM Equity	12	(16)	1.2	(1.3)
Aktietorget	116	(125)	6.7	(5.5)
First North	103	(110)	23.0	(20)
NGM Nordic MTF	17	(19)	1.2	(1.1)
Total	506	529	3 948	3 524

Sources: NASDAQ OMX Stockholm, NGM and Aktietorget

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

SECTOR	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Non-financial companies	9.2	8.7	8.4	9.0	9.4	9.5	9.1	9.2	12.0	11.5
Financial companies										
Banks, finance institutions, etc.	2.3	3.4	2.8	2.5	2.2	1.6	2.1	2.2	1.8	2.3
Investment companies <sup>1</sup>	5.6	5.3	5.3	5.2	5.6	5.4	5.3	5.4	5.3	5.5
Mutual funds	11.6	11.1	11.8	11.2	10.9	11.4	12.6	12.3	11.9	11.5
Insurance companies, pension institutions	9.2	8.7	8.7	8.1	8.3	9.0	9.1	8.9	8.7	8.3
Financial companies, total	28.7	28.5	28.6	27.0	27.0	27.4	29.1	28.8	27.7	27.6
Public sector										
Central government	5.5	5.2	4.4	4.5	4.5	4.6	4.7	3.8	3.1	2.9
Local government	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Social insurance funds	4.1	3.8	3.5	3.2	3.2	3.5	3.4	3.1	3.3	2.8
Public sector, total	9.8	9.2	8.0	7.8	7.8	8.2	8.1	6.9	6.4	5.7
Households	14.4	15.0	14.8	14.3	13.4	14.5	13.9	13.3	11.2	10.8
Non-profit making organisations										
Companies	1.8	1.8	2.1	2.1	2.0	2.1	1.8	1.6	1.7	1.9
Households	2.9	2.8	2.7	2.7	2.4	2.5	2.5	2.4	2.2	2.2
Non-profit making organisations, total	4.7	4.6	4.8	4.8	4.4	4.6	4.3	4.0	3.9	4.1
Rest of the world	33.1	33.9	35.3	37.2	38.0	35.8	35.4	37.8	38.7	40.3
ALL SECTORS, TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

Note. The major decline in households' equity wealth in 2011 is largely due to the many transfers taking place of shareholdings from the household sector to the non-financial corporate sector.

Source: Statistics Sweden

a contract whereby the holder has the right, but not the obligation, to buy or sell a share at a specified price at a specified date in the future. In turn, the issuer of the option has the obligation to exercise the option if the holder so wishes. An *equity future* is a contract whereby both buyer and seller have undertaken to buy or sell a certain share at a specified date in the future at a price determined in advance.

#### *Other equity-related products*

Other products tied to certain shares, or to a basket of shares, are also traded on the Swedish market. *Warrants* are one such product. In the Swedish financial market, the term warrant is currently used for many different types of securities. In most cases, these are call options, i.e. they give the holder the right, but not the obligation, to purchase the underlying asset at a set price before or at a set time. Warrants are issued using various underlying assets. The most common type of underlying asset is shares, but warrants can also be linked to commodities, currencies, stock indices and equity baskets, to give a few examples. A characteristic of warrants is that they generally have a considerably longer time horizon than ordinary equity options, usually more than one year. They are also issued by a party – usually a bank or a securities company – other than the one issuing the underlying asset. The company that has issued the warrant then acts as market maker.

In recent years, exchange-traded funds (ETFs) have become a popular alternative for investment. By investing in an exchange traded fund, the investor buys a basket of underlying securities. These funds are often index funds, which is to say funds structured to reflect a specific share index. The basket may also consist of commodities or fixed-income investments, for example. Exchange-traded funds, like shares, are traded in real time and are offered via market makers who guarantee the liquidity in the instrument. It is the market price that determines the value of the investment, and this changes during the day as the index changes. Those who offer an exchange traded fund can increase the number of shares in the fund depending on the demand from investors.

Outside the established marketplaces, trading is conducted in CFD (Contract For Difference) contracts. These can be described as forward contracts without a set maturity date. A CFD contract reflects price changes in underlying assets, which usually consist of shares, share indices, commodities or currencies. The buyer of the contract provides collateral that only needs to represent a certain percentage of the value of the underlying asset. This collateral is continuously

updated, in addition to a daily interest charge which the buyer pays as long as the contract runs. In certain cases, a brokerage fee<sup>79</sup> is also paid. The decisive factor for profit or loss is the performance of the underlying instrument from the time of purchase or sale until the time when the CFD contract is terminated.

## MARKETPLACES

Marketplaces have two main tasks: providing assistance to companies wishing to offer shares for sale, and administer the technical systems and the regulatory framework that make share trading possible. There are currently two categories of marketplaces: regulated markets (including traditional stock exchanges) and trading platforms, which are usually called MTFs (Multilateral Trading Facilities).

There were 506 public limited companies in Sweden at the end of 2012 (see Table 2). Of these, 270 were listed on a regulated market and 236 were traded on an MTF. On a *regulated marketplace*, usually referred to as a stock exchange, companies must comply with the requirements of Swedish legislation and of the marketplace itself. 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 and have simpler regulations than a regulated market. MTFs are thus appropriate for use by newer and smaller companies, as the lower requirements make trading less expensive for companies. However, the MTF itself can choose to apply the stricter requirements of regulated markets.

Regulated markets and MTFs must also adopt regulations to govern information related to trading. Companies intending to trade on these marketplaces must undertake to provide the market with information concerning decisions and events that may influence share prices. The reason for this is that all traders should have the possibility of having the same information at the same time. This is intended to create confidence in the market and protect investors.

At year-end 2012, there were three regulated marketplaces in Sweden: NASDAQ OMX Stockholm, Nordic Growth Market (NGM) and Burgundy. There were also four MTFs: First North, Nordic MTF, Burgundy and Aktietorget.<sup>80</sup> Swedish shares can also be traded on certain overseas MTFs that have specialised in providing a marketplace

---

<sup>79</sup> Brokerage fees are charged by a broker to a client when trading shares, for example.

<sup>80</sup> Since January 2011, Burgundy has had a permit to run a regulated market for trading in warrants, certificates, structured products and fund units. Burgundy has also received a permit to run an MTF.

for shares that are already listed on a stock exchange and thereby fulfil the listing requirements.

The overwhelming majority of share trading in Sweden is conducted in an electronic trading system belonging to a stock exchange or at an MTF. But it is also possible to trade shares 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 them as normal stock exchange transactions. Examples of such trading include that taking place via telephone, email or via chats, for example over the information system Bloomberg. The remainder of trade conducted 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.

#### TRADING IN SHARES ON NASDAQ OMX STOCKHOLM

NASDAQ OMX Stockholm is the predominant marketplace for Swedish shares. The following section describes the members of NASDAQ OMX Stockholm, its trading structure and turnover.

##### *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 shares. 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 84 share-trading members, 41 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 of NASDAQ OMX Stockholm in this category.

##### *Trading structure*

Share trading on NASDAQ OMX Stockholm takes place electronically through the matching of orders in the trading system INET Nordic.<sup>81</sup> The trading day begins and ends with an auction which is intended to

---

<sup>81</sup> INET Nordic was launched on the markets NASDAQ OMX Nordic and NASDAQ OMX Baltic 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 still uses the old system SAXESS.

find 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.

Many stock exchange members provide Internet-based services for placing orders. This can often entail lower transaction costs (for 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.<sup>82</sup> Settlement entails the shares being deregistered from the seller's account and registered on the purchaser's account (if the customer has a custody account at a broker, the transaction is instead registered in the custodian's management account at Euroclear Sweden). 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 (usually 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 stock market. More information about algorithmic trading is available in the chapter The financial markets. The concept of algorithmic trading also covers *high frequency trading* (HFT). High frequency trading is electronic trading carried out by algorithms that take decisions on entering orders and carrying out transactions at a very high frequency. In microseconds, the computer 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 most common on the stock market, but also occurs on other markets, such as the foreign exchange market.<sup>83</sup> NASDAQ OMX Stockholm has estimated that algorithmic trading accounted for approximately 45 per cent of all trading on the stock exchange in 2011 and that high frequency trading amounted to about 13 per cent of all trading.<sup>84</sup>

---

82 Shares 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*.

83 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.

84 More information about high-frequency and algorithmic trading on the Swedish stock market can be found in Finansinspektionen's investigation from 2011, "*Investigation into high frequency and algorithmic trading*".

### Listed companies

At year-end 2012, 258 companies were listed on NASDAQ OMX Stockholm. Public companies listed there are presented on a Nordic list which also includes the companies listed on the stock exchanges in Helsinki, Copenhagen and Reykjavík.

The Nordic list has entailed a harmonisation of the listing requirements. To be listed on NASDAQ OMX Nordic, the expected market value of the shares must be no less than EUR 1 million. Further 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.

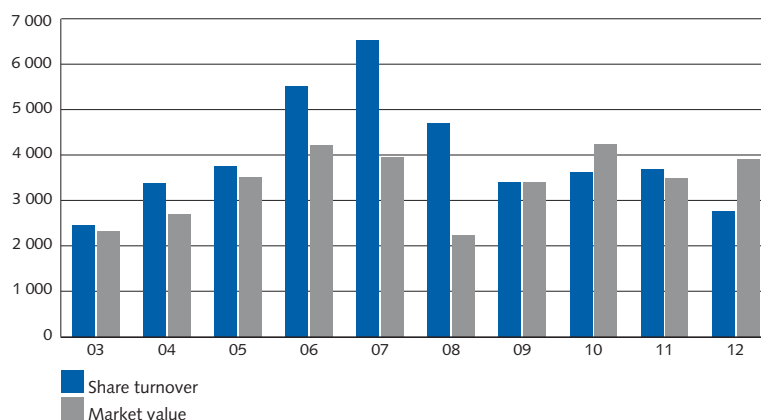
The Nordic list is divided into three segments according to the market value of the companies: Large Cap, Mid Cap and Small Cap. The Nordic Large Cap segment comprises companies with a market capitalisation of more than EUR one billion. Companies with a market

**Table 4. Key figures for share trading on NASDAQ OMX Stockholm**

	2012
Market value, SEK billion	3 916
Turnover, SEK billion	2 769
Average daily turnover, SEK billion	11.1
Annual turnover, billion shares	36.5
Total number of deals closed during the year, million	46.9
Average amount per deal	48 913
Average number of deals per day	187 289
Rate of stock turnover, per cent	74.0

Source: NASDAQ OMX Stockholm

**Chart 11. Equity turnover and market capitalisation on NASDAQ OMX Stockholm SEK billion**



Source: NASDAQ OMX Stockholm

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.

On the stock exchange, new capital can be raised through new share issuance, i.e. listed companies increase their equity capital by issuing new shares. New capital can also be raised through initial public offerings (IPOs), i.e. when new companies are listed on the stock exchange.

#### *Turnover and market value*

The turnover in share trading on NASDAQ OMX Stockholm was just over SEK 2 769 billion in 2012. This is 58 per cent lower than the peak level reached in 2007 (see Chart 11). The number of transactions also decreased, from slightly less than 57 million at year-end 2011 to about 47 million at year-end 2012 (see Table 4). The average turnover per trading day amounted to SEK 11.1 billion. The turnover on the stock market, in terms of SEK, is well below that of the fixed-income market, for example. On the other hand, the number of transactions is considerably greater than on the fixed-income market (see the section on the fixed-income market). At year-end 2012, market value amounted to SEK 3 916 billion, an increase of 12 per cent compared with the previous year.

#### TRADE IN SHARE-RELATED DERIVATIVES

The vast majority of trading in share derivatives takes place under the auspices of NASDAQ OMX Derivatives Markets (NASDAQ OMX DM), which is a secondary name<sup>85</sup> of NASDAQ OMX Stockholm. Nordic Growth Market (NGM) also offers derivatives trading on the Nordic Derivatives Exchange (NDX) list. NASDAQ OMX DM offers trading in derivatives with Swedish, Danish, Norwegian and Finnish shares as underlying assets.<sup>86</sup> In addition to derivative contracts linked to individual shares, options and forwards linked to NASDAQ OMX's own share index are traded on NASDAQ OMX DM. NASDAQ OMX DM also provides clearing for the derivatives traded on its exchange and for certain OTC derivatives that are not traded on its exchange (see the chapter The financial infrastructure).

The number of standardised derivative contracts traded on NASDAQ OMX DM during 2012 amounted to just over 71 million.

---

<sup>85</sup> A secondary name is not a separate legal entity but relates to a particular part of a company's activity.

<sup>86</sup> Certain Finnish derivatives, including Nokia derivatives, are traded on Eurex, in line with an agreement with NASDAQ OMX.

Equity options and index futures accounted for just under 84 per cent, while the remaining 16 per cent was divided between equity futures and index options.

In Sweden, warrants are traded on NASDAQ OMX Stockholm and also on the Nordic Derivatives Exchange (NDX). In 2012, the turnover in warrants on NASDAQ OMX Stockholm totalled just under SEK 9 million per day. Since 2008, both turnover and the number of transactions per day have almost halved.

## SHARE TRADING ON OTHER SWEDISH MARKETPLACES

### *Regulated markets*

At year-end 2012, there were three regulated marketplaces in Sweden. In addition to NASDAQ OMX Stockholm, Nordic Growth Market (NGM) and Burgundy have also been licensed by Finansinspektionen to operate stock exchanges. NGM has specialised in small and medium-sized growth companies and offers listing and share trading on the NGM Equity list. At year-end 2012, a total of 12 companies were listed on NGM Equity. In addition, NGM offers derivatives trading on the Nordic Derivatives Exchange (NDX) list.

### *Trading facilities, MTFs*

At year-end 2012, there were four MTFs in Sweden: First North, Nordic MTF, Burgundy and Aktietorget.

First North is intended for small companies, new companies and growth companies and is operated by NASDAQ OMX Stockholm as an alternative marketplace. First North includes companies in Denmark, Finland, Iceland and Sweden. The companies that are traded on First North are not listed on NASDAQ OMX Stockholm, however, they use the same trading system, INET Nordic, as NASDAQ OMX Stockholm. Information about prices, volumes and order depth<sup>87</sup> is published in real time through the same channels as for the shares traded on NASDAQ OMX Stockholm.

NASDAQ OMX Stockholm, however, does not take responsibility for monitoring the companies listed on First North. Instead, every company has a *Certified Adviser* who, by agreement with NASDAQ OMX Stockholm, is responsible for that company's compliance with the requirements for trading on First North and with the requirements for the continuous provision of information. The Certified Advisers are, in turn, required to enter into agreements with the companies

---

<sup>87</sup> The order depth shows how many shares the purchaser wishes to buy and the seller wishes to sell and at what price.



for which they are responsible. These agreements specify the requirements for trading on First North, including those regarding share distribution, market value and information. At year-end 2012, a total of 103 companies were traded on First North.

In 2009, a new segment, First North Premier, was introduced into First North. The companies trading on First North Premier must fulfil the same requirements for accounting and information as those companies trading on NASDAQ OMX Nordic.

NGM operates Nordic MTF, a trading facility for small to medium-sized growth companies. The electronic trading system provided by NGM for share trading is known as Elasticia and was introduced in November 2010. NGM is responsible for monitoring the listed companies and for the trade in the companies' shares. At year-end 2012, a total of 17 companies were listed on Nordic MTF.

Burgundy is an MTF operated by leading banks and investment companies in the Nordic region, who are also the participants that are allowed to trade on this facility. Institutional and individual investors may only trade through one of these participants. These, in turn, ensure that the transactions take place in accordance with the "best execution"-principle.<sup>88</sup> This means that an order is only executed on Burgundy if the price is better there than on other marketplaces that offer trading in the security concerned. Trading is offered in all the shares listed on NASDAQ OMX in Sweden, Denmark and Finland, on NGM, and on the Oslo Stock Exchange in Norway.<sup>89</sup>

The fourth Swedish MTF is Aktietorget, which is intended for small and growing companies. Trading takes place through the INET Nordic trading system, just like the trading on NASDAQ OMX Stockholm. Aktietorget complies with the general regulations for an MTF, but has in addition its own regulatory framework to protect the investor. At year-end, 2012, a total of 116 companies were traded on Aktietorget, a slight decrease compared with the previous year.

---

88 According to MiFID (the Markets in Financial Instruments Directive), banks and investment companies must adopt all reasonable measures to achieve the best possible result for their clients when they execute or transfer an order.

89 Since January 2011, Burgundy has had a permit to run a regulated market for trading in warrants, certificates, structured products and fund units. Burgundy has also received a permit to run an MTF.

