

**Payment, clearing and
settlement systems in
the Netherlands**

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List of abbreviations

AFM	The Netherlands Authority for the Financial Markets – Autoriteit Financiële Markten
BeNeMAC	Joint Belgian/Dutch Market Advisory Committee
BSP	Biller service provider
CCP	Central counterparty
CESR	Committee of European Securities Regulators
CSD	Central securities depository
CSS	Clearing and settlement system
DACSI	Dutch Advisory Committee Securities Industry
DNB	Netherlands Bank – De Nederlandsche Bank
DSI	The Dutch Securities Institute
EACHA	European Automated Clearing House Association
EBA	Euro Banking Association
EMCF	The European Multilateral Clearing Facility
ENIEC	The Euroclear Interprofessional Securities Centre
ESCB	European System of Central Banks
ESES	Euroclear Settlement Securities platform
ESMA	European Securities and Markets Authority
HAM	Home Accounting Module
ICSD	International Central Securities Depository
IOSCO	International Organization of Securities Commissions
LCH.Clearnet	An organisation for the clearing of securities and derivatives transactions
MAC	Market advisory committees
MIF	Multilateral interchange fee
MiFID	European Markets in Financial Instruments Directive
MTF	Multilateral Trading Facility
NCB	National Central Bank
NFC	Near-field communication
NVB	The Dutch Banking Association – Nederlandse Vereniging van Banken
NVIEG	Dutch Association of Electronic Money Institutions
OTC	Over the counter
PSD	Payment Service Directive
SDN	A standard for sending bills electronically – Standaard Digitale Nota
SEPA	Single Euro Payments Area
TARGET2-NL	The Dutch component of the ESCB's TARGET2 RTGS system

Netherlands

TFEU	Treaty on the Functioning of the European Union
TOM MTF	A multilateral trading facility located in Amsterdam
UTP	Universal trading platform
VEB	The Association of Stockholders
WFT	Financial Supervision Act – Wet Financieel Toezicht

Introduction

Like others around the world, the Dutch payment system has been influenced by technological innovation and evolving payment methods. The use of debit cards continues to increase for point of sale payments. In 2010, more than 2 billion debit card purchases were made at points of sale, representing about 28.5% of all domestic point of sale payments. Cash continues to be the most frequent used form of payment at point of sale with 68.5% of domestic point of sale payments. For remote payments, the most frequently used instruments are electronic credit transfers and direct debits. In recent years, online shopping has become more and more important. iDEAL is the most used payment method for online purchases, accounting in 2010 for nearly 69 million transactions.

Retail payment services are provided by most commercial banks. Collectively, the banks process around 5 billion cashless retail payments a year. The Dutch payment services market is quite concentrated, as is the entire banking market. The bulk of private customer accounts are held with just a few banks. In addition to the deposit-taking institutions that offer a wide range of payment services, a few international credit card companies offer credit card services.

Many retail payments are processed centrally by the automated clearing house Equens, in which nearly all banks participate. Another low-value payment system, licensed to process Dutch debit card transactions since 2007, is CCV, which has smaller processing volumes than Equens.

Large-value payments are processed via TARGET2, the RTGS system. TARGET2 is the ESCB's payment system for interbank payments in euros.

At present, the Amsterdam securities exchange is a subsidiary of NYSE Euronext. Transactions in both securities and derivatives executed on Euronext Amsterdam are cleared by LCH.Clearnet SA. LCH.Clearnet is a Paris-based company with a local branch in Amsterdam. There is also a central counterparty based in the Netherlands: the European Multilateral Clearing Facility (EMCF). EMCF is the central counterparty for some exchanges located in northern Europe and for the largest European multilateral trading facilities (MTFs). All trades in Dutch securities are settled on the Euroclear Group's Euroclear Settlement of Euronext-zone Securities platform.

However, the Dutch securities landscape is in state of change. In May 2010, NYSE Euronext cancelled its clearing contract with LCH.Clearnet. Due to the period of notice, this would have resulted in its services being discontinued at the end of 2012. But since the process of establishing or selecting a new central counterparty (CCP) was thwarted by the intended merger between NYSE Euronext and Deutsche Börse (which did not go through), the contract between NYSE Euronext and LCH.Clearnet has been extended until 2013. No final decision has been made on the situation thereafter.

1. Institutional aspects

1.1 The general institutional framework

1.1.1 *Institutions responsible for regulating, supervising and overseeing the financial infrastructure*

The institutions responsible for the regulation, supervision and oversight of the payment, clearing and settlement infrastructure are the Netherlands Authority for the Financial Markets

(AFM), tasked with supervising the operations of the financial markets,¹ and the Netherlands Bank (DNB), the central bank of the Netherlands, which exercises prudential supervision over the financial sector.² In addition, the Minister of Finance also has some regulatory and supervisory powers in this field.

DNB exercises oversight of institutions and systems that offer clearing and settlement services in the field of payments and securities. DNB has a double mandate in this respect, based both on national law and on EU Treaties. Under the Bank Act 1998, one of DNB's basic tasks within the national context is to "to promote the smooth operation of payment systems".³ However, DNB is also an integrated part of the European System of Central Banks (ESCB), whose tasks are laid down in the Treaty on the Functioning of the European Union (TFEU) and the Statute of the ESCB, which is an integral part of the EU Treaties. The promotion of the smooth operation of payment systems is one of these tasks.⁴ The Statute of the ESCB furthermore provides a specific legal basis in Article 22, according to which "the ECB and the national central banks may provide facilities, and the ECB may make regulations, to ensure efficient and sound clearing and payment systems within the Union and with other countries".

On the basis of the Dutch Financial Supervision Act, the AFM and DNB jointly supervise the clearing and settlement of securities transactions on regulated markets and multilateral trade facilities in the Netherlands.⁵ Also, the AFM has been designated by the Minister of Finance as the supervisor of the CSD regulated under the Dutch Securities Giro Transfer Act (*Wet giraal effectenverkeer*),⁶ while the Minister of Finance retains some supervisory powers under this Act.

1.1.2 The legal framework

The Netherlands is an EU member state and part of the euro area. As a consequence, EU legislation applies in the Netherlands, either without any further legislative action of the national legislator being required (as is the case for EU regulations, eg Regulation (EC) no 924/2009 on cross-border payments in the Community; Regulation (EC) no 1781/2006 on information on the payer accompanying transfers of funds), or through national law implementing the EU standards (notably in the case of EU directives). See also the descriptive Red Book chapter on the euro area for an overview of relevant EU law applicable in the Netherlands. This paragraph contains only an overview of the most relevant national law and regulatory frameworks covering the payment, clearing and settlement infrastructure in the Netherlands, starting with an overview of national law implementing relevant EU directives.