## ■ 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 other credit market companies, which are important for the supply of credit; investors in the form of insurance companies, fund management companies and pension funds, which take care of large portions of the general public's savings; securities companies, which act as brokers and market-makers in the financial markets; and private equity investment companies, which play an important role in the supply of venture capital.*

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. However, different types of intermediary are often organised into one and the same group. Table 5 provides an overview of the way in which the business activities have been divided within the five 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 fulfil the role of universal banks; that is, to be able to provide products and services in the entire financial field. The groups organise their operations in different ways. For example, two of the five largest financial groups have their securities businesses in separate subsidiaries. The others have opted to offer these services through their banking arms. Neither do all financial groups have banking operations 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 financial groups also have significant operations outside Sweden. For example, half of the banks' lending takes place abroad. However, this publication is primarily intended to describe the Swedish financial market. The statistics presented therefore contain neither the Swedish banks' foreign 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.<sup>90</sup> To provide a complete picture of the four largest Swedish bank groups, a brief outline of these groups and in particular their operations abroad is presented in the box "Foreign operations – a part of the banking groups".<sup>91</sup>

However, the banks, mortgage institutions, insurance companies, securities companies and so on will be dealt with separately in this chapter. Charts 12 and 13 provide an overview of the extent of the operations conducted in the most important categories of financial intermediary.

**Table 5. Operations of the major banking groups in Sweden**

PARENT COMPANY	BANK	MORTGAGE	FUND MANAGEMENT COMPANIES	SECURITIES BUSINESS	LIFE ASSURANCE	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	Provided by bank	Handelsbanken Liv AB	Handelsbanken Finans AB
Skandinaviska Enskilda Banken AB	Skandinaviska Enskilda Banken AB	Provided by bank	SEB Fonder AB	Enskilda Securities AB	SEB Trygg Liv AB	Provided by bank
Swedbank AB	Swedbank AB	Swedbank Hypotek	Swedbank Robur Fonder AB	Provided by bank	Swedbank Försäkring AB	Swedbank Finans AB
Danske Bank A/S	Danske Bank Sverige <sup>1</sup>	Provided by bank <sup>2</sup>	Danske Capital <sup>3</sup>	Provided by bank	Danica Pension Försäkrings aktiebolag <sup>3</sup>	Provided by bank

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 more companies than shown above.

<sup>1</sup> Branch.

<sup>2</sup> Realkredit i Danmark is the Danske Bank group's mortgage institution.

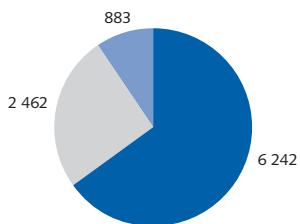
<sup>3</sup> Common specialised entities.

Source: The banks' annual reports

<sup>90</sup> 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. Accordingly, a branch is considered to be a unit with its own administration.

<sup>91</sup> For a more detailed review of the activities of the major banks, see the *Financial Stability Report*, published by the Riksbank twice per year ([www.riksbank.se](http://www.riksbank.se)).

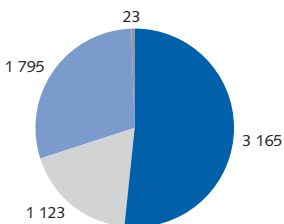
**Chart 12. Total assets of Swedish banks at year-end 2012  
SEK billion**



■ Other credit market companies  
■ Mortgage institutions  
■ Banks

Source: The Riksbank

**Chart 13. Total assets and investment assets at year-end 2012  
SEK billion**



■ Securities companies  
■ Fund management companies  
■ AP funds  
■ Insurance companies

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

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

## Foreign operations – a part of the banking groups

The four major Swedish banking groups (Handelsbanken, Nordea, SEB and Swedbank) conduct significant operations outside of Sweden. The operations of a group's various companies, both within Sweden and abroad, are all, to some extent, dependent upon one another and affect the development of the group as a whole. For example, companies within a group can share certain administrative functions or joint funding, which can provide them with advantages over companies that are not organised within a group. Similarly, the entire group can be negatively impacted if a part of the group, a unit or company, encounters problems. Consequently, to obtain an overall view of the four major banks, it is important to examine both the operations conducted in Sweden and the overseas operations. The purpose of this box is to present a view of the banks' operations abroad. Table 6 indicates the consolidated total assets of the four major Swedish banks, as

well as the groups' lending to the public, in Sweden and abroad. The table indicates that both Swedish and foreign operations are of major significance for the major banking groups as a whole.<sup>92</sup>

Lending to the public in Sweden and abroad<sup>93</sup> accounts for around 58 per cent of the major banks' assets. Less than half of this is lending outside Sweden, which is a reduction of about 5 percentage points since the financial crisis broke out in 2008. This still implies that a major portion of the banks' risks is located abroad.

Nordea is the bank undertaking the largest proportion of lending to borrowers outside Sweden. About 75 per cent of Nordea's lending is outside Sweden; 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 6).

There are also differences between the major banks in terms

<sup>92</sup> Unlike the rest of the statistics in this publication, the statistics in the overview below refer to the entire operations of the groups, i.e. operations in all companies and countries.

<sup>93</sup> The term "lending to the public" is defined as all lending that is not lending to monetary financial institutions (MFIs). This also applies to the term "deposits from the public".

of the geographical extent of foreign operations. Nordea's lending outside of Sweden is primarily to the other Nordic countries. Handelsbanken and SEB conduct approximately one fifth of their lending in the other Nordic countries, while Swedbank only conducts a small portion of its lending in these countries. Both SEB and Swedbank conduct a large portion of their lending in the Baltic countries. SEB also has a large part of its lending in Germany, and Handelsbanken has a part of its lending in the United Kingdom. Chart 14 shows the geographical distribution of lending in each major banking group at year-end 2012.

Almost 63 per cent of foreign lending is funded through deposits from the public. Chart 15 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 chart shows that the banks' lending in foreign currency decreased during the years 2009 to 2011, before then increasing again in 2012. As deposits in foreign currency to the banks

have not increased as much as lending, the deposit deficiency has increased. 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 2012, the deposit deficit in foreign currency amounted to around SEK 1 282 billion, which corresponds to 37 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 convert, or swap, this lending into Swedish kronor to protect themselves against foreign exchange risk.<sup>94</sup>

The banks' funding may differ, depending on whether they have a centralised or decentralised funding strategy. To a large degree, Swedish banks have centralised funding, where liquidity management is carried out as a central function and the parent company holds

<sup>94</sup> See the article "Swedish banks' use of the currency swap market to convert funding in foreign currencies to Swedish kronor" in *Sveriges Riksbank Economic Review* 2012:2.

a liquidity reserve.<sup>95</sup> Foreign subsidiaries which are dependent on market funding obtain liquidity through the parent company, which in turn borrows on the global securities market. Centralised funding is cheaper, as the parent company often has a more well-known name and higher credit rating than the individual subsidiaries. As all of the funding is obtained in the same place, the bank can also benefit from economies of scale and reduce total fixed costs. One disadvantage may be, however, that potential financial problems on the foreign market

could spread to operations on the Swedish market. With a decentralised strategy, the banks allow foreign subsidiaries and branches to manage their own funding and liquidity. This leads to a developed local market that is less dependent on the parent bank's home market. The strategy also leads to diversified funding and reduces the group's dependence on a small number of participants. However, decentralised funding also generally leads to higher costs because of the lack of economies of scale.

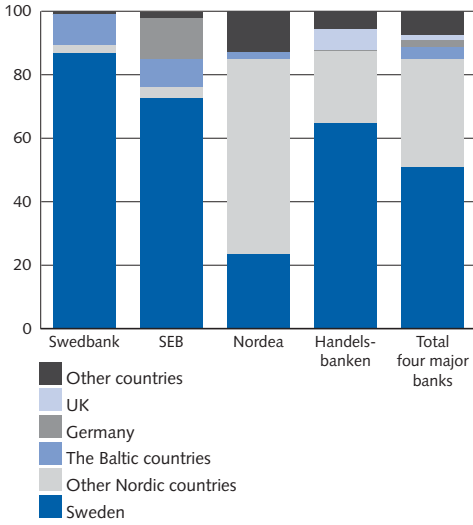
**Table 6. Operations of the four dominant banking groups on the Swedish financial market at year-end 2012 SEK billion**

	HANDELS- BANKEN	NORDEA	SEB	SWEDBANK	TOTAL, THE FOUR MAJOR BANKS
Total assets	2 388	5 814	2 453	1 847	12 502
Loans to public, of which:	1 664	3 291	1 135	1 184	7 274
- loans to Swedish public	1 078	774	825	1 027	3 704
- loans to public abroad	586	2 517	310	157	3 570

Note. To some extent repos are excluded from the lending to the Swedish public and the public abroad respectively.  
Sources: The banks' reports and the Riksbank

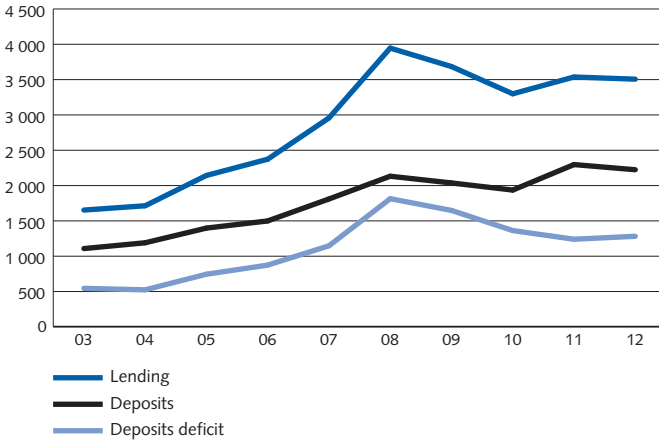
<sup>95</sup> One exception is Nordea, which has significant operations in Denmark, and largely obtains funding on the Danish securities market.

**Chart 14. Geographical breakdown of the major banks' lending 2011**  
Per cent



Sources: Bank reports and the Riksbank

**Chart 15. The four major banks' deposits and lending in foreign currency**  
SEK billion



Note 1. Deposit deficit = Lending – Deposits

Note 2. As the focus is on the overseas operations here, we only show the deposit deficit in foreign currency. The total deposit deficit amounted to around SEK 3,200 billion at the end of 2012.

Sources: Bank reports and the Riksbank



## 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 7). 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. Consequently, they play an important part in ensuring the supply of capital in the economy.

The banks have long played a key role among credit institutions. For example, the banks have 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 market companies have also been allowed to accept deposits from the general public. These deposits, like deposits with the banks, are covered by the Swedish deposit guarantee scheme.<sup>96</sup> 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.

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.

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, corresponding to SEK 2 685 billion (see Chart 16). In the Swedish market, the four largest limited liability banks together account for 75 per cent of the banks' total assets (see Table 8).

In addition to the *limited liability banks*, the Swedish market also includes *savings banks* and *co-operative banks*. There are a large

---

<sup>96</sup> 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.

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.

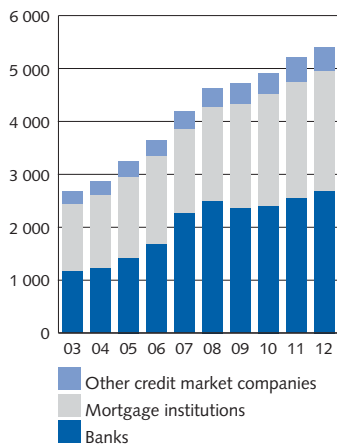
At the end of 2012, there were a total of 114 banks established in Sweden.

These comprised 39 limited liability banks, 24 savings banks, 21 foreign-owned branches and two co-operative banks. Compared with 2011, two limited liability banks have been added to the Swedish banking market, at the same time as three foreign-owned branches have closed down.

**Table 7. Different types of credit institution**

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

**Chart 16. Lending by credit institutions to the public  
SEK billion**



Note 1. The chart shows lending by type of institution. 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, at that point 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 8. The ten largest banks' balance sheet totals at year-end 2012  
SEK billion**

SEB	1 418
Nordea Bank	1 302
Swedbank	1 009
Handelsbanken	864
Danske Bank <sup>1</sup>	680
SBAB Bank	162
DNB <sup>1</sup>	108
Länsförsäkringar Bank	100
Landshypotek	77
Skandiabanken	41
<b>Total, 10 largest</b>	<b>5 762</b>
<b>Total, all</b>	<b>6 208</b>

Note 1. 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.

Note 2. All of the Swedish banks' balance sheet totals as a percentage of GDP amounted at the year-end 2012 to 175 per cent. Foreign operations not included.

1. Foreign branch.

Source: The Riksbank

## Creating money

### WHAT IS MONEY?

Money is an asset that is generally accepted as:

- a means of payment, something that can be used to make payments
- a store of value, that households and companies can save to use later
- a unit of account, that can be used to express a price

Items such as cattle and precious metals have previously been used as money, but today we regard banknotes, coins and bank deposits from the public as money. The value of Swedish money is dependent on the confidence of the general public. Irrespective of whether money consists of a banknote or a figure in an account, its usability is based on the members of Swedish society agreeing to attach a value to the money and being confident that the money will retain this value, which in turn entails having confidence in the inflation target. This thus makes it possible to use banknotes, coins and deposits to

pay for goods and services and to repay debts.

When we talk about the money supply in Sweden we mean the money owned by the public.<sup>97, 98</sup> Only a small part of the Swedish money supply consists of what is traditionally called money, that is, banknotes and coins. Most of it is in the form of deposits.

### HOW IS MONEY CREATED?

*The Riksbank issues banknotes and coins...*

The Riksbank is responsible for providing Swedish banknotes and coins. This includes supplying banknotes and coins, destroying banknotes and coins that can no longer be used and accepting banknotes that are no longer valid.

Money in the form of banknotes and coins primarily came into use for practical reasons. In order to establish confidence in the value of the money it was necessary for the issuer to have an asset (usually gold) that the public could

<sup>97</sup> More information on the money supply is available at [www.riksbank.se](http://www.riksbank.se).

<sup>98</sup> This is different from what is usually referred to as the monetary base, which includes outstanding banknotes and coins, monetary financial institutions' deposits at the Riksbank and receivables from the Riksbank stemming from issued Riksbank certificates.

exchange the money for. The fact that banknotes and coins had a value in a specific asset was called a standard (gold standard, silver standard and so on). The Riksbank previously issued money under such a standard. The Swedish gold standard was abandoned in 1931. Between 1951 and 1973, Sweden was linked to the Bretton Woods system, in which the US currency, which in turn was linked to gold, acted as the 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 assets or currencies. The fixed exchange rate was abandoned in 1992 and Sweden began to use a floating

exchange rate. Today, the gold reserve forms a minor part of the Riksbank's assets and the major part instead consists of foreign currency (the foreign exchange reserve).

*... the public withdraws banknotes and coins*

The members of the public gain access to banknotes and coins when they withdraw cash from their accounts. Note, however, that this does not mean that the money supply in itself changes, only that the proportion of banknotes and coins increases. The Riksbank does not govern how much cash is in circulation in society, this is instead determined by demand from the general public.<sup>99</sup> Figure 1 shows a simple

Figure 1. The public withdraws cash

A			B			C		
<b>The Riksbank</b>			<b>The Riksbank</b>			<b>The Riksbank</b>		
	<i>Asset</i>	<i>Liability</i>		<i>Asset</i>	<i>Liability</i>		<i>Asset</i>	<i>Liability</i>
Banknotes and coins		0	Banknotes and coins	+100		Banknotes and coins		100
Claim on Bank A	0		Claim on Bank A	+100		Claim on Bank A	100	
<b>Bank A</b>			<b>Bank A</b>			<b>Bank A</b>		
	<i>Asset</i>	<i>Liability</i>		<i>Asset</i>	<i>Liability</i>		<i>Asset</i>	<i>Liability</i>
Asset	100		Deposit customer A	-100		Asset	100	
Deposit customer A		100	Debt to the Riksbank	+100		Debt to the Riksbank		100
<b>Customer A</b>			<b>Customer A</b>			<b>Customer A</b>		
	<i>Asset</i>	<i>Liability</i>		<i>Asset</i>	<i>Liability</i>		<i>Asset</i>	<i>Liability</i>
Deposit account Bank A	100		Deposit account Bank A	-100		Banknotes and coins	100	
Liability		100	Banknotes and coins	+100		Liability		100

<sup>99</sup> Read more at: [http://www.riksbank.se/en/Notes and coins/Cash handling](http://www.riksbank.se/en/Notes%20and%20coins/Cash%20handling)

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 its 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 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 asset in the form of a mortgage on the bank's balance sheet. The money lent to Customer A will now be counted as part of the total money supply as it is owned by the public: it becomes new money in the system (A). When

Figure 2. The commercial bank's lending

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

■ = New money  
(which increases the money supply)



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.

If the assumption is instead that there are several banks and that Customer B is a customer of another bank, Bank A will need to borrow money from Bank B at the end of the day as Bank A will lack funding for the mortgage and 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.<sup>100</sup>

Note that 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 borrowers who are not creditworthy, they will be doubted by investors and thus experience problems with their funding. The second is that the banks will want to hold a certain amount of liquidity in reserve so that they do not suffer 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 held 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 have a certain amount of equity.

---

<sup>100</sup> Read more about the overnight market and how it works on: [http://www.riksbank.se/upload/Dokument\\_riksbank/Kat\\_publicerat/Ekonomiska%20kommentarer/2011/ek\\_kom\\_nr1\\_11sv.pdf](http://www.riksbank.se/upload/Dokument_riksbank/Kat_publicerat/Ekonomiska%20kommentarer/2011/ek_kom_nr1_11sv.pdf).

### The banks' assets and liabilities

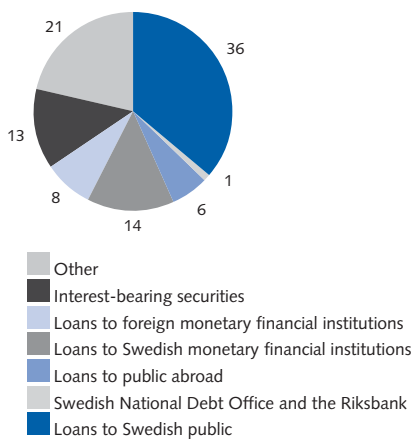
The banks' assets consist for the most part of loans to the public in Sweden and abroad. At the end of 2012, lending to the public in Sweden and abroad totalled SEK 2 685 billion, corresponding to around 42 per cent of the banks' total assets (see Chart 18).

43 per cent of this lending went to Swedish non-financial companies and 36 per cent to Swedish households. About 15 per cent of the lending was to the foreign public.<sup>101</sup> The remaining 6 per cent consisted of lending to the Swedish public sector and other Swedish lending.

In addition to lending to the public, the banks also have large claims on Swedish and foreign monetary financial institutions<sup>102</sup>. Together, these claims comprised around 22 per cent of the banks' assets (see Chart 17). 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. In 2012, these

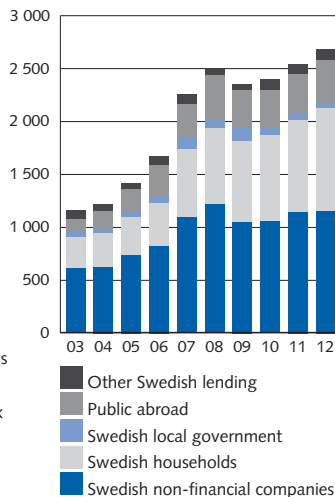
**Chart 17. The banks' assets at year-end 2012**  
Per cent



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

**Chart 18. The banks' lending to the 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

<sup>101</sup> This represents only a small part of the Swedish banking groups' lending to the public abroad. The remainder of the banks' lending to the public abroad was thus comprised of the banks' foreign subsidiaries. For a brief outline of the total lending abroad, see the box "Foreign operations – a part of the banking groups".

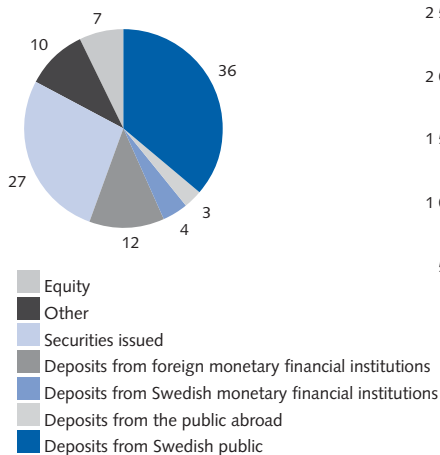
<sup>102</sup> The monetary financial institutions include other banks, finance companies and securities companies.



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 requirements. 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.

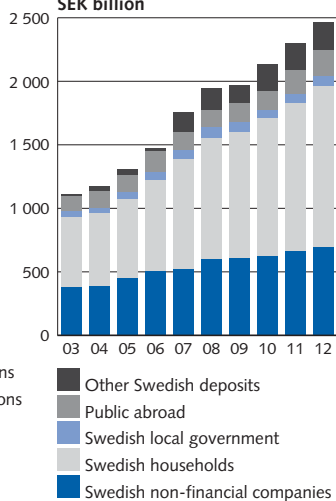
In addition to the liabilities in the balance sheet, banks may also have off-balance sheet commitments. Typical off-balance sheet items are certain derivatives, guarantees and commitments. The common factor for these items is that the bank, as yet, does not have a real and quantifiable liability. That 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 2012**  
Per cent



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

**Chart 20. The banks' deposits from the public in Sweden and abroad by lender category**  
SEK billion



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

---

## Why are banks regulated?

**B**anks provide functions that are important to the economy. By mediating payments, converting household and corporate savings into investments and managing risks, they contribute to the efficient functioning of the real economy. At the same time, these functions entail risks that make the banks particularly vulnerable if confidence in them were to decline. Experience also shows that an economy is hit harder by a banking crisis than by other forms of economic crises. It is therefore especially important to prevent and reduce the impact of banking crises, as the economic costs can be high.

The capital structure of banks is very different to that of other companies. The proportion of equity in relation to liabilities is often very low for banks compared to other companies. This is due to several factors that make so-called debt funding less expensive than equity funding. As a result of the government deposit-guarantee scheme, in particular, depositing money with a bank is seen as a risk-free investment, which means

that banks have to pay very little for this form of funding. Consequently the banks hold relatively little equity capital, which makes them particularly vulnerable in bad times as their capital acts as a buffer against losses.

A bank's assets consist mainly of lending to the public or to other banks, and the bank's profitability is therefore dependent on these groups of borrowers paying the money they owe to the bank. Loan losses may also be particularly high in bad times when large groups of borrowers may find it difficult to pay.

Even though the losses may not be so substantial that they threaten the continuation of the bank's business operations, public confidence in the bank may weaken. This in turn could lead the depositors to want to withdraw their money in order to invest it elsewhere, which could lead to further distrust. Ultimately, there could be a run on the bank as more and more depositors withdraw their money. As the bank will probably not have sufficient liquid funds to

give all of the depositors their money, this process could soon lead to problems.

However, deposits are not a bank's only source of funding. As the public's demand for loans exceeds the amount of the deposits, the banks have increasingly begun to rely on market funding. For market funding at longer maturities the banks mainly use bank bonds and covered bonds. In the shorter term, the banks use short-term funding in the form of bank certificates, often issued in euros or US dollars. The interbank market also plays an important role for the banks' liquidity management.

On the interbank market, the banks borrow money from and to each other, which in normal times is an effective way of distributing resources as banks with a liquidity surplus can lend to banks with a deficit. For such a model to work, however, the banks must always be able to refinance their operations, which proved to be problematic during the recent financial crisis. The banks no longer trusted each other's creditworthiness and, at the same time, wanted to increase their liquidity buffers, which made it difficult to access liquidity on the

interbank market. It also became difficult to get funding through bank certificates and bonds as the interest of investors also declined. Several central banks were therefore forced to take measures to supply the banking system with liquidity through special credit facilities.

#### *Internationally coordinated banking regulations*

The banking system is primarily regulated on the basis of the so-called Basel regulatory framework, an international agreement on bank regulations. This framework is not in itself legally binding, but the member countries have agreed to implement the regulations in their national legislation. In the EU, implementation is carried out through regulations and directives. The first agreement, Basel I, was reached in 1988 and the main point of the agreement is that a bank's equity capital in relation to risk-weighted assets may not fall below 8 per cent. A figure for risk-weighted assets is arrived at by classifying a bank's assets into different categories and then weighting them in accordance with this classification.

The second agreement, Basel II, introduced a broader, risk-based framework based on credit risks, market risks and operational risks in order to better capture the risks faced by banks. Each of the three types of risk is in turn dealt in one of three “pillars”. Pillar 1 stipulates the lowest level of equity capital a bank must have in relation to its risk-weighted assets. Pillar 2 gives the supervisory authorities more tools to deal with individual banks. For example, banks can be subjected to special capital adequacy requirements for risks that are not covered by the first pillar. Pillar 3 introduces new transparency requirements to enable the market participants to better understand a bank’s risk profile and the methods used to calculate risk-weighted assets.

Although the capital adequacy requirement is the same as in Basel I, that is 8 per cent of risk-weighted assets, the risk-weighted assets in Basel II are more risk-sensitive in that the banks themselves may calculate the size of the risk-weighted assets using internal models approved by the supervisory authorities.

The latest agreement is Basel III, which will be implemented in the EU through CRR/CRDIV<sup>103</sup> and is planned to come into force on 1 January 2014.

The new regulations introduce a stricter definition of capital under which a bank’s capital base must consist to a greater extent of pure share capital. This type of capital must amount to at least 4.5 per cent of the risk-weighted assets, at the same time as the total capital requirement of 8 per cent remains. There is also a leverage ratio requirement that does not relate to risk-weighted assets but instead sets the banks’ capital in relation to total assets.

In addition, Basel III introduces a capital conservation buffer which should lead the banks to increase their capital levels above the lowest permitted level, and a countercyclical buffer which is intended to further increase the banks’ capital during periods of high credit growth. These buffers should not be confused with the minimum capital requirement, where a failure to comply with the requirement can lead to the banking license being revoked.

---

103 Capital Requirements Regulation and Capital Requirements Directive IV.

Failure to reach the required level for a buffer, on the other hand, leads to restrictions on share dividends. The buffers should instead be regarded as providing a further safety layer. The capital conservation buffer can prolong the time it takes for an individual bank to fall below the minimum permitted capital adequacy level. The countercyclical buffer increases the amount of capital a bank needs to hold when the level of lending is high, as such periods can often be followed by periods with substantial loan losses.

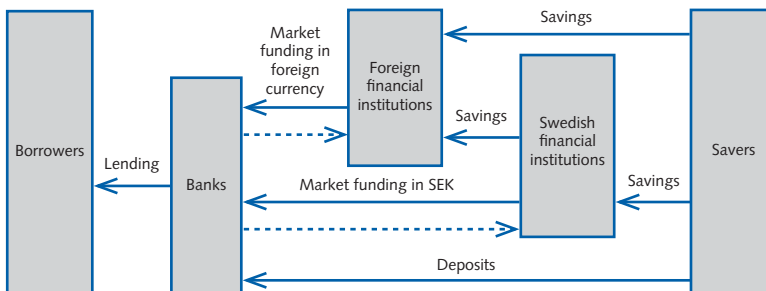
In order to reduce the risk of liquidity problems in the future, Basel III also introduces a requirement to ensure that the banks have adequate liquid

funds to cope with especially high payment outflows over a period of 30 days. A structural liquidity measure will also be introduced for the same purpose but with a time horizon of one year.

Base III was drawn up in response to the recent financial crisis. The crisis highlighted the strong interdependence between the participants on the international financial markets and the risk of contagion effects stemming from this interdependence. Figure 3 illustrates the banks' dependence on several sources of funding, including both Swedish and foreign financial institutions.

As a consequence of increasing dependence, the new regulatory framework focuses

**Figure 3. Illustration of banks' various sources of funding and the risk of contagion effects.**



Note 1. The figure illustrates the banks' dependence on funding sources of several types. The financial institutions that fund banks are in turn dependent on funding from other financial institutions (illustrated by the broken lines), which leads to a financial system characterised by a strong interdependence between these different participants. This in turn entails the risk of contagion effects if some of the institutions experience problems.

Note 2. The interdependence between the participants consists not only of direct funding but also of various types of derivative contract for example interest rate and foreign exchange swaps.

---

more strongly on macroprudential policy. For example, banks can be classified as being of either national or global systemic importance, which means

that they may be subject to additional capital requirements. Systemically-important banks will also be subject to a stronger supervisory mandate.

## 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 almost 42 per cent of the total lending of credit institutions.

There are, in all, six mortgage institutions in the Swedish market. The three largest institutions are part of banking groups and together account for 86 per cent of the mortgage institutions' total assets (see Table 9). At year-end 2012, lending by the mortgage institutions to the public amounted to SEK 2 259 billion. Lending with single-family dwellings and multi-family dwellings as collateral comprised the largest part – about 74 per cent (see Chart 21). The rest consists of lending with owner-occupied apartments and commercial and office buildings as collateral. Lending with tenant-owner apartments as collateral has increased very sharply and is now three times as large as at year-end 2003. Contributory factors here include both higher market prices and the conversions of rental properties to tenant-owned properties that have taken place during this period. In Chart 21, the mortgage institutions' lending to the public appears to decline between 2006 and 2007. This change is of a purely technical character and is due to the incorporation of SEB Bolån into SEB's banking arm in 2007 and its consequent exclusion from the statistics for mortgage institutions.

Interest rates on loans from mortgage institutions can be fixed, for different terms, or variable.<sup>104</sup> 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 2012, the

**Table 9. Mortgage institutions in Sweden, balance sheet totals and lending at year-end 2012 SEK billion**

	TOTAL ASSETS	LENDING
Stadshypotek AB	817	781
Swedbank Hypotek	834	737
Nordea Hypotek	449	430
AB Sveriges säkerställda obligationer	231	209
Länsförsäkringar Hypotek	127	101
Frispar Bolån	3	1
Total	2 462	2 259

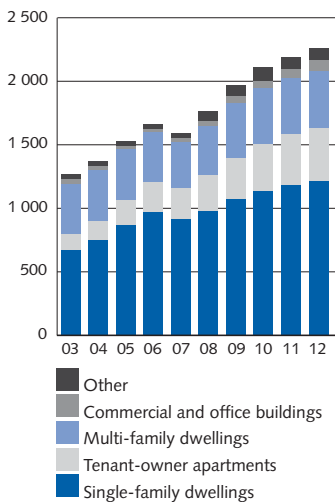
Note. Frispar Bolån is partly owned by SBAB, Sparbanken Öresund and Sparbanken Syd. AB Sveriges säkerställda obligationer is a fully-owned subsidiary of SBAB.  
Source: The Riksbank

<sup>104</sup> In this report, variable rate refers to an interest rate fixed for three months.

proportion of new loans granted at variable rates was 58 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 8 per cent and 34 per cent respectively of total new loans (see Chart 22).

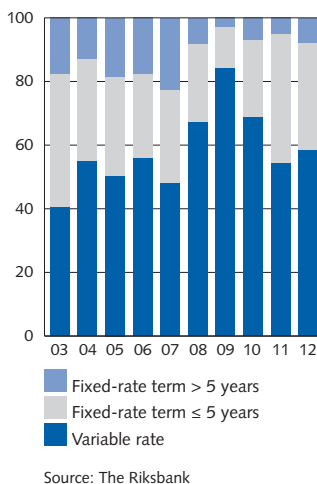
The distribution of the various fixed-interest periods in the mortgage institutions' total loan stock has varied over the most recent ten-year period. Over this entire period, the percentage of fixed-rate loans for over five years has declined, while loans at fixed rates for terms of five years or less and variable-rate loans have increased. In 2011 and 2012, loans at fixed rates for terms of less than five years in particular increased, at the same time as the proportion of variable-rate loans decreased. At the end of the year, 46 per cent of the total consisted of variable-rate loans, while 49 per cent of the total consisted of loans at fixed rates for terms of up to five years and 6 per cent of the total consisted of loans at fixed rates for terms exceeding five years (see Chart 23).

**Chart 21. Lending by mortgage institutions to the public  
SEK billion**



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. Consequently, this is not a real reduction but only a consequence of the organisational change in SEB.  
Source: The Riksbank

**Chart 22. New lending per year by mortgage institutions per the original fixed-rate term  
Per cent**





The mortgage institutions mainly obtain funding for the credit granted by issuing bonds, so-called covered bonds, corresponding to about 75 per cent of funding (see Chart 24).<sup>105</sup>

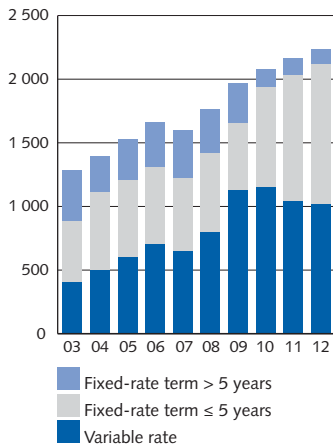
Their borrowing is obtained primarily from large asset managers, such as the insurance companies, the banks and the AP funds. 25 per cent of this funding is in foreign currencies. Funding by the bank-owned mortgage institutions primarily consists of loans from their parent bank.

The mortgage institutions strive to extend the maturities for their borrowing to better match the maturities for assets and liabilities. This has contributed to increased funding costs for the banks and thus increased differentials between the Riksbank's repo rate and the lending rates faced by households.<sup>106</sup>

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).

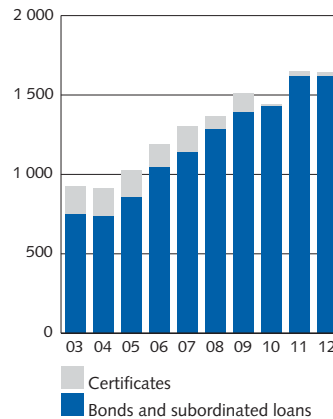
At year-end 2012, long-term borrowing through bonds amounted to SEK 1 621 billion, of which the most part was covered bonds, accounting for SEK 1 620 billion. Short-term borrowing through certificates amounted to only SEK 22 billion (see Chart 24).

**Chart 23. Loan stock of mortgage institutions per the original fixed-rate term SEK billion**



Source: The Riksbank

**Chart 24. Securities issued by mortgage institutions SEK billion**



Source: The Riksbank

<sup>105</sup> See the box on "Covered bonds" in The Swedish Financial Market 2012.

<sup>106</sup> See the box on "The relationship between the repo rate and interest rates for households and companies" in the Monetary Policy Report, February 2012, and the box "Effects of liquidity requirements for banks on Swedish mortgage rates" in the Financial Stability Report 2010:1.

## OTHER CREDIT MARKET COMPANIES

Other credit market companies include *finance companies* and *corporate- and municipality-financing institutions*.<sup>107</sup> At year-end 2012, 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 883 billion is attributable to the finance companies linked to the four major banking groups (see Table 10).