National law implementing relevant EU directives:

- Directive 98/26/EC on Settlement Finality in Payment and Securities Settlement Systems ("Finality Directive"): this directive has been implemented in the Dutch Financial Supervision Act and the Dutch Bankruptcy Act (Title 1.11a);

¹ Section 1:25 of the Dutch Financial Supervision Act (*Wet op het financieel toezicht*).

² Section 1:24 of the Dutch Financial Supervision Act.

³ Article 4(2) Dutch Bank Act 1998 (*Bankwet 1998*).

⁴ Article 127(2) TFEU, Article 3(1), fourth indent, Statute of the ESCB; which is also reflected in Article 3(1) under (e) of the Dutch Banking Act 1998.

⁵ Article 5:26 in conjunction with Article 5:30(e) Dutch Financial Supervision Act (transactions on regulated markets) and 4:91a Dutch Financial Supervision Act (transactions on multilateral trade facilities) respectively.

⁶ Ministerial decree 9 July 2002 (*Stcrt*, 2002, 134).

- Directive 2001/24/EC on the reorganisation and winding-up of credit institutions (“Winding-up Directive”): this directive has been implemented in the Dutch Bankruptcy Act (Title 1.11aa);
- Directive 2002/47/EC on financial collateral arrangements (“Collateral Directive”): this directive has been implemented in the Dutch Civil Code (Title 7.2);
- Directive 2004/39/EC on markets in financial instruments (“MiFID”): this directive has been implemented in the Dutch Financial Supervision Act and several ministerial orders pursuant to this act;
- Directive 2005/60/EC on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing and Directive 2006/70/EC laying down implementation measures: these directives have been implemented in the Dutch Act on the prevention of money laundering and terrorism financing;
- Directive 2007/64/EC on payment services in the internal market (“Payment Services Directive”): this directive has been enacted in the Dutch Financial Supervision Act and the Dutch Civil Code;
- Directive 2009/110/EC on the taking up, pursuit and prudential supervision of the business of electronic money institutions (“E-money Directive”): this directive is currently in the process of implementation.

Other national legislation relevant for the payment, clearing and settlement infrastructure in the Netherlands includes – besides general principles of private law contained in the Dutch Civil Code – the External Financial Relations Act 1994, which contains provisions relating to external payments, such as the obligation to report certain transactions for balance of payments purposes. Of particular importance for the securities post-trading infrastructure is the Dutch Securities Giro Transfer Act, which provides for the establishment of an institute responsible for the safekeeping, administration and general control of the book-entry securities transfer system. In accord with this Act, the institute for the book-entry transfer of securities is listed officially at the Chamber of Commerce as the Nederlands Centraal Instituut voor Giraal Effectenverkeer BV (Necigef). More generally known under its trade name of Euroclear Nederland, this facility holds collective deposits in which the owners of securities are entitled to their proportionate share. Euroclear Nederland determines which securities may enter its book-entry transfer system. Most securities listed on the Euronext Amsterdam stock market are book-entry securities held in custody by Euroclear Nederland. Under the Act, dematerialised securities may also be included in the book-entry system. The post-trade infrastructure of securities traded on regulated markets and multilateral trade facilities in the Netherlands is also subject to the oversight framework jointly established by the AFM and DNB, which imposes minimum standards on clearing and settlement systems.

Several legislative initiatives at the EU level will also have a major impact on the regulatory landscape regarding the clearing and settlement infrastructure in the Netherlands, including a proposed regulation on OTC derivatives, central counterparties and trade repositories; an awaited proposal for EU legislation on central securities depositories; and an awaited proposal for EU legislation on legal certainty of securities holding and disposition. For further details of these initiatives, see the descriptive Red Book chapter on the euro area. Planned legislation relating to the supervision of post-trade services and infrastructure at the national level was put on hold awaiting the outcome of these EU initiatives.

1.2 The role of the Netherlands Bank (DNB)

DNB is a private limited company whose shares are held by the Dutch State. The Bank Act, amended in 1998 to accommodate the Maastricht Treaty, ensures that DNB is independent from the government. The Bank Act 1998 and the Statute of the ESCB stipulate the tasks of DNB in respect of payments.

Pursuant to the Bank Act 1998 and the 2007 Financial Supervision Act, DNB is responsible for the supervision of banks, payment institutions and electronic money institutions. Banks, payment institutions and electronic money institutions must obtain authorisation from DNB and be entered in its register. They can also obtain a license in another EU country in order to operate in the Netherlands.

The Bank Act 1998 states that DNB must strive for the smooth operation of payment systems. It has a dual role with regard to payment systems: on the one hand, it provides payment services to banks and, on the other hand, it is responsible for the oversight of payment and securities settlement systems. For these purposes, DNB holds regular consultations with banks and other parties involved in the functioning of these systems.

1.2.1 The operational role

DNB's operational contribution towards the smooth and efficient settlement of economic transactions takes the form of services relating to cash payments, non-cash payments and securities transactions.

Services in respect of cash payments

The Bank Act from 1998 states that one of DNB's tasks is "to provide for the circulation of money as far as this consists of banknotes". This provision is in line with the Statute of the ESCB, which states that the Governing Council of the ECB may authorise the ECB and the national central banks (NCBs) to issue banknotes within EMU. DNB performs the following tasks in respect of the circulation of money:

- developing and ensuring the production of euro banknotes within the framework of the ESCB;
- distributing banknotes;
- verifying and inspecting banknotes both before and after circulation; and
- operating a national analysis centre for counterfeited banknotes.

The role of DNB in banknote circulation has changed in recent years. The involvement of commercial banks in this activity has increased, and the number of banknotes returned to DNB has declined. Banknotes are distributed through DNB's head office in Amsterdam. The commercial banks obtain from DNB the banknotes they need to supply their customers with cash. Most banknotes are distributed via ATMs, of which there are around 8,000 in the Netherlands. Excess banknotes flow back to the banks, which usually process them in cash centres. The banks check the banknotes for authenticity and soiling in accordance with the ECB Decision no ECB/2010/14 on the authenticity and fitness checking and recirculation of euro banknotes. This process is monitored by DNB. The unfit notes and a share of the fit notes are transferred to DNB, while the remaining fit notes are put back into circulation.

In the Netherlands, other cash handlers besides banks, such as retailers and casinos, are also involved in the recirculation of banknotes through ATMs. They fill ATMs with banknotes received at the cash register. The ECB Decision applies not only to banks but also to other parties that operate ATMs.