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, leasing<sup>108</sup> and factoring<sup>109</sup> 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.

**Table 10. The ten largest institutions in the category other credit market companies, balance sheet totals at year-end 2012**  
SEK billion

Svensk Exportkredit AB	311
Kommuninvest i Sverige	299
Nordea Finans Sverige AB	50
Handelsbanken Finans	48
Swedbank Finans AB <sup>1</sup>	36
Volkswagen Finans Sverige AB	22
Wasa Kredit AB	14
EnterCard Sverige AB	9
Nordax Finans AB	8
De Lage Landen Finans AB	7
Total, 10 largest	804
Total	883

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

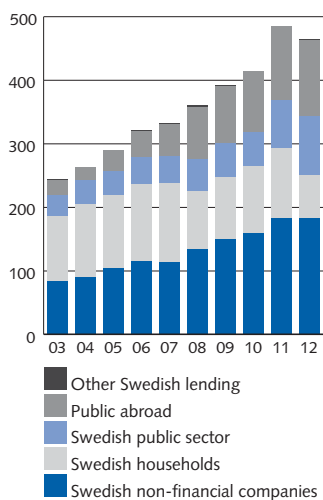
<sup>107</sup> Monetary securities companies and monetary investment funds (money market funds) are also included in the category other credit market companies.

<sup>108</sup> 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.

<sup>109</sup> 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.

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, Landshypotek AB aims to provide its members (agricultural and forestry companies in Sweden) with funding on favourable terms. The finance companies fund 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. Outstanding loans to the public by other credit market companies amounted, at the end of 2012, to SEK 464 billion (see Chart 25). Of these loans, about 39 per cent were made to Swedish companies, while 14 per cent went to Swedish households, 26 per cent to the public abroad and 20 per cent to the Swedish public sector. There are 52 companies categorised as other credit market companies on the Swedish market, of which 38 are finance companies. The remaining companies are corporate- and municipality-financing institutions, monetary securities companies and monetary investment funds.

**Chart 25. Lending by other credit market companies to the public**  
SEK billion



Source: The Riksbank

## 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.<sup>110</sup>

*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 amount of yield received by the private equity investment company. Private equity 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 companies were established at the end of the 1980s. However, the sector has grown rapidly, especially in recent years. According to the Swedish Private Equity and Venture Capital Association (SVCA), 143 private equity investment companies were operating in Sweden in December 2102. The majority of these focus on the buy-out segment. Together, Swedish private equity investment companies managed total assets in an amount of approximately SEK 500 billion at year-end 2012.<sup>111</sup>

In Sweden, an amount equivalent to a half per cent of GDP is invested in private equity through private equity investment

---

<sup>110</sup> For a description of private equity investment companies in Sweden, refer, for example, to the article "*Private equity investment companies in Sweden*" in *Financial Stability Report 2005:1*.

<sup>111</sup> Swedish Private Equity and Venture Capital Association: [www.svca.se](http://www.svca.se).

companies. A large part of the capital in Swedish equity funds is from foreign investors. Institutional investors, such as fund-in-fund managers and pension funds, are among the categories of investor.<sup>112</sup>

### 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 2012, there were 299 Swedish *insurance companies* active in the domestic market. In addition, 38 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 3 165 billion

**Table 11. The ten largest insurance companies' investment assets at year-end 2012, corporate groups SEK billion**

INSURANCE COMPANIES	INVESTMENT ASSETS
Alecta	554
Skandiakoncernen	443
AMF Pension	372
SEB Trygg Liv	313
Folksam	311
Länsförsäkringar	258
SPP Livförsäkring	148
Swedbank Försäkring	105
Handelsbanken Liv	79
If Skadeförsäkring	71
Total, 10 largest	2 655
Total	3 165

Note. Excl. AFA group  
Source: Insurance Sweden

<sup>112</sup> Swedish Private Equity and Venture Capital Association: [www.svca.se](http://www.svca.se).

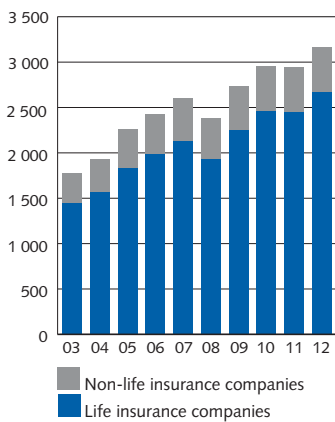
at year-end 2012 (see Chart 26). Slightly less than 85 per cent of this amount was held by the ten largest insurance companies (see Table 11).<sup>113</sup>

Insurance companies are divided into life assurance and non-life assurance companies. Life assurance and non-life assurance 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 assurance 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 cover 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.

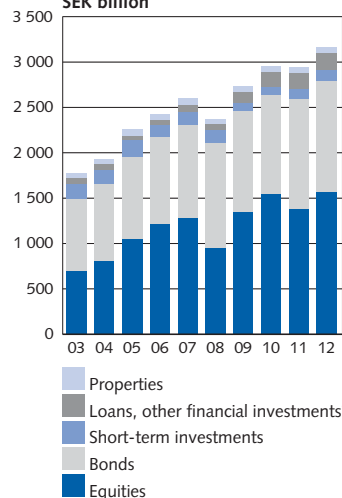
Life assurance can be divided up into traditional life assurance and unit-linked insurance. *Traditional life insurance* pays a guaranteed

**Chart 26. Investment assets of the insurance companies  
SEK billion**



Source: Statistics Sweden

**Chart 27. Insurance companies' investment assets, by type of financial asset  
SEK billion**



1. Changed definition from the first quarter 2009. The current definition includes lending, derivatives and repos.  
Source: Statistics Sweden

<sup>113</sup> The total investment assets indicated in Table 11 and in Chart 26 at the start of the chapter differ. This is because the figures in Table 11 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 2010 (source: Insurance Sweden).

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 companies in order to receive compensation for property damaged in an insurance event. Unlike life assurance, non-life assurance 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 assurance 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 should be equivalent to the amount required by the company to ensure that it can meet all the commitments that may arise from its existing insurance policies.<sup>114</sup> Shareholders' 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 and it is the shareholders who must contribute capital if the company does not fulfil its undertakings. 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

---

<sup>114</sup> 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.

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. The life assurance companies' investment assets accounted for almost 85 per cent of the insurance companies' total investment assets of SEK 3 165 billion (see Chart 26).

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 2012, equities accounted for slightly less than 50 per cent of investment assets. Holdings of bonds and short-term investments made up about 39 per cent and 4 per cent respectively of the investment assets. Investments in properties only accounted for a minor part (see Chart 27). 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 2012, a total of 78 insurance associations were operating, with total assets amounting to approximately SEK 125 billion.<sup>115, 116</sup>

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 2012, there were around 2 056 active pension foundations in Sweden, which, together, had about SEK 179 billion in assets.

---

<sup>115</sup> 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.

<sup>116</sup> The figures for the insurance associations' total assets refer to year-end 2011.



## 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 59 per cent of the fund market (see Table 12). In the case of these fund management companies, the banks' branches or Internet services act as distribution points. Fund investment in Sweden totalled SEK 2 013 billion in managed capital at year-end 2012. This can be compared with Swedish households' total deposits with the banks, which amounted to SEK 1 269 billion.

The assets managed in equity funds amounted to SEK 1 054 billion at year-end 2012. 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 476 billion and SEK 387 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 both investment strategies and the financial instruments that may be used, such as derivatives. The assets managed in hedge funds totalled SEK 96 billion at year-end 2012 (see Table 13).

Fund management companies affiliated to insurance companies have markedly increased their share of the fund market in recent years, due to the growing interest in choosing funds for pension saving. This, in

**Table 12. The ten largest fund managers, assets managed, December 2012**  
SEK billion

Robur	468
SEB	281
Nordea	231
Handelsbanken	206
Seventh AP Fund	132
Länsförsäkringar	71
AMF Pension	69
SPP Fonder	64
Brummer & Partners	53
Skandia Fonder AB	50
Total, 10 largest	1 624
Total	2 013

Source: MoneyMate

turn, is partly a result of Sweden's pension reform in 2000, which saw the introduction of a premium pension system (PPM). 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 assurance companies.

During 2008 the total assets of equity funds decreased in comparison with the previous year, both in terms of SEK and as a proportion of the total investment fund assets. This was largely due to the negative developments in the stock markets. Following this, mutual fund wealth increased substantially until 2010. Mutual fund wealth subsequently fell back slightly, but, at year-end 2011, was still above the levels prevailing prior to the financial crisis. Of total mutual fund wealth at the end of 2012, equity funds accounted for about 50 per cent, fixed income 25 per cent and other funds 25 per cent (see Table 13).

#### 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.

**Table 13. Mutual fund wealth, per type of fund  
SEK billion**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Equity funds	445	514	733	868	895	543	863	1 160	933	1 054
Fixed-income funds	244	275	310	340	354	373	378	403	466	476
Mixed funds	141	158	202	238	247	204	254	297	308	387
Hedge funds	43	50	71	82	76	66	88	84	95	96
<b>Total</b>	<b>873</b>	<b>997</b>	<b>1 316</b>	<b>1 528</b>	<b>1 572</b>	<b>1 185</b>	<b>1 583</b>	<b>1 944</b>	<b>1 802</b>	<b>2 013</b>

Sources: MoneyMate and Fondbolagens förening

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.<sup>117</sup> One restriction is that at least 30 per cent of the funds' assets shall be invested in low-risk debt securities. A limited portion of the assets 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 shares and debt securities and, like the first four AP funds, is also allowed to invest abroad.

At year-end 2012, the investment assets of the AP funds totalled SEK 1 123 billion. This can be compared with life assurance companies and the fund management companies, whose investment assets amounted to SEK 2 665 billion and SEK 2 013 billion respectively in December 2012.

## 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.<sup>118</sup> 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

---

<sup>117</sup> 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.

<sup>118</sup> The role of market-makers is described in more detail in the chapter *The financial markets*.

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 2012, just over 200 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. Of the securities companies registered at year-end 2012, two companies held seven of the eight different licenses for securities trading activities. Furthermore, at year-end 2012, one company held the eighth license.

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

As many securities companies concentrate on arranging contracts between potential buyers and sellers, their balance sheets are often relatively modest. At year-end 2012, the total assets of the securities companies amounted to about SEK 23 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 38 banking companies registered in Sweden at year-end 2012, 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 2012. 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

**T**he 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, ordinances decided by the government or statutes issued by Finansinspektionen. However, the content of the regulations is largely determined by decisions taken at EU level.

EU regulations and directives are among the legal acts the EU can decide on. An EU Regulation is binding and directly applicable in Sweden, and 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 states, for instance, what banking and financing business entails, and that banks and credit market companies need a licence from Finansinspektionen, the Swedish Financial Supervisory Authority, 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 days of the customer's request. A financing business also combines two operations: first, receiving funds from the general public and, second, 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 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 (credit institutions) come under the supervision of Finansinspektionen.

The Banking and Financing Business Act describes the requirements that banks and credit market companies 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. 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.

Another act applicable to the activities of banks and credit market companies is the **Capital Adequacy and Large Exposures (Credit Institutions and Securities Companies) Act**. This act states how much buffer capital a bank or credit market company should hold in relation to the risks it

takes, and how this capital should be calculated. Another important act is the **Money Laundering and Terrorist Financing (Prevention) Act**. This act aims to prevent financial operations from being used to conceal the connection of property with criminal activities or the funding of terrorism.

Examples of other laws governing banks and credit market companies are the **Consumer Credit Act** and the **Deposit Insurance Act**. 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 Deposit Insurance Act 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**

**Instruments** cover accounts, services and products dealing with 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 to 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 government 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.

#### *Deposit companies*

Under the **Deposits Business Act**, other limited companies and economic associations besides the credit institutions and securities companies 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 the company can receive. Deposit companies are not subject to supervision but are to be inspected by Finansinspektionen once a year. These companies are also covered by the Money Laundering and Terrorist Financing (Prevention) Act. The money received by deposit companies is not covered by the deposit guarantee or investment protection.

#### *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 assurance and non-life assurance operations, activities that, in principle, must be conducted in separate companies. In addition, a distinction is made between insurance companies providing direct insurance and reinsurance companies. Reinsurance companies may not conduct any

other business activities than reinsurance operations. However, there is nothing to prevent life assurance and non-life assurance 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 assurance, life assurance, accident insurance, health insurance and consumer insurance. The **Insurance Mediation 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 **Securities Market Act** covers several businesses that are important to a well-functioning securities market, namely securities business, 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 shares) on behalf of customers, financial advice, discretionary portfolio management and investment advice regarding financial instruments. The companies that are allowed to conduct securities business are called securities institutions (or securities companies). The 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 Capital Adequacy and Large Exposures (Credit Institutions and Securities Companies) Act and by the Act on Measures against Money Laundering and Terrorist Financing.

For *stock markets* and similar regulated markets, the Securities Market Act includes, among its provisions, the demands made of the stock market's 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 into regulated markets. Moreover, there are provisions regarding the demands made on the stock market owners and management.

According to the Act, 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.

Since 1 January 2013, the provisions on licensing and supervision in the **EU regulation on OTC derivatives, central counterparties and trade repositories (EMIR)** have applied to the provision of clearing services such as *central counterparties*. 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 the types of derivative contracts 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, for example, the **Financial Instruments Trading Act** and the **Financial Instruments Trading (Market Abuse Penalties) 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 declare holdings of equities. The Financial Instruments Trading (Market Abuse Penalties) 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 currently 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 shares 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 or 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 applying to 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 parties are issued by Finansinspektionen, 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.<sup>119</sup> 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 different types of payments, for example simple payments such as those made in cash, or more complicated payments, for example card payments where one or more intermediaries are required to make the payments. Three different types of payments and the demands they impose on the financial infrastructure are described below.

#### SIMPLE PAYMENTS

In a *simple payment*, for example a cash payment, the claim has been met when the buyer pays the seller using 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 4 provides an example of a simple payment.

A and B may be individuals, companies or authorities. A buys a product or service from B and pays for it by making some type of payment to B. These steps complete the 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, supporting

---

<sup>119</sup> 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.

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 funds. The bank then transfers the funds 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 5 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 4. Example of a simple payment

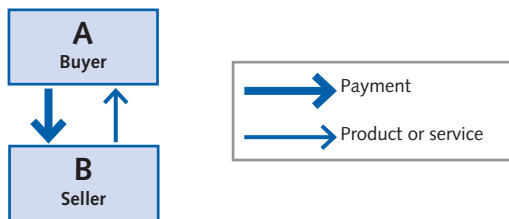
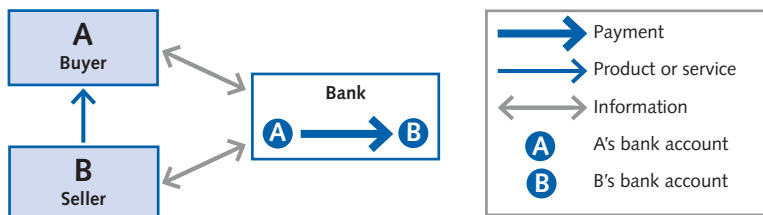


Figure 5. Example of a payment using an intermediary



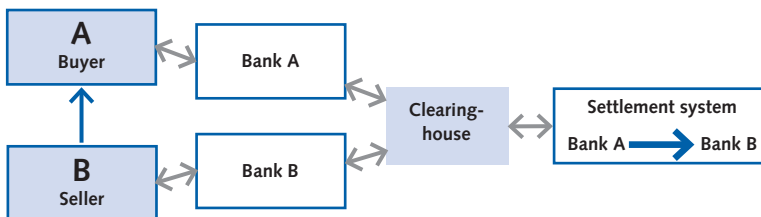
the completion of the payment.<sup>120</sup> The financial infrastructure that is required for this type of payment is illustrated in Figure 6.

The processes managed within this infrastructure can generally be summarised in three steps.<sup>121</sup> 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 and checking that the payment is valid. 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.<sup>122</sup>

The second step entails clearing the transaction. This involves compiling instructions and information about the transfer. The transaction is cleared<sup>123</sup> by a clearing organisation. In the example shown in Figure 6, 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. This reduces the parties' risk exposures to each other and thus their liquidity requirements. If the clearing positions are compiled, then

Figure 6. Example of a payment using several intermediaries



120 Recently, however, some institutions have begun to offer what are known as real-time payments where the time lag is reduced to a few seconds. Read more about this under Bankgirot and the box about Swish.

121 The three sub-processes – verification/authorisation, clearing and settlement – are also performed when the payer and the recipient have accounts with the same bank, but in this case are handled using the bank's internal systems.

122 The third step, which is described below, entails checking whether the bank participating in the settlement system has sufficient liquid funds to enable settlement of the payment.

123 Compilation of instructions and information about the transfer.

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 will then have a single amount due from or payable to the other participants.<sup>124</sup> In some cases, clearing can instead be conducted through a central counterparty.<sup>125</sup>

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 verified 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 is then carried out using central bank money in the accounts in a settlement system that is usually provided by the central bank. This settlement system can thus 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 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 shares, bonds and derivatives. In a transaction involving shares 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

---

124 If we instead assume 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.

125 Read more about central counterparty clearing in the section on transactions when trading with financial instruments.