While DNB is responsible for banknote issuance, the Ministry of Finance is responsible for minting and issuing coins under the Coinage Act. DNB gives advice on the number of coins to be minted annually. Under a Royal Decree, DNB is responsible for the distribution of coins.

Services in respect of non-cash payments

DNB performs an operational role in the processing of non-cash interbank payments through TARGET2-NL. TARGET2 is the payment system operated by the ESCB for interbank

payments in euro. TARGET2 was introduced in the Netherlands on 18 February 2008. The difference vis-à-vis the previous version of TARGET is that it uses one central technical platform for payments, eliminating the need to maintain national large-value payment systems. Financial institutions send their large-value payments directly to the platform. Most Dutch credit institutions participate in TARGET2-NL.

Services in respect of securities transactions

DNB used to play a major operational role in the settlement of high-value securities transactions. For securities transactions not performed on the stock exchange, it provided delivery versus payment (DVP) services for banks. But after the launch of the Euroclear Settlement Securities (ESES) platform, DNB outsourced the processing of the cash settlement of all security transactions, both on-exchange and off-exchange, to ESES. For this reason, the operational role of DNB in effecting settlements on the ESES platform was reduced to opening, managing and monitoring the ESES cash accounts for participants. However, the cash settlement still takes place in central bank money. Furthermore, DNB allows clearing participants to meet their margin and clearing fund obligations to the CCP using their collateral account with DNB. This is the so-called guarantee model.

1.2.2 DNB as catalyst

In its role as catalyst, DNB encourages dialogue between stakeholders and conducts research on payment behaviour and payment costs with a view to increasing the payment system's efficiency. In 2002, the National Forum on the Payment System (Maatschappelijk Overleg Betalingsverkeer) was set up, representing both providers and users of the payments system. Hosted and chaired by DNB, the Forum holds regular consultations on the implications of developments in payment systems such as the creation of the Single Euro Payments Area (SEPA). Together with DNB and Currence (Currence is the owner of the uniform Dutch payment products PIN, Chipknip, Acceptgiro, iDEAL and Incasso/Machtigen), the Dutch banks have set up a SEPA Steering Group to prepare for the introduction of European payment products in the Netherlands. This will involve close consultation with payment service providers and users in the National Forum on the Payment System (The National Forum).

The National Forum has several working groups, including one on social efficiency. This body investigates how social efficiency in the Dutch payment system can be improved in the light of key technical trends. Among the issues addressed are cost structures and the effectiveness of incentives for efficient payment behaviour. A second working group, on availability and accessibility, investigates how to safeguard and improve the physical availability and accessibility of payment services for consumers and businesses. For its part, the working group on security is concerned with safeguards to the security of the payment system. Its remit encompasses personal security and the security of payment products.

1.2.3 DNB as overseer

DNB is also responsible for payments and securities oversight. The oversight task pursues dual goals within DNB's wider objective of protecting financial stability. The goals of oversight are to help reduce systemic risk that may arise from payment and securities transactions and to promote the smooth operation of the Dutch payment system.

The scope of oversight comprises all payment systems and products and those securities clearing and settlement systems which are relevant to the Netherlands. DNB exercises oversight on three categories of systems:

- payment systems, such as TARGET2, that settle large-value payments in the Netherlands;

- securities settlement systems, of which the most important are LCH.Clearnet SA (LCH.Clearnet) for the clearing of securities and derivatives, Euroclear Nederland for the settlement of securities and DNB for the settlement of payments. Oversight on this category is conducted jointly with the AFM;
- the retail payments system, including the Clearing and Settlement System (CSS) for processing transactions. Dutch payment products such as electronic purses, debit card payments, direct debit, iDeal and the MasterCard and Visa card brands all come under this heading.

DNB's oversight on payments is mandated by both the Bank Act from 1998 and the EU Treaty. The legal basis for the oversight of securities clearing and settlement systems is provided by the Financial Supervision Act and secondary legislation related to licensing for regulated markets or multilateral trading platforms.

Oversight is conducted by monitoring the systems and products relevant to Dutch payments, assessing them against standards and – if necessary – enforcing changes. Oversight for securities transactions and large-value payments is organised internationally, as these activities have become highly internationalised.

Oversight subject	Lead overseer/regulator	Other overseers/regulators
Interbank large value payments		
TARGET2	ECB	Euro system national central banks
TARGET2-NL	DNB	
EURO1	ECB	Euro system national central banks
CLS	Federal Reserve	G10 central banks and other central banks of the 17 currencies concerned
SWIFT	National Bank of Belgium (NBB)	Other G10 central banks
Securities clearing and settlement		
LCH.Clearnet SA	Rotating presidency regulators from Euronext countries	AFM, DNB and regulators from Belgium, France and Portugal
LCH.Clearnet Group Ltd	Commission Bancaire (France)	AFM, DNB and regulators from Belgium, France, Portugal and the United Kingdom
EMCF	AFM and DNB	FSA and regulators from Denmark, Finland, Hungary, Iceland and Sweden
Euroclear SA	NBB and CBFA	AFM, DNB and regulators from Belgium, Finland, France, Ireland, the UK and Sweden
Euroclear NL	AFM and DNB	
Euroclear ESES	NBB and CBFA	AFM, DNB and regulators from France
EuroCCP	Financial Services Authority (FSA)	AFM and DNB
ECC	BaFin	AFM, DNB and Bundesbank
Retail payments		
Equens (CSS, CSM and Switch)	DNB	
VISA Europe (VISA and V Pay)	ECB	Euro system national central banks
MasterCard Europe (MasterCard and Maestro)	NBB	Other euro system national central banks and ECB
Currence (Chipknip, Acceptgiro, PIN, Incasso, iDEAL)	DNB	
NVB (Urgent payment order)	DNB	
UPSS	DNB	

Concerning the practical aspects of oversight, a distinction is made between:

- evaluating the setup of the assessment frameworks for the management of risks inherent in securities clearing and settlement systems, payment systems and payment instruments; and
- testing the systems' operating procedures.

DNB works jointly in various configurations with a large number of foreign overseers and regulators. It is only in the retail payment sphere, which is currently still organised along national lines, that DNB continues to work largely independently. The table on the previous page gives an overview of the systems subject to oversight and the institutions responsible for such oversight in 2010.

1.2.4 Cooperation with other institutions

DNB participates in the Holland Financial Centre, a Dutch public-private initiative set up in 2007 by organisations from throughout the financial sector, the public sector and regulators. Its main purpose is to develop initiatives that help ensure the Dutch financial sector remains strong, open and able to compete internationally.

Euroclear SA/NV has set up Market Advisory Committees (MAC) in each country for which it acts as CSD or the central settlement system. In October 2006, the Euroclear SA/NV Board approved the dissolution of the Belgian and Dutch MACs, and a joint Belgian/Dutch Market Advisory Committee (BeNeMAC) was established. After an evaluation at the end of 2011, Euroclear decided to split up the BeNeMAC into separate Belgian and Dutch MACs as of 1 January 2012. In addition to the local MACs, a new ESES MAC was established at the same time, with representatives of the Belgian, Dutch and French MACs. The purpose of the Dutch MAC is to act as Euroclear SA/NV's primary consultation platform for the Dutch securities markets. It also monitors the principles of performance and governance described by Euroclear SA/NV in 2002, which have not been amended. The ESES MAC has the same purpose as the Dutch MAC on an ESES level. The members of the Dutch MAC, and the other MACs, are appointed by the market and approved by the Board of Euroclear SA/NV.

Apart from these formal consultative structures, there are also more informal meetings between representatives at all levels of the Dutch central bank and other market participants. One example is the "Werkgroep Liquiditeit" (Working Group on Liquidity Management), comprising DNB and Dutch banking representatives, which deals with the management and settlement of cash movements resulting from external payments or the cash leg of securities transfers. The Working Group aims to prevent liquidity problems from arising or to solve them smoothly. It is regularly informed about the latest developments by DNB.

In the light of the substantial numbers of changes in the Dutch environment, DNB and the commercial banks set up a consultative structure in order to exchange views about policy objectives formulated by national and international authorities and to communicate their own policy aims.

In late 2008, these contacts led to the foundation of the Dutch Advisory Committee Securities Industry (DACSI). The primary objective of this not-for-profit association is to protect and promote the interests of the users of the securities and derivatives markets infrastructure in the Netherlands and abroad.

At the European level, two managers of DNB's Payments Division are members of the ESCB's Payment and Settlement Systems Committee. Furthermore, numerous ESCB working groups, in which DNB staff participate, are active in the field of payment systems. Cooperation in the field of securities also takes place in the ESCB-ESMA (European Securities and Markets Authority) working group. On a broader international level, the main forum is the Committee on Payment and Settlement Systems of the Bank for International Settlements (BIS), in which two managers of DNB's Payments Division participate. More cooperation with other institutions is described throughout this chapter.

1.3 The role of other private and public sector institutions

An overview of other important private and public institutions in the payments and securities sectors can be found in the subsections below.

1.3.1 Institutions in the payment sector

Dutch Banking Association

The Dutch Banking Association (Nederlandse Vereniging van Banken, NVB) was established in 1989 to represent the common interests of the Dutch banks. Representing the common interests of the banking sector, it aims for a strong, healthy and internationally competitive banking industry in the Netherlands. Virtually all banks operating in the Netherlands, including foreign bank branches, belong to the NVB, which is active in many areas of importance to individual banks, including payments. The Committee on Payment Systems, as the main consultative body on payment systems, is concerned with general policy frameworks and joint infrastructures, as well as retail and wholesale products. It heads a number of working groups covering a variety of aspects relating to payment systems.

The NVB also accommodates some collective, non-commercial tasks that support efficient and secure payments. Examples of such activities are the management of account numbers and of Dutch interbank ATM usage (Nationaal Gastgebruik Geldautomaten). The NVB performs secretarial services for the Dutch Association of Electronic Money Institutions (NVIEG).

Currence

Currence is the owner of the uniform Dutch payment products PIN, Chipknip, Acceptgiro, iDEAL and Incasso/Machtigen. It licenses and certifies banks and other operators in the Dutch payment system in the use of these products.

Dutch Payments Association

In 2011, the banks and Currence established the Dutch Payments Association, in which the banking sector accommodates collective, non-commercial undertakings aiming to promote efficient and secure payments. Examples of such activities are the management of account numbers and the coordination of fraud prevention. The scheme was prompted by the increasingly international payment landscape. Dutch payment products are being replaced by European ones and new players are entering the Dutch market. These new players also have an interest in the activities of the NVB and Currence. As of 2011, the collective work will gradually be transferred to the payment entity, which payment institutions may join. DNB will act as an observer in the different forums and the Association will be subject to oversight.

National Forum on Payments

The National Forum on the Payment System (Maatschappelijk Overleg Betalingsverkeer) was set up in 2002 by the Minister of Finance with a mandate to promote the efficiency of the Dutch payment system. The Forum's key aim is to determine how the payments system can be run more efficiently for consumers, businesses and banks alike – which is why it represents both the providers and the users of payment systems, including retailers' and banks' umbrella organisations, the consumer interest association "Consumentenbond" and disabled people's organisations. The Ministry of Finance, the Ministry of Economic Affairs, Agriculture and Innovation, as well as Currence (the Payments Association) are observers. The Forum is chaired by DNB, which also provides secretarial support. The Forum has working groups on social efficiency, availability and accessibility, security and SEPA. The Forum meets twice a year and holds regular consultations on the implications of developments in payment systems.

Equens

Equens is the central clearing institute for retail payments. Set up by the banks, its aim is to promote and maintain efficient payment processing and reliable payment systems. Equens was formed in 2006 out of the merger between Interpay Nederland BV and the German

Transaktionsinstitut für Zahlungsverkehrsdienstleistungen. Since July 2008, Equens has been both a retail payment clearing house and a back office processing service provider.

CCV

In 2007, CCV received a licence from Currence to process PIN transactions. CCV also processes credit, fuel, private label and loyalty cards. CCV is the Dutch market leader in POS terminals.

1.3.2 Institutions in the securities sector

Euronext Amsterdam NV (Euronext Amsterdam)

Euronext Amsterdam, a wholly owned subsidiary of Euronext NV (Euronext), is responsible for the organisation of cash and derivatives markets in the Netherlands. Euronext is the result of a merger in 2000 between Amsterdam Exchanges, the Bourse de Paris and the Brussels Exchange; in 2002, Bolsa de Valores and London International Financial Futures and Option Exchange also joined Euronext. In 2008, Euronext merged with the New York Stock Exchange to form NYSE Euronext, which is incorporated in Delaware, United States.