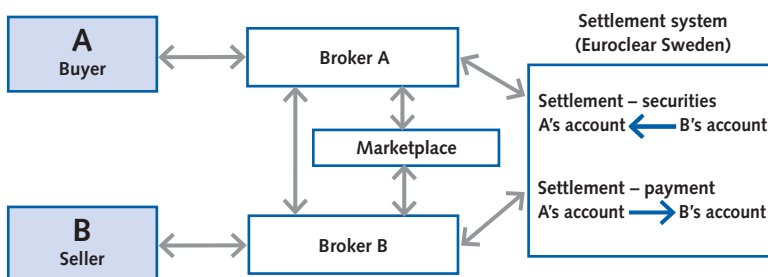


seller to the buyer (the securities process). Securities trading is outlined in Figure 7.<sup>126</sup>

A securities transaction consists of three steps. In the first step the transaction is initiated. This takes place when A and B have placed their buy and sell orders in the marketplace, through a broker, and the orders have been matched. A broker can also find a counterparty outside the marketplace, or itself act as a counterparty, and such transactions are then referred to as OTC transactions<sup>127</sup>. As large sums are handled in securities trading, the security aspect is particularly important. A misunderstanding 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.<sup>128</sup> Here the identity of the parties is verified and 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 minimising 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 shares or bonds. In a derivatives transaction, the parties enter into a contract where the value of the contract is dependent on changes in the value of an

Figure 7. Example of a financial instrument transaction



126 Figure 4 illustrates an example of a transaction without a central counterparty.

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

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

underlying instrument.<sup>129</sup> Such a transaction does not thus necessarily involve, but may involve, a transfer of title to the underlying instrument, as is always the case in connection with a share or bond transaction. Moreover, in a derivatives transaction the investor is exposed to a counterparty risk for a longer period of time than in a share 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). 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 in relation to many counterparties is thus replaced by counterparty risk facing only

Figure 8. Exchange of funds in securities transactions without a central counterparty<sup>130</sup>

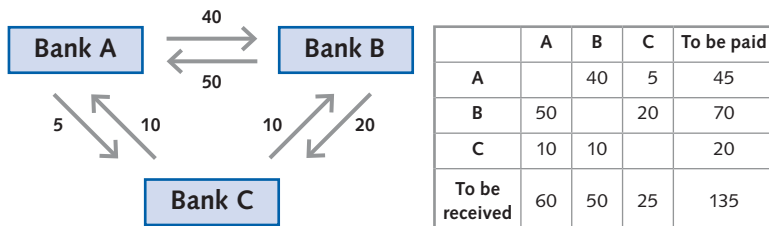
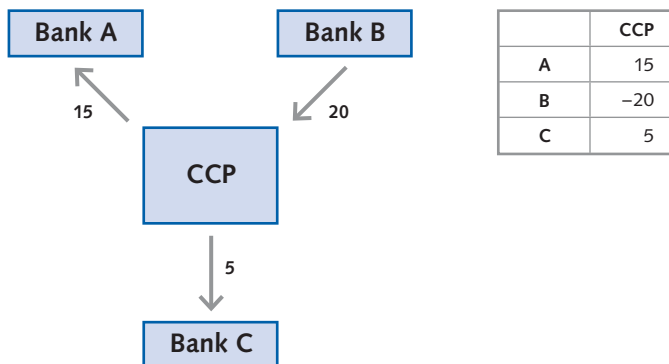


Figure 9. Exchange of funds in securities transactions with a central counterparty (CCP)



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

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

one, the central counterparty. Figures 8 and 9 illustrate the difference between not using and using a central counterparty in terms of turnover and the number of settlement transactions.

If the transactions are cleared and settled without using a central counterparty, as in Figure 8, each of the three participants will have to make and receive two payments. In total this will involve six transactions to a value of SEK 135. If the transactions are instead cleared and settled through a central counterparty, as in Figure 9, the number of settlement transactions decreases 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 9 and is the difference per participant between the final column and the final row in the table in Figure 8. This way, the turnover is reduced to SEK 40. However, the comparison in the example requires that all transactions in Figure 8 can be managed by the central counterparty in Figure 9. If this is not the case, it is not certain that the turnover and net positions can be reduced.

## The OTC derivative reform – more robust risk management and increased transparency

**A**fter the most recent financial crisis, two problems were identified on the market for OTC derivatives<sup>131</sup>; a lack of transparency and inadequate risk management. The OTC derivative market is a very large market and its size, combined with the problems, entails major risks to the global financial system. The G20 leaders<sup>132</sup> have therefore agreed that the OTC derivatives market shall be reformed.<sup>133</sup> The proposal they have agreed on consists of five parts:

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

### *Reporting to trade repositories*

All trading in OTC derivatives must be reported to trade repositories. Reporting of these transactions increases transparency by gathering the information on OTC derivatives into central trade repositories. This makes it easier, particularly for the authorities, to gain an idea of the exposures the individual institutions have and of the OTC derivatives market as a whole.

### *Trading on marketplaces*

Trading on organised marketplaces contributes to increased transparency as there are clear and transparent rules for trading and information is collected on volumes and prices. In addition, trading on marketplaces helps reduce market abuse. However, not all OTC derivatives contracts are suitable for trading on

<sup>131</sup> In a derivatives transaction, the parties enter into a contract where the value of the contract is dependent on changes in the value of an underlying instrument. Such a transaction does not thus necessarily involve, but may involve, a transfer of title to the underlying instrument, as is always the case in connection with a share or bond transaction. OTC stands for over the counter and means that the instruments are not traded on a regulated/organised marketplace.

<sup>132</sup> The Group of Twenty (G20) is the foremost forum for international cooperation regarding the most important items on the global economic and financial agenda. The G20 consists of the finance ministers and central bank governors from 19 countries. Sweden participates only on the occasions when Sweden has chairmanship of the EU Council of Ministers, which it had in 2009.

<sup>133</sup> The G20 leaders reached agreements on reforming OTC derivatives market reforms primarily in 2009, but also updated the agreement in 2011.

marketplaces, for instance, if they are too customised or if the number of contracts is very small.

#### *Central counterparty clearing*

To improve risk management, and in particular counterparty risks<sup>134</sup>, there is a requirement that institutions entering into OTC derivative transactions should use 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 well. The main risk for a central counterparty is that one or more of its members will go bankrupt. If one member goes bankrupt, this could mean that the central counterparty suffers losses as

a result of possible exposures to this member. A central counterparty therefore has access to predetermined financial resources to protect itself against such losses.

#### *Margin requirements for bilaterally-cleared OTC derivatives*


Not all OTC derivatives are suitable for clearing through a central counterparty; the risks in these OTC derivative contracts must therefore be managed in a different way. Instead, the counterparties must pledge collateral to one another to improve risk management in these contracts. The collateral the counterparties pledge to one another should mean that if one counterparty fails to meet its part of the agreement, the losses for the other counterparty will be smaller or, ideally, non-existent.

#### *Higher capital requirements for exposures in bilaterally-cleared OTC derivatives*

Although the banks' risk management of OTC derivatives improves through the above-mentioned new requirements,

---

<sup>134</sup> Counterparty risk is the risk that a counterparty will default/go bankrupt before the transaction has been settled.



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.

## 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 deliver the sold currency without receiving the bought currency. This entails full counterparty risk.<sup>135</sup> 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 arise 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. However, if the recipient is another Swedish bank or has an account with another bank, the payment must first pass through the Swedish financial infrastructure before it reaches the recipient.

## Retail payments

Retail payments is a term used for payments of relatively small amounts that are made in very large numbers.<sup>136</sup> These can be made in two ways. Either the payment is made directly, for example by paying in cash. Or it can be made through a bank account by using a payment instrument, such as a card. These two types of payment differ in

---

<sup>135</sup> Counterparty risk is the risk of a borrower failing to meet his commitments. In foreign exchange transactions this risk is often called Herstatt risk.

<sup>136</sup> For further information on retail payments in Sweden, see the Riksbank Study, June 2013, "*The Swedish retail-payment market*".

that cash represents a value while a card – a payment instrument – is instead a way of handling or accessing value by initiating a transfer between accounts.

In a direct payment involving the use of cash or, for example, a prepaid card, no financial infrastructure is needed for the actual transaction. However, such an infrastructure is required when using a payment instrument that initiates a transfer between accounts, otherwise it will not be possible to carry out the payment. A retail payment can be paper-based, that is initiated via a cheque or a giro form, or electronic, which means that it is initiated electronically through a card or online banking, for instance.

New payment instruments have appeared in recent years, for example electronic money (e-money), payment using mobile phones (m-payment) and new types of prepaid card. This section describes the types of retail payments used in Sweden. The different ways that retail payments can be made are outlined in Figure 10.

#### CASH AND PREPAID CARDS

Cash is primarily used for the payment of small amounts, but accounts for a large share of the total number of payments. However, this share has declined in recent years as the share of card payments has increased. As there are no overall statistics on cash usage, this can only be estimated. Measuring the amount of banknotes and coins in circulation in relation to gross domestic product (GDP) gives an indication of the extent of the use of cash.<sup>137</sup> Such a measurement

Figure 10. Outline of retail payments

	Account-based	Direct
Electronic	Credit transfers Direct debit Transfers Debit cards Charge cards Credit cards (E-money)* (Mobile payments)*	Prepaid cards (E-money)*
Paper-based	Paper-based credit transfers Money orders Cheques*	Cash

\* These methods are not very common in Sweden.

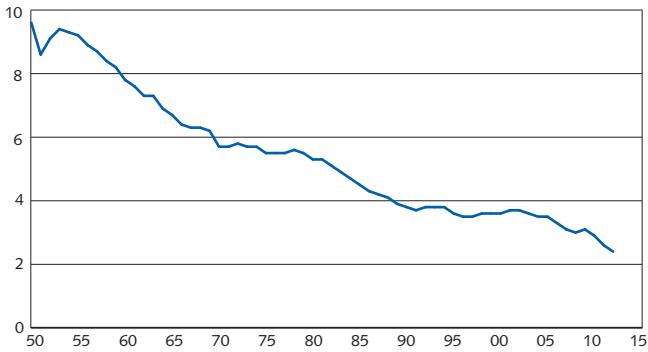
<sup>137</sup> Previously, the term M0 was used to denote the amount of banknotes and coins in circulation.



shows that the share of banknotes and coins in circulation in Sweden has fallen from 10 per cent in 1950 to 4 per cent today. In 2012, the share of banknotes and coins in circulation declined while GDP increased and the curve thus continued downwards from 2011 (see Chart 28).

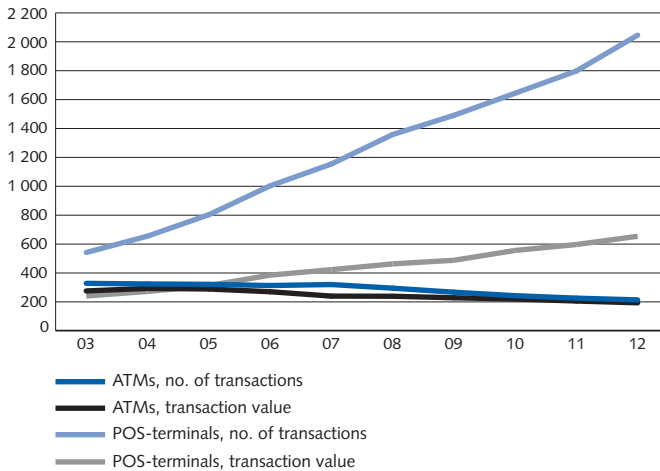
Statistics on cash withdrawals from ATMs show that the total transaction value has fallen in recent years. Between 2004 and 2012 it fell by just over 34 per cent. On the other hand, the number of transactions using ATMs has not fallen to the same extent, which indicates that the size of the cash withdrawals is decreasing (see Chart 29).

**Chart 28. Banknotes and coins in circulation relative to GDP**  
Per cent



Source: Statistics Sweden

**Chart 29. ATMs and payment terminals**  
Number of transactions (millions) and SEK billion



Source: The Riksbank

Prepaid cards are of two types: internal and external. An internal card can only be used at one or a few places, for example within the same chain of shops, and can act either as an electronic wallet or as a traditional charge card for an individual issuer. An external card can also be used as a means of payment at companies other than the one that issued the card. Prepaid cards have an important similarity to cash in that the customer is able to remain anonymous.

#### PAYMENT INSTRUMENTS: ELECTRONIC AND PAPER-BASED

Irrespective of which payment instrument is used to initiate a payment, they are all based on the same principle; that is that money is transferred from the buyer's account to the seller's account. This entails three important differences compared to cash:

- A payment instrument, for example a debit card, represents no intrinsic physical value.
- A financial infrastructure is needed to access the accounts.
- There is often a time lag between the time of payment and the final settlement of the payment.

#### Electronic payment instruments

##### **Card payments**

Cards are primarily used for payments where the buyer and seller meet directly. However, cards are also used for remote payments, such as online payments. They are also used to withdraw cash from ATMs.

The cards issued by banks in Sweden are debit cards or credit cards which are tied to an international card system, usually Visa or MasterCard. Some non-financial companies also issue cards, so-called charge cards. These include, for example, retailers and petroleum companies. The three types of card are described below.

A *debit card* debits the transaction amount from the card holder's bank account directly and does not give the holder any credit.

A *credit card* gives the card holder the option of having credit up to a certain limit. Either the entire debt or a portion of it is paid after a specified period. In the latter case, the outstanding debt is rolled over into a new period. Interest must then be paid on the remaining debt.

A *charge card* works in a similar way to a credit card with the difference that the entire debt must be paid in full after a specified period and thus cannot be rolled over.

The use of cards has increased rapidly in Sweden in recent years. Between 2003 and 2012, the number of card payments tripled, from 759 million transactions in 2003 to 2 190 million in 2012. The value of

these payments has more than doubled, from SEK 408 billion in 2003 to SEK 849 billion in 2012 (see Appendix 1, Table X). Previously, cards were used more often to withdraw cash from ATMs than to make payments. In recent years, however, there has been a marked change. In 2004, the transaction value in card payment terminals exceeded that for cash withdrawals from ATMs. According to statistics from 2012, the number of card transactions in point of sale (POS) terminals was over nine times higher than the number of cash withdrawals from ATMs (see Chart 29). In terms of both the number of payments and the transaction value, cards are the most widely used payment instrument (see Chart 30).

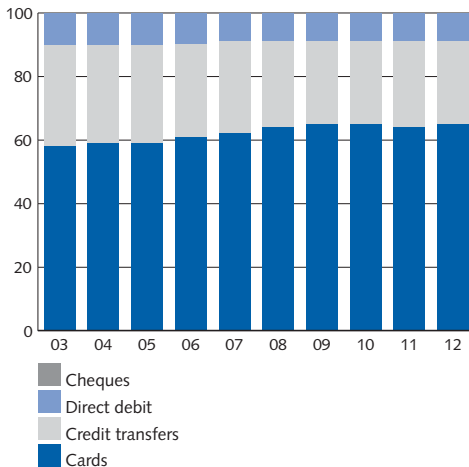
The value of an average card payment has fallen over the last ten years, from just over SEK 500 to just below SEK 400 (see Chart 31). Swedes are thus using cards to a greater degree to pay smaller amounts. Cards are thus increasingly acting as a substitute for cash.

### 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. Credit transfers are used for recurring payments, often in a contractual relationship, for example with an electricity or telecom company.

In terms of SEK, the transaction value for credit transfers and direct debits amounted to SEK 13 646 billion in the year 2012. The

**Chart 30. Use of payment instruments**  
Per cent

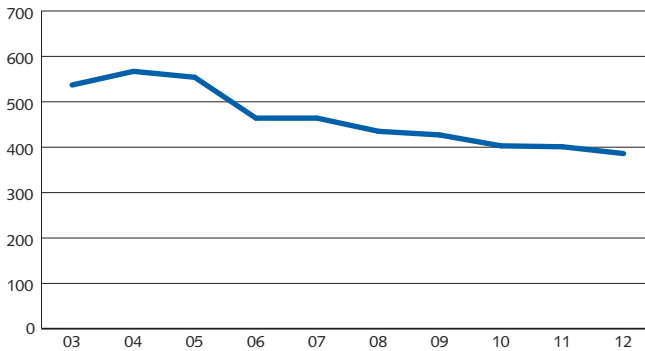


Source: The Riksbank

total number of credit transfers in the same year was 859 million. Credit transfers are thus relatively few in number compared, for example, with card payments (see Chart 30), but in terms of value credit transfers and direct debits account for 90 per cent of the total transaction value of the account-based payment instruments.<sup>138</sup>

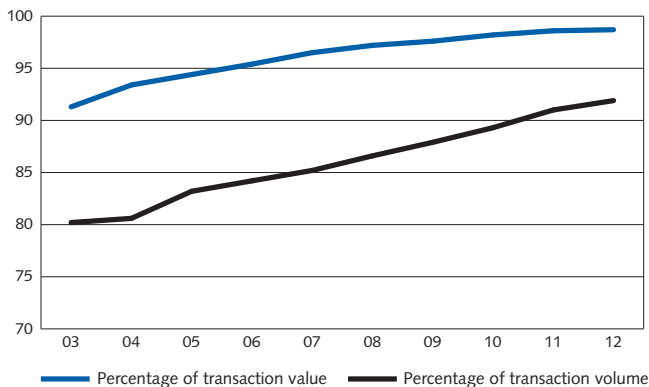
Most credit transfers and account-to-account transfers are now initiated electronically (see Chart 32).<sup>139</sup> Usually they are initiated using an online bank or via data files that can be used by companies. A few credit transfers are still paper-based and are mainly initiated by households using credit transfer forms that are posted, or over the counter at a bank.

**Chart 31. Average value of a card payment  
SEK**



Source: The Riksbank

**Chart 32. Percentage of electronically initiated debits and transfers  
Per cent**



Source: The Riksbank

<sup>138</sup> This statistic does not include transfers between accounts within the same bank or transfers between PlusGiro accounts in Nordea.

<sup>139</sup> 92 per cent of the transaction volume and 99 per cent of the transaction value.

### **Direct debits**

Direct debits are based on an agreement between the payer and the recipient on the automatic debiting of the payer's account. Direct debits, like credit transfers and account-to-account transfers, are used for remote payments and usually for recurring payments to a party that the payer has a contractual relationship with, such as a landlord or insurance company.

### **E-money**

In theory, e-money is an electronic substitute for cash in the form of digital value units<sup>140</sup> that exist independently on a card or a computer. In practice, however, cash and e-money do not have exactly the same characteristics, as e-money also has many similarities with account-based payments. Like a card payment, e-money also requires a financial infrastructure and the real difference compared with an account-based payment is that the money is deposited with an e-payment company rather than in a bank account. The e-payment company acts as an intermediary between the buyer and seller. More information on e-payment companies is presented in the section on payment channels.

### Paper-based payment instruments

#### **Credit transfers**

Paper-based credit transfers and account-to-account transfers are usually initiated by sending a completed credit transfer form by post or over the counter at a bank. They constitute only a small proportion of all credit transfers.

#### **Cheques and money orders**

A cheque is a written instruction from the writer of the cheque to the redeeming bank to pay a certain amount, either to the person writing the cheque or another party specified by this person. These days, cheques are used to a very limited extent.

Money orders are more common. Money orders are a secure form of payment instrument used in connection with major purchases that are paid in cash, for example car purchases. A money order is bought at one of the Swedish banks for the desired amount and is issued to

---

<sup>140</sup> Electronic registration of funds that can be used for payments without being linked to an individual account.

the recipient or to the buyer of the money order. If it is issued to the buyer, it can at a later date be transferred to the recipient.

#### PAYMENT CHANNELS – DIFFERENT WAYS OF MAKING A PAYMENT

An electronic payment can be made using different types of payment channels. These are described below.

##### Online banking

The public uses online banking services to a great extent in Sweden. According to a survey carried out by the Riksbank in autumn 2012, almost 80 per cent state that they have access to online banking services to pay their bills.<sup>141</sup> The number of credit transfers and account-to-account transfers made online is increasing rapidly, which in turn is reducing the percentage of paper-based payments and increasing the percentage of electronically-initiated payments. Swedish banks are also offering more and more forms of online payment services. The trend is towards giving private individuals greater opportunities to overview their financial situation and make use of various financial services online.

##### E-payment companies

As e-commerce and Internet auctions between private individuals have become increasingly common, the need for a quick and simple way to make payments between two unknown parties has arisen. E-payment companies focus on securing payments online by acting as a link between, for example, the buyer's debit card and the payee. The companies quite simply provide a type of e-wallet to which money is transferred and then converted to e-money. This reduces the risk of card fraud. Transfers between different accounts and international payments in different currencies are possible. The best-known e-payment company is PayPal, which is registered in Luxembourg but is also active on the international market.

##### M-payments

M-payments is the collective term for payments made using a mobile phone as a payment intermediary. The mobile phone can thus be regarded as a payment channel, a payment instrument or a prepaid card depending on how it is used and on how one views this. The

---

<sup>141</sup> See the box on *Payment behaviour in Sweden*.

mobile phone can also act as a carrier of information by providing direct access to the banking services offered online and functions similar to those of a payment instrument or a prepaid card. There are many indications that m-payments will become increasingly common and a number of initiatives and market collaborations are emerging in various forms.

Generally speaking, an m-payment can be made in four different ways:

1. The payment can be debited directly by means of a debit card.
2. The payment points directly to a bank account.
3. The payment is made by text message. In this case the telecom operator charges the customer, usually on the regular telephone bill.
4. A mobile application that can function as a prepaid card.

## Swish – a new mobile payment service

Swish is a new mobile payment service offered by six banks<sup>142</sup> in Sweden. The service was launched at the end of 2012 and makes it possible for individuals who are customers at one of these six banks to use a smartphone to send and receive payments in real time directly through their bank accounts. The fact that the payments are made in real time means that the money is deducted from the payer's account and transferred to the recipient's account at the same time as the payment is initiated.

This is made possible by a new payment system, Payments in real time. The system was developed by Bankgirot, which runs and manages it. "Normal transfers" between people who are customers in different banks can only be settled during RIX opening hours – payments made in the evenings and at weekends will not be settled until the next banking day. With Payments in real time, payments can be settled 24 hours a day,

every day of the year. For bank customers this means that a transfer via Swish is executed immediately, even if the sender and the recipient have accounts in different banks. Swish is the first and only product to use Payments in real time.

To use Swish one must download an application (app) for Swish to a smartphone and have a mobile Bank ID installed on the phone. A person who has Swish can then send payments to another person who has also installed Swish. The recipient account is identified through the mobile phone number, which can be entered directly into the app, or looked up in the phone directory accessed via the Swish app.

All six banks are offering the service free of charge during an initial period, with the length of this period differing between the banks. The pricing of the service will vary between the banks, as with other services offered by them.

---

142 Danske Bank, Handelsbanken, Länsförsäkringar, Nordea, SEB and Swedbank.



## Payment behaviour in Sweden

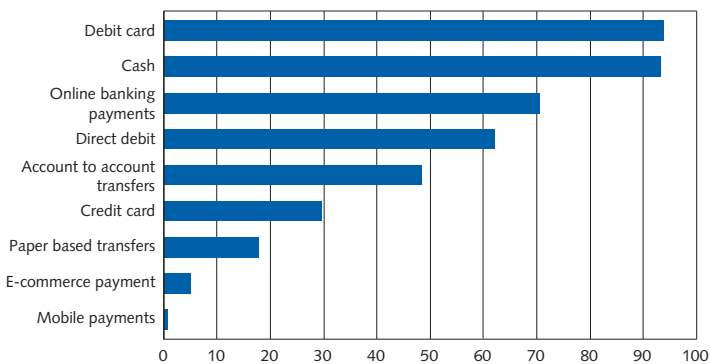
In the autumn of 2012, the Riksbank conducted a survey aimed at increasing its knowledge of the payment behaviour of the Swedish population. The survey aimed to reflect typical payment behaviour in Sweden by including people of various ages and educational backgrounds in both rural and urban areas. The Riksbank carried out similar surveys in 2009 and 2010.

The results of the survey show that almost all, just over 95 per cent, of the respondents have access to a debit card, which is a small increase in relation to 2010. The figures for those who can pay their bills through online

banking services and those who have access to credit cards remain largely unchanged since 2010, almost 80 per cent and just over 40 per cent respectively. The results also show that the percentage who have the possibility to pay their bills on paper forms sent by post has declined from around one third to just under one quarter since 2010. Around 60 per cent state that they have used direct debt services in the past month.

Just over 60 per cent have bought goods online. Cards are the most common means of payment for this. However, around half of the respondents have paid by invoice at some

Chart 33. Means of payment used last month  
Per cent



Source: The Riksbank

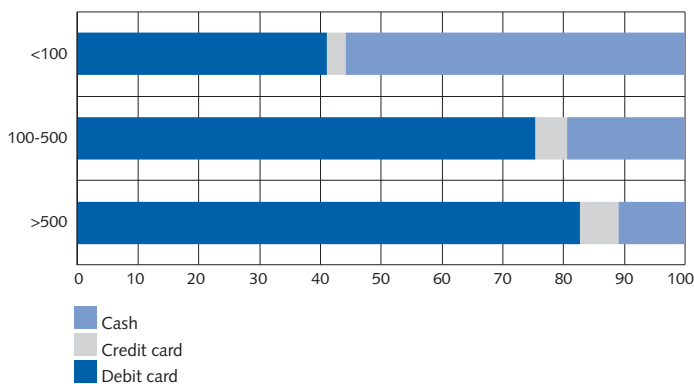
point and almost one third by *direktbetalning*<sup>143</sup>, that is, when one clicks on a link from the web shop to their online banking service where payment is made directly from the bank account.

There is a difference between which payment methods the respondents *have access to* and which methods they *have actually used* in the past month. Chart 33 shows which method of payment the respondents *have actually used*. However, with regard to cash payments and card payments they are largely the same – those who have access to cash and cards make use of them. For payments with, for instance, e-money such as PayPal, around one sixth state that they have access to these

methods, but only around 5 per cent say that they have used such a method in the past month.

The interviewees were also asked which means of payment they used the last time they made a purchase. The responses here show a trend towards an increase in the percentage of card payments and a decline in the percentage of cash payments. Just under 60 per cent answered that they had used a debit card, and one third that they had used cash. As Chart 34 shows, cash is still the most common means of payment for purchases of less than SEK 100, while debit cards are the most common means for purchases of more than SEK 100. The chart also shows that

**Chart 34. Means of payment at different purchase sums**  
Per cent



Source: The Riksbank

143 Direktbetalning is a uniquely Swedish payment solution.

willingness to pay by debit card seems to successively increase in line with the amount of the purchase. The same pattern seems to apply for credit cards, which also tend to be used more frequently for larger purchase amounts. To the questions of whether they perceive payments by card and cash in shops to be quick and simple, the figures were largely the same – 90 per cent answered yes to the questions for both methods of payment.

The respondents, on the whole, feel secure using cards, cash and online banking.

Most respondents stated that they make ATM withdrawals one to three times per month. Just over one in ten say that they withdraw cash one or more times per week. Withdrawals of between SEK 200 and SEK 400 are the most common, but almost one quarter say that they withdrew more than SEK 1 000 at their most recent withdrawal. Around one half of the respondents never withdraw money in shops in conjunction with card purchases. For those who do make such withdrawals, the most common amount is SEK 200-400.

If background variables are considered in the survey, certain differences become apparent. One

of these is that individuals over 45 years of age use cash to a greater extent, particularly for purchases amounting to SEK 500 or less. The fact that individuals of 44 years of age or younger also use debit cards for smaller purchases indicates a generational aspect to the choice of means of payment. This generational aspect is also indicated by behaviour patterns regarding ATM withdrawals. While younger people more frequently withdraw smaller sums from ATMs, older people more frequently withdraw sums exceeding SEK 1 000.

Gender differences can also be discerned in the survey results. Men have a stronger tendency to use cash and make more frequent use of ATMs, while women use debit cards to a greater degree and withdraw money in shops in conjunction with purchases more frequently than men.

Levels of education and income also seem to influence payment behaviour. Respondents with an annual income of less than SEK 240 000 use cash to a greater degree than those with higher incomes. And respondents with a university education use both debit cards and credit cards more often than those with a lower level of education.

## Systems in the financial infrastructure

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

### RIX – THE SYSTEM FOR LARGE-VALUE PAYMENTS<sup>144</sup>

A large proportion of the banks' payments are made via their accounts in the Riksbank's system for large-value payments, RIX. All of the banks and clearing organisations participate in the system (see Figure 11).<sup>145</sup> The Riksbank owns and runs RIX and is also a participant. RIX constitutes an important hub in the infrastructure. The banks' accounts with the Riksbank 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 of the payments involving a transfer from an account in one bank to an account in another bank are settled through the banks' accounts 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 the payments are settled immediately, one by one, on condition that the payer has sufficient liquid funds, that is money in his account. This settlement method reduces the risk associated with settlement, but on the other hand requires large amounts of liquidity.<sup>146</sup> 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 fully secured.

Some payments are first processed at one of the clearing organisations, i.e. Bankgirot, Euroclear Sweden, NASDAQ OMX DM, EMCF or CLS (more information on these systems is presented below). 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. In 2012, the average number of transactions in RIX was 14 495 per bank day and the average turnover per day was SEK 498 billion.

---

144 For more information on the Riksbank's payment system for large-value payments, RIX, see [www.riksbank.se](http://www.riksbank.se).

145 The banks participate either as direct or indirect participants. 16 Swedish credit institutions and Bankgirot, EMCF, Euroclear Sweden, NASDAQ OMX DM, CLS, the Swedish National Debt Office and the Riksbank are participants in RIX.

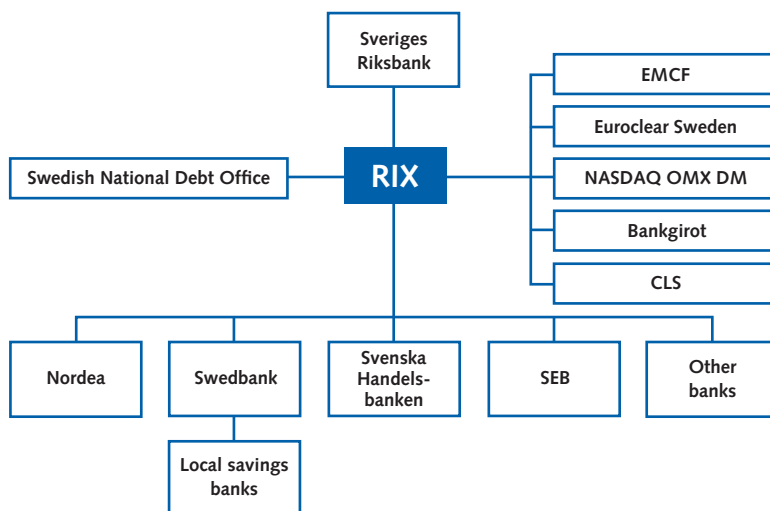
146 In multilateral net settlement, all the participants' debts are offset against one another. This method requires less liquidity, but entails a higher level of risk, as the entire settlement process is stopped if one participant – regardless of size – cannot meet its obligations.

## BANKGIROT<sup>147</sup> – THE SYSTEM FOR RETAIL PAYMENTS

Bankgirot is a bank-owned clearing organisation that was established in 1959 and which owns and operates a general payment system, the Bankgirot system. As clearing organisation, Bankgirot also offers a clearing and settlement service which, together with the Bankgirot system, forms Bankgirot's payment system. Retail payments, consisting of both its own Bankgirot products and payment products with external owners, are mediated via Bankgirot's payment system. In addition to this, Bankgirot offers services unconnected with ordinary payments, such as electronic identification and electronic invoicing.

Bankgirot 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 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. This procedure is performed for a number of different payment products that are designed to meet

Figure 11. The Swedish payment system



147 In 2012, BGC changed its name and brand to Bankgirot. "Bankgirotssystemet" was previously called "Bankgirot" but is now called the bankgirot system. For more information on Bankgirot, see [www.bgc.se](http://www.bgc.se).

different needs. These include credit transfers, direct debits, payments from companies, salary payments into accounts and tax payments. Bankgirot also provides clearing and settlement services for additional payment products. These are account-to-account transfers, form payments via Privatgiro, cash withdrawals via Evry<sup>148</sup> and Swedbank, card payments via MasterCard and Visa and some parts of the Riksbank's cash management services.

In 2012, an average of 3.7 million payment transactions per bank day, amounting to an average daily total of SEK 45.4 billion, were mediated via Bankgirot's payment system.

Bankgirot has developed a new settlement system, Payments in real time. This system supplies the settlement of payments in real time, 24 hours a day, every day of the week, between participating banks. The first service that began to use Payments in real time was Swish, at the end of 2012 (see the box Swish – a new mobile payment service).

#### EUROCLEAR SWEDEN – CENTRAL SECURITIES DEPOSITORY<sup>149</sup>

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 stock market and fixed income market. Some transactions on the derivatives market are also settled in this system.

Securities exist almost exclusively as electronic records. The institution that keeps the central register for the various participants' holdings is therefore very important to the financial infrastructure. Euroclear Sweden registers all transactions arising from issues in Swedish kronor and the pledging of and trading in securities in Sweden.

A transaction involving shares or debt securities begins with an investor placing an order with a broker to buy or sell, for example through his or her online banking service. The brokers can themselves take on the role as counterparty or seek a counterparty on a marketplace, for example a stock exchange. When the broker has found a counterparty to trade with and the transaction is completed, the broker informs Euroclear Sweden. This marks the start of a matching process in which the buy and sell orders are paired. Euroclear

---

148 Previous company names were EDB and CEKAB.

149 Usually designated CSD, which stands for Central Securities Depository. For more information on Euroclear Sweden, see [www.ncsd.eu](http://www.ncsd.eu).

Sweden verifies the identity of the broker and that the broker and the counterparty (broker or central counterparty) are in agreement on the securities concerned, the number/nominal amount, payment amount, 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 cancel out 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.<sup>150</sup> 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 on these accounts during the day.