The Order Machine (TOM) Multilateral Trading Facility (MTF)

TOM started in 2010 as an MTF located in Amsterdam. TOM MTF supports trading in shares that are listed on several exchanges. In the near future, TOM MTF will offer trading in derivatives as well. TOM MTF is a regulated trading venue under the supervision of the Dutch Authority for the Financial Markets. TOM MTF provides banks, brokers, market-makers and other professional market participants with access to high-speed trading in liquid shares.

Euroclear Nederland

Euroclear Nederland, the central securities depository in the Netherlands, has been part of the Euroclear Group since 2002. Pursuant to the Securities Giro and Transfer Act, Euroclear Nederland is responsible for book-entry transactions, as well as the custody, management and administration of securities on behalf of its participants.

The Euroclear Interprofessional Securities Centre (ENIEC) is a sister company of Euroclear Nederland. As of the launch of the Euroclear Settlement of Euronext zone Securities platform in January 2009, its activities have been limited to the tasks of the national numbering agency and the cancellation of securities.

Authority for the Financial Markets

The Netherlands Authority for the Financial Markets (AFM) has been responsible for supervising the operation of the financial markets in the Netherlands since 2002. This means that AFM supervises the conduct of the entire financial market sector, including savings, investment, insurance and loans. AFM is the successor of the Stichting Toezicht Effectenverkeer (Securities Board of the Netherlands), which previously supervised participants in the securities markets. The AFM was established after a review of financial market sector supervision by the Ministry of Finance. As a result, sector-based supervision was replaced by function-based supervision, divided into prudential and market conduct supervision. DNB has been responsible for prudential supervision since its merger with the Pensions and Insurance Board (Pensioen- & Verzekeringskamer) in 2004. At the international level, AFM is the Dutch representative at the International Organization of Securities Commissions (IOSCO) and the European Securities and Markets Authority.

Dutch Securities Institute

The Dutch Securities Institute (DSI) was created in 1999 on the initiative of Amsterdam Exchanges, the stock exchange for the Netherlands. The DSI aims to underpin investor and consumer confidence by upholding the quality and integrity of the financial industry workforce. DSI registration is granted to financial industry employees after a screening process that ensures they meet strict standards of expertise, integrity and experience. To retain their registration, holders must pursue continuing education and observe the DSI code of conduct. Sanctions may be applied if the code is breached.

Association of Stockholders

The Association of Stockholders (Vereniging van Effectenbezitters, VEB), founded in 1924, aims to promote the interests of private and institutional stockholders and stockholding in general. The VEB seeks to achieve its goals by attending shareholders' meetings, asserting voting rights, arranging collective actions, and by providing information and organising seminars.

2. Payment media used by non-banks

2.1 Cash payments

Banknotes and coins are the media used for cash payments. Both are legal tender, although the acceptance of coins by the public is compulsory only to certain maximum amounts. Under the terms of the Coinage Act 2002, coins are produced by the Royal Mint, an institution supervised by the Ministry of Finance. In accordance with Article 105a of the Treaty establishing the European Community, "the ECB has the exclusive right to authorise the issue of banknotes. The ECB and the national central banks may issue such notes". With reference to the Treaty, the Bank Act 1998 stipulates that DNB has the sole right to issue banknotes in the Netherlands.

At the end of 2010, the currency in circulation consisted of seven denominations of banknotes (EUR 500, 200, 100, 50, 20, 10 and 5) and eight denominations of coins (EUR 2, 1, 0.50, 0.20, 0.10, 0.05, 0.02 and 0.01). Since September 2004, the total amount paid in cash at most retailers has been rounded off to the nearest multiple of 5 eurocents. Although the 1 and 2 eurocent coins remain legal tender, the rounding off has limited their use, leading to cost savings for retailers and greater convenience for consumers.

Since the introduction of euro cash, the number of euro coins and notes in circulation within the Netherlands has been unknown. However, it is certain that DNB and the commercial banks have been processing fewer banknotes during the past years. This is in accordance with the gradual decline in the use of cash in the Netherlands. The most commonly used banknotes in the country are the EUR 50 and lower denominations. Of the coins, the EUR 0.05 is the most frequently used.

2.2 Non-cash payments

2.2.1 Non-cash payment instruments

Non-cash payments are made by transferring money deposited in a payments account, to which the account holder has direct access, by ordering the bank to transfer the desired amount. Most households and businesses hold one or more accounts. At the end of 2010, there were about 24 million accounts, of which around 2.6 million were business accounts. Nearly all transactions in trade and industry are settled by non-cash payments.

In 2010, about 5.2 billion non-cash transactions were made for a total value of around EUR 5,500 billion. In order to transfer deposited money, Dutch banks offer a range of payment instruments that includes credit transfers, direct debits, payment cards and urgent payments.

2.2.1.1 Credit transfers

Almost all remote payments in trade and industry as well as a significant part of household payments are made in the form of credit transfers. Credit transfers are prominent in the Netherlands, accounting for 11.9% of the total volume and 47.7% of the total value of retail payments. The formats for credit transfers have been standardised between banks and are also used by the public sector. After the direct debit, the electronic credit transfer is the most frequent method of remote payment. The growing use of internet banking contributes to this development.

For efficient processing, Dutch banks offer two types of pre-arranged credit transfers: the standing order and the “inpayment transfer” or *acceptgiro*. In order to pay recurrent bills, an account holder may choose to set up a standing order with the bank, on fixed dates, for fixed amounts and for a designated payee account. Standing orders are frequently used for rent, subscriptions, insurance premiums etc. On the fixed date, the bank effects the transfer and no further action on the part of either the account holder or the payee is required.

When using an *acceptgiro*, the payee sends the payer a fully prepared transfer form together with the invoice. In most cases, the payer’s account number, name and address are pre-printed on the form, as in previous payments. The payer signs the form and sends it to his or her bank. This instrument is used for both regular payments and non-regular payments of either fixed or varying amounts. Traditionally, the *acceptgiro* has been a paper-based instrument that is processed mainly via scanned image data. But today most *acceptgiro* data reach banks in digital form. Account holders use electronic banking applications to deliver their payment orders and are thus responsible for converting the relevant data into electronic form. Banks offer web-based electronic billing applications by which invoices and *acceptgiros* can be sent and received.

2.2.1.2 Direct debits

In 2010, direct debits accounted for 12.8% of all retail payments by volume and 5.0% by value. A direct debit is established when the payer signs a mandate authorising the payee to charge the former’s account for invoiced goods or services. The transfer is initiated by the payee, who sends the payment order electronically to the bank with instructions to collect the money by debiting the debtor’s account in favour of its own account. The payer can, however, in most cases have the payment reversed within a set period (payback guarantee).