In 2012, the average gross sum for the settlement of share transactions amounted to SEK 32 billion per day. The corresponding figure for fixed-income market transactions was SEK 368 billion.<sup>151</sup> The value of fixed income market transactions is thus higher than that of transactions on the stock market. However, the number of transactions is much higher on the stock market, with an average of 41 900 transactions per day, compared to an average of 1 400 per day on the fixed income market.

---

<sup>150</sup> This is called DvP (Delivery versus Payment).

<sup>151</sup> 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 share transactions. These are included in the stock market statistics and not in the fixed income market statistics.

## NASDAQ OMX DM – CENTRAL COUNTERPARTY IN DERIVATIVES CLEARING<sup>152</sup>

NASDAQ OMX Derivatives Markets (NASDAQ OMX DM) handles standardised derivatives contracts and repos by acting as the central counterparty and thus manages the risks associated with open exposure to a transaction counterparty. When NASDAQ OMX DM acts as central counterparty in the deal between buyer and seller, each transaction is replaced by two new deals, where NASDAQ OMX DM 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 DM instead of on or to each 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 DM.

The execution of a derivatives contract usually creates payment flows, for example, an option transaction gives rise to an option premium.<sup>153</sup> Payments can also arise during the term of a derivatives contract. These payments are cleared on NASDAQ OMX DM and settled in RIX.

When a derivatives contract matures, the contract is settled, either by making a cash payment or by delivering the agreed amount of the underlying instrument. In the case of cash settlement, the amount is cleared on NASDAQ OMX DM 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.

NASDAQ OMX DM is a secondary legal name of NASDAQ OMX Stockholm AB.<sup>154</sup> NASDAQ OMX Stockholm AB offers trading in several different types of instrument and on several markets.<sup>155</sup> In 2012, a daily average of approximately 450 000 derivatives and repos were traded on NASDAQ OMX DM each day.

## EMCF – CENTRAL COUNTERPARTY FOR EQUITIES CLEARING<sup>156</sup>

The European Multilateral Clearing Facility (EMCF) is the central counterparty that clears most Swedish equities. Most of the equities

---

<sup>152</sup> For more information on NASDAQ OMX DM, see [www.nasdaqomxnordic.com](http://www.nasdaqomxnordic.com).

<sup>153</sup> The price of an option is called the option premium. It reflects the compensation for the risk that the issuer of the option takes.

<sup>154</sup> A secondary name is not a separate legal entity but relates to a particular part of a company's activity. A secondary name is registered with the Swedish Companies Registration Office.

<sup>155</sup> See the section on the stock market in the chapter *The financial markets*.

<sup>156</sup> For more information on EMCF, see [www.euromcf.nl](http://www.euromcf.nl).



traded on the stock market in Stockholm<sup>157</sup> must be cleared through the EMCF. The shares on the stock exchange in Stockholm that are cleared by EMCF are those on the Large Cap list. In addition to equities on the stock market in Stockholm, EMCF also clears equities on a number of other marketplaces in Europe. The clearing service offered by the EMCF entails the EMCF acting as the central counterparty in equity transactions in place of its members. The counterparty risk (the risk that the buying or selling counterparty cannot deliver equities or money in accordance with the agreed deal) 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 principle of multilateral netting. The final settlement of the Swedish equity transactions is conducted by Euroclear Sweden. In 2012, Swedish equity transactions amounting to an average value of SEK 15 billion per day were cleared in the EMCF.

#### CLS – THE SYSTEM FOR FOREIGN EXCHANGE SETTLEMENT<sup>158</sup>

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 leads to major exposures between the banks. To reduce these risks, Continuous Linked Settlement (CLS) started in September 2002. In CLS, foreign exchange transactions are settled on a Payment versus Payment (PvP) basis. This entails the participating banks having 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 the settlement risks.

The system is run by CLS Bank, which is domiciled in the United States. In 2012, average turnover per day in CLS as a whole amounted to USD 4 884 billion. The daily turnover in the system is thus significantly higher than Sweden's annual GDP.<sup>159</sup> The Swedish krona accounts for only 1.4 per cent of the total turnover, which is SEK 452

---

<sup>157</sup> The stock market in Stockholm is called NASDAQ OMX Nordic.

<sup>158</sup> Read more about CLS and the elimination of settlement risks in connection with foreign exchange transactions in *"Progress in reducing foreign exchange settlement risk"*, Committee on Payment and Settlement Systems, BIS, May 2008.

<sup>159</sup> In 2012, Sweden's GDP amounted to approximately USD 547 billion (calculated using an average exchange rate of 6.50) or to around SEK 3 555 billion.

billion. All four major Swedish banks are direct participants<sup>160</sup> in CLS and several currencies are included in the system.<sup>161</sup>

## Payment flows in the Swedish financial infrastructure

The Riksbank's payment system, RIX, is the central system in the financial infrastructure. In 2012, an average of approximately SEK 498 billion was settled per day. This means that a value corresponding to Sweden's GDP passes through RIX in the course of roughly seven days. The banks account for the largest flows in RIX. It is through the banks that households, companies and authorities manage most of their payments.

Figure 12 presents the different types of payment that are settled in RIX. As described earlier, payments are either made directly in RIX or via clearing in Euroclear Sweden, NASDAQ OMX DM, Bankgirot, EMCF or CLS before they are passed on for settlement in RIX. The amounts presented in the figure are indicative and provide an estimate of the amounts for the different types of payment that were settled in RIX on an average day in 2012. The figures for CLS are double counted. 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.

As shown in the figure, trading in the fixed income market gives rise to the largest payment flows in the infrastructure. In 2012, Euroclear Sweden settled on average SEK 368 billion per day from the fixed income market.<sup>162</sup> The fixed income market refers to spot trading and derivatives trading that leads to the delivery of the underlying security. Euroclear Sweden also settled SEK 32 billion per day from transactions relating to the stock market.<sup>163</sup> These values were settled using the accounts that Euroclear Sweden administers in RIX and relate to the delivery of underlying securities, excluding internal transactions in which a clearing member is its own counterparty on the exchange. The figure includes trade both on and outside the exchange.

---

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

161 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.

162 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 share transactions. These are included in the stock market statistics and not in the fixed income market statistics.

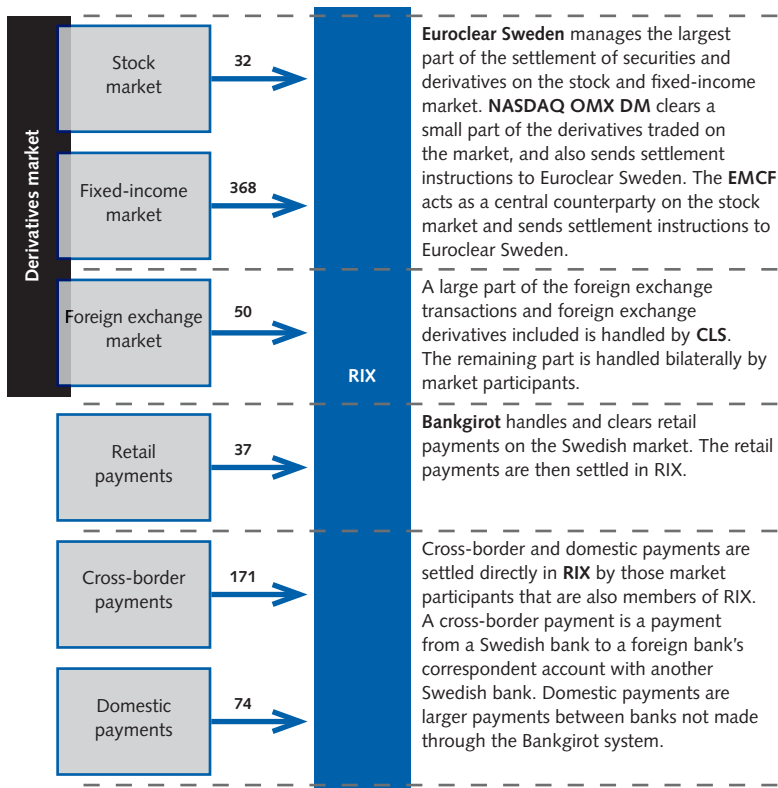
163 SEK 6 billion related to transactions cleared and netted by the EMCF.

The EMCF, which acts as a central counterparty on the stock market, cleared transactions amounting to SEK 15 billion in 2012. After clearing and netting, SEK 5 billion of this sum was then settled through Euroclear Sweden.

Derivatives trading on NASDAQ OMX DM 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 DM's system and only a small portion is finally settled in RIX. The figure for 2012 was SEK 233 million per day.

The account-based retail payments are managed through Bankgirot. This covers the majority of all payments to and from

Figure 12. Payment flows in the Swedish financial infrastructure  
SEK billion, daily averages 2012



Sources: The Riksbank, Euroclear Sweden and the EMCF

individuals and most companies, such as salary payments, card purchases and supplier payments. An average of SEK 45 billion a day was cleared in Bankgirot's system in 2012. After netting in Bankgirot, SEK 37 billion per day remained to be paid between the major banks (that is, to be settled in RIX).

The clearing and settlement of foreign exchange transactions 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. Most of the payments are made through CLS. The foreign payments that arise directly from foreign exchange transactions are also largely made through CLS. The majority of these payments, SEK 452 billion a day, were also cleared in CLS. After netting, only SEK 19 billion per day remained to be finally settled in RIX. The foreign exchange transactions cleared through a correspondent bank and settled in RIX amounted to SEK 31 billion per day in 2012. 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 50 billion per day.

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 171 billion per day. If the recipient Swedish bank has accounts with the foreign bank, no transaction in RIX occurs. The reported value of SEK 171 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, which gave rise to an average of SEK 74 billion per day in 2012, refer partly to payments stemming from the shortest segment of the money market and partly to pure interbank payments. These payments are in SEK 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. Share turnover and market value on NASDAQ OMX Stockholm SEK billion**

	SHARE TURNOVER	MARKET VALUE
2003	2 453	2 314
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

Source: NASDAQ OMX Stockholm

**Table B. Issuers and investors in the bond and money markets SEK billion**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Issuers in the bond market</b>										
Central government	770	810	817	812	768	753	741	802	796	761
Mortgage institutions	549	552	685	747	821	937	1 035	1 105	1 241	1 204
Other credit market companies	46	70	91	115	196	298	290	376	380	460
Non-financial companies	14	13	16	20	21	18	18	18	30	40
Local government	120	112	129	116	137	169	175	186	192	229
Banks	62	71	71	81	90	88	71	78	94	70
<b>Total</b>	<b>1 561</b>	<b>1 629</b>	<b>1 807</b>	<b>1 890</b>	<b>2 032</b>	<b>2 263</b>	<b>2 329</b>	<b>2 564</b>	<b>2 733</b>	<b>2 764</b>
<b>Issuers in the money market</b>										
Central government	269	267	294	259	180	139	116	92	72	105
Mortgage institutions	104	93	72	113	106	105	72	14	10	12
Other credit market companies	16	9	10	9	19	45	12	12	34	29
Non-financial companies	51	62	62	66	96	97	73	58	68	73
Local government	5	5	6	11	5	9	6	10	14	15
Banks	45	47	69	62	108	96	62	37	48	51
<b>Total</b>	<b>490</b>	<b>483</b>	<b>515</b>	<b>520</b>	<b>515</b>	<b>491</b>	<b>341</b>	<b>223</b>	<b>246</b>	<b>285</b>
<b>Investors in the bond market</b>										
AP funds	197	223	266	301	326	266	268	293	308	315
Insurance companies	542	599	613	701	744	834	1 114	1 087	1 205	1 219
Banks	177	129	262	281	337	475	473	346	364	367
Non-residents	455	529	638	545	537	459	462	581	762	732
Companies and others	189	149	28	61	88	228	12	257	94	131
<b>Total</b>	<b>1 561</b>	<b>1 629</b>	<b>1 807</b>	<b>1 890</b>	<b>2 032</b>	<b>2 263</b>	<b>2 329</b>	<b>2 564</b>	<b>2 733</b>	<b>2 764</b>
<b>Investors in the money market</b>										
AP funds	2	2	7	3	4	6	0	1	0	10
Insurance companies	116	108	135	88	92	42	23	26	30	49
Banks	138	152	129	151	87	133	119	64	52	74
Non-residents	85	82	75	52	43	75	54	23	39	56
Companies and others	149	133	168	226	289	235	145	109	125	95
<b>Total</b>	<b>490</b>	<b>483</b>	<b>515</b>	<b>520</b>	<b>515</b>	<b>491</b>	<b>341</b>	<b>223</b>	<b>246</b>	<b>285</b>

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

**Table C. Average turnover per day in the bond market  
SEK billion**

	GOVERNMENT BONDS	MORTGAGE BONDS
2003	19.5	9.5
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

Source: The Riksbank

**Table D. Average turnover per day in the money market  
SEK billion**

	TREASURY BILLS	MORTGAGE CERTIFICATES
2003	10.6	3.4
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

Source: The Riksbank

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

2003	123.8
2004	122.9
2005	141.2
2006	176.0
2007	196.4
2008	170.3
2009	92.1
2010	118.7
2011	119.7
2012	124.1

Source: The Riksbank

**Table F. The monetary base in Sweden 2012**  
SEK billion

	BANKNOTES AND COINS IN CIRCULATION	LIABILITIES TO MONETARY POLICY COUNTERPARTIES	RIKSBANK CERTIFICATES ISSUED	THE MONETARY BASE
Jan	95.3	21.8	0	117.1
Feb	94.2	23.0	0	117.2
Mar	94.7	22.1	0	116.8
Apr	93.9	31.1	0	124.9
May	93.8	31.2	0	125.0
Jun	95.5	29.6	0	125.1
Jul	94.8	30.3	0	125.1
Aug	94.2	30.4	0	124.5
Sep	93.3	31.8	0	125.1
Oct	92.5	29.8	3.0	125.3
Nov	92.3	33.2	0	125.6
Dec	96.4	26.2	3.0	125.6

Source: The Riksbank

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

	SPOT	FORWARDS	OPTIONS	LONG-TERM FX-SWAPS	SHORT-TERM FX-SWAPS
2003	41	14	31	49	74
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

Note. The division into long and short FX-swaps used here, follows the Riksbank's definition regarding the collection of turnover statistics. Short swaps – maturity up to two days. Long swaps – maturity from two days to 18 months.  
Source: The Riksbank

**Table H. Total assets of the financial intermediaries at year-end 2012**  
SEK billion

	TOTAL ASSETS/ INVESTMENT ASSETS	LENDING TO THE PUBLIC	OTHER LENDING	INTEREST- BEARING SECURITIES	EQUITIES	OTHER
<b>Credit institutions</b>						
Banks	6 242	2 685	1 398	794	469	896
Mortgage institutions	2 462	2 261	81	21	0	99
Other credit market companies	883	464	63	201	5	150
<b>Total credit institutions</b>	<b>9 588</b>	<b>5 410</b>	<b>1 542</b>	<b>1 017</b>	<b>474</b>	<b>1 145</b>
<b>Investors</b>						
Insurance companies	3 165	52	19	1 286	1 569	238
AP funds	1 123	-	-	405	621	97
Fund management companies	1 795	-	-	399	1 053	343
<b>Total investors</b>	<b>6 083</b>	<b>52</b>	<b>19</b>	<b>2 091</b>	<b>3 244</b>	<b>678</b>
Securities companies	23	0.5	5	0.5	0.5	17

Note. Column one shows the balance sheet totals for banks, mortgage institutions, other credit market companies and securities companies, while the column for insurance companies and AP funds shows investment assets and the one for mutual funds shows the funds managed.

Sources: Statistics Sweden, annual reports and the Riksbank

**Table I. Geographical breakdown of the major banks' lending 2012**  
Per cent

	SWEDEN	OTHER NORDIC COUNTRIES	THE BALTIC STATES	GERMANY	UK	REST OF THE WORLD
Swedbank	86.7	2.6	9.8	0.0	0.0	0.8
SEB	72.7	3.2	9.0	12.8	0.0	2.2
Nordea	23.5	61.4	2.2	0.0	0.0	12.9
Handelsbanken	64.8	22.4	0.0	0.4	6.8	5.6
Four major banks	50.9	33.8	4.0	2.1	1.6	7.6

Source: Annual reports and the Riksbank

**Table J. Lending to the public by credit institutions**  
SEK billion

	TOTAL	BANKS	MORTGAGE INSTITUTIONS	OTHER CREDIT MARKET COMPANIES
2003	2 688	1 160	1 284	245
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

Source: The Riksbank

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Loans to Swedish public	1 027	1 042	1 181	1 345	1 880	2 027	1 890	2 000	2 132	2 244
Loans to public abroad	127	170	224	291	323	415	359	354	365	400
Swedish National Debt Office and The Riksbank	12	11	14	32	56	262	265	54	63	67
Loans to Swedish monetary financial institutions	451	615	669	721	621	964	940	924	794	847
Loans to foreign monetary financial institutions	298	352	442	547	748	713	737	545	582	526
Interest-bearing securities	361	369	503	569	634	927	1 021	864	778	794
Other	313	605	609	681	691	969	668	1 155	1 284	1 331
Total	2 590	3 163	3 642	4 185	4 952	6 277	5 880	5 896	5 997	6 208

Source: The Riksbank



**Table L. The banks' lending to the public**  
SEK billion

	NON-FINANCIAL COMPANIES	HOUSEHOLDS	SWEDISH PUBLIC SECTOR	PUBLIC ABROAD	OTHER
2003	612	298	39	127	83
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

Source: The Riksbank

**Table M. The banks' liabilities and equity**  
SEK billion

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Deposits from Swedish public	1 082	1 111	1 266	1 439	1 612	1 810	1 829	1 987	2 114	2 257
Deposits from the public abroad	115	134	134	162	145	132	142	144	182	203
Deposits from Swedish monetary financial institutions	157	168	181	221	307	748	572	264	234	243
Deposits from foreign monetary financial institutions	473	735	825	925	983	1 113	963	859	845	715
Securities issued	222	349	548	659	956	1 226	1 372	1 524	1 626	1 700
Other	376	458	467	552	666	937	617	733	593	649
Equity	165	208	221	227	283	310	384	385	403	441
Total	2 590	3 163	3 642	4 185	4 952	6 277	5 880	5 896	5 997	6 208

Source: The Riksbank

**Table N. The banks' borrowing from the public**  
SEK billion

	NON-FINANCIAL COMPANIES	HOUSEHOLDS	SWEDISH PUBLIC SECTOR	PUBLIC ABROAD	OTHER
2003	378	556	43	115	19
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

Source: The Riksbank

**Table O. The banks' average deposit and lending rates and treasury bill yields**  
Per cent

	LENDING RATES	DEPOSIT RATES	TREASURY BILL YIELDS 6 MONTHS
2003	4.71	1.41	2.65
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

Note. Several major amendments have been made to the statistics since September 2005.  
Source: The Riksbank

**Table P. Mortgage institutions' lending to the public**  
SEK billion

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Single-family dwellings	673	749	869	966	915	979	1 069	1 135	1 184	1 216
Tenant-owner apartments	119	152	196	240	241	279	329	372	395	413
Multi-family dwellings	400	400	395	391	369	389	432	434	441	453
Commercial and office buildings	33	28	28	28	31	35	52	62	71	79
Other	42	40	40	37	39	83	88	103	102	99
Total	1 267	1 369	1 528	1 662	1 595	1 763	1 970	2 106	2 192	2 261

Source: The Riksbank

**Table Q. New lending by mortgage institutions by original fixed-rate term**  
Per cent

NEW LOANS PER MONTH	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Variable rate	40.4	54.8	50.3	55.8	47.9	67.1	84.1	68.6	54.1	58.2
Fixed-rate term ≤ 5 years	42.0	32.3	31.0	26.5	29.4	24.6	13.0	24.4	40.8	33.7
Fixed-rate term > 5 years	17.6	13.0	18.7	17.8	22.6	8.3	2.9	7.0	5.1	8.0

Source: The Riksbank

**Table R. Mortgage institutions' loan stock by original fixed-rate term**  
SEK billion

AT MONTH END	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Variable rate	402	496	604	705	645	799	1 130	1 152	1 040	1 019
Fixed-rate term ≤ 5 years	487	615	598	603	579	616	523	786	992	1 093
Fixed-rate term > 5 years	395	283	327	356	370	348	319	140	131	123
Total	1 283	1 393	1 528	1 663	1 595	1 763	1 972	2 078	2 163	2 235

Source: The Riksbank

**Table S. Mortgage institutions' funding**  
SEK billion

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Certificates	182	171	175	146	167	81	116	10	27	22
Bonds and subordinated loans	746	738	853	1 043	1 137	1 286	1 393	1 432	1 619	1 621
Of which covered bonds	-	-	-	-	-	-	-	1 431	1 618	1 620
Other funding	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>928</b>	<b>910</b>	<b>1 028</b>	<b>1 189</b>	<b>1 304</b>	<b>1 367</b>	<b>1 509</b>	<b>1 442</b>	<b>1 646</b>	<b>1 643</b>

Source: The Riksbank

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

	SWEDISH NON- FINANCIAL COMPANIES	SWEDISH HOUSEHOLDS	SWEDISH PUBLIC SECTOR	PUBLIC ABROAD	OTHER
2003	84	102	34	23	1
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

Source: The Riksbank

**Table U. Insurance companies' investment assets**  
SEK billion

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Non-life insurance companies	1 443	1 567	1 833	1 990	2 132	1 931	2 246	2 459	2 447	2 665
Life insurance companies	329	363	420	439	468	447	485	498	497	500
<b>Total</b>	<b>1 771</b>	<b>1 930</b>	<b>2 253</b>	<b>2 429</b>	<b>2 600</b>	<b>2 378</b>	<b>2 731</b>	<b>2 956</b>	<b>2 943</b>	<b>3 165</b>

Source: Statistics Sweden

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Equities	697	807	1 051	1 215	1 282	947	1 344	1 546	1 383	1 569
Bonds	783	844	894	953	1 016	1 164	1 114	1 087	1 205	1 219
Short-term investments	176	160	188	140	148	133	90	94	112	123
Loans <sup>1</sup>	57	59	51	49	78	68	120	164	173	183
Properties	59	61	70	72	76	65	63	66	70	70
<b>Total</b>	<b>1 771</b>	<b>1 930</b>	<b>2 253</b>	<b>2 429</b>	<b>2 600</b>	<b>2 378</b>	<b>2 731</b>	<b>2 956</b>	<b>2 943</b>	<b>3 165</b>

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

Source: Statistics Sweden

**Table X. Use of different payment instruments**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of transactions, millions										
Cards	759	845	970	1 212	1 405	1 650	1 773	1 940	1 982	2 190
Debit cards	670	674	777	972	1 107	1 322	1 438	1 558	1 629	1 810
Credit cards	89	172	193	240	298	328	335	382	353	380
Credit transfers	418	453	517	575	651	699	726	768	831	859
Electronic	335	365	430	484	555	605	638	686	756	789
Forms	83	88	87	91	96	94	88	82	75	70
Direct debit	130	143	160	197	208	229	241	272	289	297
Cheques, including money orders	1	1	1	1	1	1	1	0	0	0
<b>Total</b>	<b>1 308</b>	<b>1 442</b>	<b>1 648</b>	<b>1 984</b>	<b>2 265</b>	<b>2 579</b>	<b>2 741</b>	<b>2 981</b>	<b>3 103</b>	<b>3 346</b>
Transaction value, SEK billion										
Cards	408	479	537	562	651	718	745	783	796	849
Debit cards	331	369	413	432	477	520	540	563	577	617
Credit cards	77	110	124	130	174	198	206	220	219	232
Credit transfers	6 355	7 204	8 090	8 666	10 020	10 806	10 615	11 528	12 604	13 646
Electronic	5 803	6 732	7 635	8 269	9 674	10 499	10 358	11 315	12 430	13 471
Forms	552	472	456	397	346	307	257	213	174	175
Direct debit	268	302	344	384	424	452	469	504	543	545
Cheques, including money orders	46	59	55	54	60	69	42	27	30	40
<b>Total</b>	<b>7 077</b>	<b>8 044</b>	<b>9 027</b>	<b>9 666</b>	<b>11 155</b>	<b>12 045</b>	<b>11 871</b>	<b>12 842</b>	<b>13 973</b>	<b>15 080</b>

Source: The Riksbank

**Table Y. Card transactions in POS-terminals and ATM withdrawals  
Number of transactions (millions) and SEK billion**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ATMs										
No. of ATMs	2 699	2 716	2 814	2 816	3 085	3 236	3 319	3 351	3 566	3 416
No. of transactions	328	324	321	313	320	295	267	243	226	214
Transaction value	276	293	289	270	240	239	229	220	206	193
Payment terminals										
No. of POS-terminals	153 055	161 098	176 637	184 590	187 330	194 776	217 760	203 117	209 631	213 388
No. of transactions	542	652	801	1 000	1 154	1 358	1 491	1 644	1 798	2 046
Transaction value	241	270	312	384	436	477	501	556	597	654

Source: The Riksbank

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

2003	537
2004	567
2005	554
2006	505
2007	464
2008	435
2009	420
2010	404
2011	401
2012	388

Source: The Riksbank

**Table AA. Percentage of electronically initiated credit transfers**  
**Per cent**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Percentage of transaction value	91.3	93.4	94.4	95.4	96.5	97.2	97.6	98.2	98.6	98.7
Percentage of transaction volume	80.2	80.6	83.2	84.2	85.2	86.6	87.9	89.3	91.0	91.9

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 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' market 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  
Central laws and forms of incorporation in the financial sector  
Netting  
Risks in the trade and settlement of credit derivatives  
Single Euro Payments Area (SEPA)

### **The Swedish Financial Market 2008**

Trends of integration in equity trading  
New trading places with MiFID  
Riksbank facilities for short-term borrowing and deposit requirements  
Credit derivatives and structured products  
Covered interest rate parity  
The foreign operations of the major banks  
Central laws and forms of incorporation in the financial sector  
Single Euro Payments Area (SEPA)  
New payment instruments

# Index

## A

accounting 60, 63, 87  
Aktietorget 55, 57, 62n  
Algorithmic trading 47, 59  
arbitrage 47

## B

Bankgirot 110, 126  
banking business 100  
banks 7nn, 14, 16nn, 20nn,  
26nn, 33nn, 37n, 43nn, 51n,  
59, 63nn, 67nn, 71nn, 76nn,  
87nn, 95, 98nn  
Basel regulatory framework 81  
BIS 45n, 48n, 135  
bond 6nn, 15, 17nn, 23n, 31nn  
bond market 17n, 23, 31n, 34nn  
brokerage fee 57  
brokers 22, 38n, 45, 59, 64, 103  
buffer capital 101, 103, 105  
Burgundy 57, 62n

## C

capital adequacy 22, 77, 82n,  
101  
capital contribution 53  
capital requirement 82  
central bank 13, 26, 48, 110  
central counterparty (CCP) 105,  
112  
centralised funding 68  
certificate 19  
Certified Adviser 62  
clearing 46, 61, 104n, 109  
clearing organisation 104, 109  
CLS 47, 117, 135

commission trading 97  
Contract for Difference  
(CFD-contracts) 56n  
Corporate and municipality-  
financing institutions 88  
corporate bonds 34, 38n,  
correspondent bank 117, 138  
counterparty risk 23, 111n, 117,  
135  
coupon bonds 31  
Covered bonds 33, 87  
covered interest rate parity 32,  
42n  
credit 11, 20, 26n, 29, 34n, 64,  
69, 71n, 81n, 85, 87nn, 97n,  
100nn, 104, 106  
credit assessment 101  
credit derivatives 39, 151  
credit institution 29, 53, 58, 72,  
101n, 104, 106  
credit market company 35, 101n  
credit risk 10, 38, 41, 51, 71  
cross currency basis swaps 44  
Cross trading 47  
currency swap 44, 68  
customer trading 45n

## D

decentralised funding 68n  
Delivery versus Payment (DvP)  
111  
Deposit companies 102n  
deposit contracts 22n, 39  
deposit guarantee 15n, 35, 71,  
103  
depository 106

derivative contract 55, 61, 83,  
105  
derivative instrument 13, 39,  
41, 43  
discount bonds 31  
discretionary portfolio  
management 104

## E

Elasticia 63  
electronic trading 38, 45nn,  
58n, 63  
EMIR 104  
e-money 118, 123, 128  
equity funds 91, 95n  
EU regulation 14, 100, 104  
Euribor 25, 44  
Euroclear 59, 130, 132, 136  
European Multilateral Clearing  
Facility (EMCF) 59, 134  
European Systemic Risk Board  
(ESRB) 12  
Exchange-Traded Funds (ETFs)  
56

## F

financial companies 8nn, 15, 55,  
78n, 88, 100, 106  
financial infrastructure 9, 11, 14,  
25, 42, 47, 71, 107, 130, 136,  
financial stability 11nn, 107  
Financing Business 100n  
Finansinspektionen 10nn, 14n,  
33, 35, 58n, 62, 97, 100nn,  
106  
fine-tuning transactions 26nn  
First North 57, 62n  
Fixed-income funds 96  
foreign exchange forwards 44,  
48  
foreign exchange options 44, 48

foreign exchange swaps 44, 48,  
83  
foreign payments 138  
fund management companies  
64, 91, 94n, 97

## G

general guidelines 15, 106  
government bonds 15, 19, 23,  
32n, 36nn, 40

## H

hedge funds 45, 95  
high frequency trading 47, 59  
hub currency 47

## I

IMM-FRA 39  
insider trading 105  
insurance associations 94  
insurance companies 8, 17, 20n,  
35, 38, 46, 64n, 87, 91nn, 103  
insurance mediation 103  
interbank 7, 25, 38, 45n, 51, 77,  
81, 138  
interbank market 25, 46, 51, 77,  
81  
interbank participants 38, 45  
interbank trading 38, 45n  
interest-rate forwards 39  
interest-rate options 41  
interest-rate swaps 39, 41  
intraday facilities 26  
investment advice 104n  
Investor Protection 105  
investors 6nn, 17n, 20n, 24, 31,  
33nn, 41, 53n, 56nn, 63n, 81,  
91, 98, 105  
issuers 7, 18, 31n, 38, 53n, 98  
issues 12, 18, 20, 31n, 35nn,  
106,

## **K**

Kommuninvest 35, 88n

## **L**

laws 11, 100nn

Libor 25

liquidity 9nn, 16, 18n, 22nn,  
26nn, 31, 33, 37, 42nn, 56,  
68, 69, 71, 77, 81, 83, 87

## **M**

market abuse 105

market maker 37, 56, 97

market manipulation 105

marketplace 53nn, 62, 114

Memorandum of Understanding  
12

Ministry of Finance 10, 12, 15

monetary policy 13, 27, 29, 41

monetary policy counterparties  
21, 23, 26, 36, 41

monetary policy repos 26, 28

money 6nn, 10, 13, 17nn, 24nn,  
31, 35, 43, 74nn, 80n, 87n,  
96, 100, 102n, 106

money laundering 101, 103n

money market 17nn, 24, 31, 38,  
88

money supply 74nn

M-payments 124

multibank platforms 46

Multilateral Trading Facilities  
(MTF) 57

## **N**

NASDAQ OMX Derivatives  
Markets 61, 134

NASDAQ OMX Stockholm 37,  
42, 54n, 57nn

netting 43, 109

Nordic Derivatives Exchange 37,  
61n

Nordic Growth Market (NGM)  
57, 61n

Nordic Large Cap 60

Nordic Mid Cap 61

Nordic Small Cap 61

## **O**

on-tap 33, 37

option 41, 44n, 55n, 61n

ordinances 100

overnight market 22, 24, 27n,  
77

Over The Counter (OTC) 42, 58,  
61, 104

## **P**

payment service 9, 102

payment system 10, 13, 25n, 71,  
100, 126, 130

payment using an intermediary  
107

pension foundations 94

pension funds 17, 21, 36, 64,  
91, 96n

premium pension system 96

premium reserve system 97

primary market 31, 36

primary monetary policy  
counterparties 21, 23, 26,  
36, 41

private bonds 37

private equity investment  
company 90

private limited companies 54

private placements 38

public limited companies 54, 57

## **R**

recommendations 106

reference rate 25, 51n  
regulated market 57, 62, 104  
regulations 11n, 14n, 20, 22, 33,  
37, 57n, 63n, 81n, 97, 100,  
104, 106  
Repo 22nn, 27  
retail payments 117, 131  
RIBA 39n  
Riksbank certificates 26, 28n  
risk capital 16, 53, 90  
RIX 25nn, 29, 130, 136

## **S**

SAXESS 38, 58  
secondary market 18, 31, 36  
securities 5nn, 17nn, 27, 31,  
36nn, 42, 47n, 56nn, 64n, 69,  
78n, 88n, 93, 95, 97nn, 101nn  
securities institutions 58, 101,  
104n  
securities trading 47, 58, 97nn,  
105, 110  
settlement 59, 104n, 109nn,  
130  
share capital 53, 82  
share option 55  
shares 5nn, 41, 47, 53nn, 90, 97,  
102, 104n  
simple payments 107  
spot 17n, 22n, 31, 43nn  
stability council 12  
standing facilities 26nn  
Stibor 25, 40n, 44, 51n  
Stina 41  
Stina swaps 41  
stock exchange members 59  
stock exchange 42, 53n, 57nn  
stock market 5n, 8, 17, 43, 47,  
53n, 59, 61, 103n  
structured products 37, 39, 41  
support authority 16

Support to Credit Institutions Act  
11, 15n, 102  
Swedish National Debt Office  
10nn, 15, 19, 23, 32n, 37

## **T**

trade repository 105  
trading structures 18  
treasury bills 15, 17nn, 21nn, 33,  
37n, 40

## **W**

warrants 56, 62

## **Z**

zero coupon bonds 31



Sveriges Riksbank  
SE-103 37 Stockholm  
(Brunkebergstorg 11)

Phone +46 8 787 00 00  
Fax +46 8 21 05 31  
[registratorn@riksbank.se](mailto:registratorn@riksbank.se)  
[www.riksbank.com](http://www.riksbank.com)