Direct debits are frequently used for collecting recurrent payments, such as those to public utilities and telephone companies. The electronic form and the short processing route make the direct debit a very efficient means of collecting such payments. Dutch banks offer several types of direct debit providing for specific needs, such as the purchase of lottery tickets (which have no payback guarantee).

2.2.1.3 Payment cards

At the end of 2010, some 30.2 million payment cards were in issue in the Netherlands (comprising 6 million credit cards and 24.4 million debit cards). The following types of payment cards are in circulation: debit cards, credit cards, loyalty cards and prepaid cards (single-purpose and multipurpose).

Debit cards

Debit cards are cards that afford direct electronic access to a bank account with the use of a personal identification number (PIN). The majority of debit cards have a magnetic stripe as

well as an EMV chip. At the end of 2010, almost all cards complied with the new European standards, which require the more secure EMV chip that will ultimately replace the magnetic stripe. The Dutch debit card brand PIN will disappear in SEPA; instead Dutch banks have chosen to issue Maestro and V-Pay debit cards. Three types of debit functions can be distinguished: withdrawal, payment and identification in the context of payments. Debit cards are used to make withdrawals, either in cash at an ATM or in electronic money by loading an electronic purse. In 2010, some 434 million cash withdrawals were made with an average amount of EUR 120 per transaction. All 7,919 ATMs in the Netherlands are interoperable and connected to the international ATM networks. For security purposes, the use of another bank's ATM is subject to a daily limit in terms of both the number of withdrawals and the amount withdrawn.

Debit cards are used mainly at EFTPOS terminals in shops, restaurants, hotels etc. In 2010, the total volume of EFTPOS terminal transactions exceeded 2 billion, accounting for a total value of EUR 79 billion, which corresponds to 20.5% of all retail payments but only 1.4% of the total value of retail payments. At the end of 2010, 259,000 EFTPOS terminals were in operation.

Debit cards are also increasingly used as an electronic identification device to authorise credit transfers made by telephone or through the internet.

Credit cards

The total number of credit cards in circulation increased to 6 million in 2010. The number of credit card transactions is relatively small, accounting for only 0.35% of retail payments. Since most Dutch banks issue MasterCard, this is the most used brand. Although few banks issue Visa, the number of issued Visa cards is high owing to Visa's co-branding strategy with non-financial institutions (insurers, automobile associations, etc). Some retail chains promote their own retailer cards (private label cards), but from a payment point of view their role is insignificant compared with the use of label cards and cash.

Prepaid cards

A prepaid card is a payment card which contains purchasing power that is paid for in advance. The most widespread prepaid card in the Netherlands is the *Chipknip*. The *Chipknip* is an electronic purse that is incorporated in the debit card. For consumers, the main use of the electronic purse is to make small-value payments. The electronic purse is used mainly in specific contexts, such as parking and vending machines. In 2010, 1.74% of retail payments were made with the *Chipknip*.

Public transport card

Another prepaid card, phased in since January 2009, is the *OV-chipkaart*. The *OV-chipkaart* is a public transport card. In 2010, more than 900 million transactions were made with the *OV-chipkaart*, which include paying transport fares, as well as loading and reloading money onto the card. In the near future use of the *OV-chipkaart* may be extended to low-value payments made at train stations.

2.2.1.4 Urgent payment

In 2007, the interbank system that processes urgent payments was upgraded to shorten processing times. In the new setup, urgent payments are processed individually via either TARGET2 or the Euro Banking Association's Euro1/Step1 clearing. The role of Equens has changed. Whereas previously Equens did the processing, Equens today supports the banks with BIC IBAN account information. This service converts the domestic account number format (BBAN) into the BIC IBAN number required for processing in Euro 1 or TARGET2. The specific facilities at DNB for processing and settlement have become redundant. Total processing time has now fallen to a maximum of one and a half hours, which is faster than

the current SEPA standard of one day for urgent payments. Although the volume of urgent payments has fallen since 2002, the average amount per transaction has increased. This is because fast and cheaper alternatives such as internet banking have become available for rapid transfers of relatively small amounts. However, these new methods are not suitable for large-value business transactions.

2.2.2 Non-cash payment terminals

E-payment scheme iDEAL

iDEAL is a payment method for making online payments directly between bank accounts, from a consumer to a merchant, via an internet e-banking application. Merchants can offer this method on their website at the end of an ordering process and automatically refer their customers to the iDEAL payment area. Developed by the three largest Dutch banks (ABN Amro, ING and Rabobank), the iDEAL payment method was introduced in October 2005. Other consumer banks joined iDEAL later, bringing the total of participating banks to eight in 2010. At the moment, iDEAL can only be used for online payments between consumers and businesses or institutions that hold a Dutch bank account. In 2006, its first full year of operations, iDEAL processed 5 million transactions. By the end of 2010, the annual volume of transactions had grown to 63 million transactions for a total value of EUR 5.2 billion.

Banks do not charge consumers for using iDEAL. But iDEAL accepting merchants do pay a charge per transaction, as determined by their acquirers. For both consumers and merchants, confirmation of a payment is immediate. The fact that iDEAL runs within the familiar and secure environment of consumers' own e-banking website and the direct guaranteed payment have proven to be iDEAL's success factors.

Standard Electronic Bill Presentment and Payment

In 2006, the same combination of Dutch banks that introduced iDEAL (ABN Amro, ING and Rabobank), in cooperation with biller service providers (BSPs), developed a standard for sending bills electronically; the so-called *Standaard Digitale Nota* (SDN). The aim is to replace the sending of paper-based bills through the post.

The SDN is a standard for the presentation of electronic invoices within the customers' e-banking environment. It defines a process for the exchange of data between BSPs (on behalf of invoice senders) and bank portals. The payment of the bill itself is similar to a regular credit transfer or direct debit initiated within the e-banking environment, except that all information fields are already filled in. Thus consumers do not need to type out the invoice details.

The receipt and payment of electronic invoices is free of charge. But businesses and institutions delivering bills electronically using SDN do pay a fee to their BSP. The main advantage of SDN is that it is a collective standard used by three large banks, and in the future presumably more. The development of SDN as a single common standard is believed to have had a positive impact on the acceptance and usage of electronic bills.

2.2.3 Interchange fee regulation

In the past, Dutch banks made multilateral agreements on the level of interchange fees for giro collection forms, direct debits and non-customer ATM withdrawals. These multilateral arrangements, endorsed by the Netherlands Competition Authority, expired in 2007 (for direct debit) and in 2008 (for giro collection forms and non-customer ATM withdrawals). Since then, Dutch banks have made bilateral interchange fee arrangements for these three payment instruments.

For credit card payments, Dutch banks apply the default interchange fees set by international credit card schemes. Multilateral interchange fees (MIF) for debit card payments of the

domestic PIN scheme have never been levied. But large Dutch banks have bilateral agreements on interchange fees for domestic debit card payments. These arrangements are also applied to domestic debit card payments with the Maestro and V-Pay international debit card schemes of MasterCard and Visa Europe respectively.

3. Payment systems

3.1 General overview

Cashless payments are processed in interconnected payment systems:

- the TARGET2 system of the Eurosystem for wholesale payments; and
- the Equens automated clearing house for retail payments and the CCV retail payment processor.

3.2 The real-time gross settlement system: TARGET2-NL

TARGET2-NL is the Dutch component of TARGET2, the Eurosystem's real-time gross settlement system for large-value payments in euros. It provides settlement finality in central bank money. The total daily average transaction volume in TARGET2-NL in 2010 was 33,000 payments, with a total value per day of EUR 294 billion. The average value per transaction amounted to EUR 8.9 million.

3.2.1 Institutional framework

DNB offers current account facilities to supervised credit institutions, allowing them to fulfil their reserve requirements on these accounts and permitting the settlement of payment transactions on its books. Although TARGET2-NL is, in principle, intended to handle only large-value interbank payments, there are in fact no upper or lower value bounds. Thus the system is also used for urgent customer payments. Further, TARGET2-NL offers settlement services to the retail clearing by Equens and provides the settlement link for securities settlement by Euroclear Nederland. The Dutch Treasury also uses TARGET2-NL.

Apart from TARGET2-NL, DNB offers accounts in the Home Accounting Module (HAM), another Dutch designated system, in which liquidity transfers take place. The HAM is used by some TARGET-eligible credit institutions that are not involved in the payments business to fulfil their minimum reserve requirements. DNB also uses the HAM to provide services to central banks outside the euro area.

3.2.2 Participation

The access criteria for TARGET2-NL are the same as for all TARGET2 component systems. TARGET2-NL has 70 direct participants, 44 indirect participants, 31 HAM account holders that meet the access criteria of TARGET2 and some HAM account holders that are customers of DNB but do not meet the TARGET2 access criteria (status as per December 2010). Participants include Equens, Euroclear Nederland and the Dutch Treasury.

3.2.3 Types of transaction

See the descriptive Red Book chapter on the euro area.

3.2.4 Operation of the system and settlement procedures

For operation of the system and settlement procedures see the descriptive Red Book chapter on the euro area.

3.2.5 Risk management

TARGET2-NL and DNB's local infrastructure comply with the TARGET2 Risk Management Framework as set out in the descriptive Red Book chapter on the euro area.

3.2.6 Pricing

The fees of TARGET2-NL are defined by the TARGET2 single pricing structure. For its part, the HAM (Home Accounting Module) levies a fixed fee of EUR 100 per month and a transaction fee of EUR 0.80.

3.2.7 Major ongoing and future projects

Major ongoing and future projects in TARGET2 are described in the descriptive Red Book chapter on the euro area.

3.3 Retail payment systems

3.3.1 Equens

Equens was formed in 2006 from the merger between Interpay Nederland BV and the German Transaktionsinstitut für Zahlungsverkehrsdienstleistungen. Since July 2008, Equens has been a Societas Europaea (Equens SE),⁷ a public limited liability company governed by a European body of law based on an EU directive.

With clients and partnerships in many European countries, the company offers pan-European market coverage for payment processing from offices in four countries – the Netherlands, Germany, Italy and Finland. With an annual processing volume of 9.7 billion payments and 3.9 billion POS and ATM transactions, Equens has a European market share of more than 12.5% as of 2010.

3.3.1.1 Institutional framework

The Equens Group comprises Equens SE and Equens SpA. Equens SpA was founded in 2008 as a 50/50 joint venture of the Italian ICBPI Group and Equens SE. Since January 2011, it has been a 100% subsidiary of Equens SE.

Equens SE is the central holding company with its corporate seat in Utrecht (Netherlands), as well as permanent establishments in Germany (Frankfurt and Stuttgart) and in Italy (Milan and Rome) and a representative office in Finland (Helsinki). The Payment Services Directive is applicable to the payment instruments processed by retail clearing houses such as Equens.

3.3.1.2 Participation

All Dutch deposit-taking banks participate in the clearing by Equens for Dutch payment products. Dutch banks as well as banks licensed in other European countries participate in the clearing of SEPA products. For SEPA transactions there are 42 participants and for non-SEPA transactions there are 47 participants.

⁷ A Societas Europaea, also referred to as a "Europe Inc" or "Europa AG", is a legal form under EU law.

3.3.1.3 Types of transaction

The company handles all types of Dutch current retail transactions and all types of SEPA products.

3.3.1.4 Operation of the system and settlement procedures

(a) Clearing and Settlement System (CSS)

Dutch domestic payment products are processed by the Clearing and Settlement System (CSS). CSS employs the lot settlement method, by which payment orders are processed frequently and settled at least every 30 minutes. The clearing amounts are notified to DNB, where every Dutch-based bank has an account in the TARGET2-NL system. Equens is authorised to instruct DNB to debit and credit these accounts in order to settle the payments. Once settlement has taken place, the banks inform their own account holders about changes to their bank balances, on the basis of the processing data they receive from Equens.

(b) Clearing and Settlement Mechanism (CSM)

The Equens CSM is a system for the clearing of SEPA payments. Participating banks send their SEPA payments to this CSM for clearing, through one of the different routes this CSM offers. Payments destined for other participants of the Equens CSM are settled within the Equens community. Payments destined for participants of CSMs linked to the Equens CSM are settled through European Automated Clearing House Association (EACHA).⁸

Finally, payments destined for other banks are settled through the EBA link. DNB offers Equens access to EBA's STEP2 clearing, by acting as a participant in STEP2. Equens offers the clearing and settlement of SEPA payments, both SEPA Credit Transfer (SCT) and SEPA Direct Debit (SDD). Independently of the route chosen, payments are settled in TARGET2. This settlement also takes place in lots.

For the clearing and settlement process, there is no difference between different types of payments (SCT or SDD). Equens provides a so-called Reach Table to the participants, which shows which banks can be accessed via which route. The payments flow is shown in the functional descriptions. Approximately 30 banks participate directly in Equens CSM, while Equens SpA uses the platform for the clearing of ICBPI payments.

(c) Dutch Interbank Authorisation Network (Equens switch)

In addition to the CSS, Equens manages the Dutch Interbank Authorisation Network (also known as the Equens switch), which facilitates, among other things, debit and credit card authorisations and transactions that use the PIN code as a means of identification (for cash withdrawals, point of sale payments, *Chipknip* loading etc).

3.3.1.5 Risk management

A retail system inherently faces low credit or liquidity risks. The systems operated by Equens do not provide intraday liquidity. Liquidity risks are mitigated primarily through the settlement via TARGET2, in which participants are required to provide sufficient liquidity to allow settlement. Furthermore, as Equens only settles participants' *net* positions and given the relatively limited size of the retail payment balances (in comparison to large-value wholesale systems), liquidity risks are of minor importance in the Equens systems.

3.3.1.6 Pricing

Equens is a commercial payments processor pursuing a market-driven pricing strategy.

⁸ EACHA is a network of CSMs with full coverage of banks within SEPA.

3.3.1.7 Major ongoing and future projects

(a) Domestic to SEPA migration services

Equens will facilitate the migration of its domestic clients to SEPA by offering conversion services. Domestic services that are designated as essential to domestic clients will be migrated to SEPA. Various other migration services offered will enable domestic clients to migrate without duplicate processing in their systems.

(b) Strategic perspective

Equens' strategy is geared towards realising further growth and economies of scale, with the aim of providing sustainable (financial) benefits to its clients. This growth is based on mergers, strategic partnerships and organic growth from the existing client base. Examples from 2010 are:

- acquisition of Montrada GmbH, which operates as an independent card services enterprise offering a complete service package for cashless payments. This ranges from consultancy to selecting the ideal payment method to providing on-site terminal installations and customer support; and
- Paysquare insourcing; Paysquare's processing has been insourced to Equens, combining the two organisations' business volumes. This has resulted in economies of scale and better service to new and existing clients.

3.3.2 CCV

In 2007, CCV received a licence from Currence to process PIN transactions. CCV also processes credit, fuel, private label and loyalty cards. CCV is the Dutch market leader in POS terminals.

3.3.2.1 Institutional framework

CCV is the trade name for a privately held group of companies with Van de Velden Holding BV as the parent company. In the Netherlands, CCV operates via the legal entity CCV Holland BV. Since the implementation of the PSD on 1 November 2010, CCV has been subject to supervision by DNB. The transaction processing and acquiring host processing activities are performed by the legal entity Computercentrum C van de Velden BV, whose shares are held by CCV Holland BV.

3.3.2.2 Participation

Participants include approximately 40 acquirers, issuers, banking networks and processors in the Netherlands, Belgium, Germany, Switzerland, the United Kingdom, Italy, Japan and China. The connected debit card acquirers are all Dutch banks. The connected credit card acquirers are located in the above-mentioned countries.

3.3.2.3 Types of transaction

CCV handles all sorts of retail and fuel card transactions in the Netherlands and all sorts of payment card transactions in Germany, Belgium and Luxembourg. In 2010, CCV processed almost 130 million transactions in the Netherlands.

3.3.2.4 Operation of the system and settlement procedures

CCV processes online authorisation messages for issuers. CCV performs these switching services for several petrol companies and credit card companies such as Visa, MasterCard, American Express, Diners etc. In addition, CCV delivers clearing files to all types of acquirer.

CCV acts as an acquirer host processor for several banks in the Netherlands. Since the end of 2008, CCV has also been an acceptant payment service provider in accordance with the

rules and regulations of Currence for the Dutch PIN brand. The PIN process is completely automated. Retail PIN payments are collected on behalf of and paid out to merchants via a separate institution (“Stichting Derdengelden CCV”) to ensure that funds received from the payment service users are not commingled at any time with funds from other CCV activities.

3.3.2.5 Pricing

Pricing is market-driven.

3.3.2.6 Major ongoing and future projects

A major current project is the migration from non-EMV-based Dutch PIN payment cards, terminals and processing to EMV-based Maestro and V-Pay equivalents.

4. Systems for post-trade processing, clearing and securities settlement

The Dutch securities landscape is currently in a state of change. In May 2010, NYSE Euronext, the US-European exchange that operates exchanges in Amsterdam, Brussels, Lisbon, London, New York and Paris cancelled its clearing contracts with the central counterparty LCH.Clearnet SA. For this reason, the derivatives clearing services were scheduled to be discontinued in mid-2012 and cash clearing at the end of 2012. NYSE Euronext had planned to set up its own central counterparty services in Europe.

However, in February 2011, NYSE Euronext and Deutsche Börse announced their intention to merge. Had the merger gone through, it would have definitely affected the post-trade situation in the Netherlands. For that reason the duration of the clearing contracts between NYSE Euronext and LCH.Clearnet SA was extended by one year and will now end in 2013. However, the European Commission blocked the merger in February 2012. NYSE Euronext is now investigating the options of setting up a new CCP, extending the contract with LCH.Clearnet and/or selecting another CCP.

4.1 General overview

The regulated market in the Netherlands is organised by Euronext Amsterdam NV. Clearing of securities and derivatives traded on the stock exchange of Amsterdam (and those of Brussels, Lisbon and Paris) is provided by LCH.Clearnet SA. In addition to the regulated market, Euronext Amsterdam also operates two multilateral trading facilities (MTF) in the Netherlands: NYSE Arca Europe and NYSE Alternext Amsterdam. The first provides a high-frequency trading platform for European blue chips, while the latter offers a listing and trading platform for small and medium-sized companies.

Besides the three trading venues operated by NYSE Euronext, the Netherlands has a fourth trading venue. The Order Machine (TOM) is a Dutch MTF established in 2010 that offers trading in listed Belgian, Dutch and French blue chips and Dutch mid-cap shares. In 2011, exchange-traded funds and derivatives were added to TOM's product range. TOM has chosen European Multilateral Clearing Facility NV (EMCF) to act as clearing provider for the cash trades executed on its trading platform and Holland Clearing House (HCH) for derivatives trades.

All Dutch securities settle on the ESES single settlement and custody platform, which is operated by the Euroclear Group. Since January 2009, when ESES was launched in the Dutch market, DNB has outsourced the settlement of the cash legs to Euroclear Nederland, but they still take place in TARGET2-NL.

4.2 Central counterparties and clearing systems

4.2.1 LCH.Clearnet SA

Institutional framework

LCH.Clearnet SA is a wholly owned subsidiary of LCH.Clearnet Group Ltd, which is majority-owned (83%) by its clients. The remaining shareholders (17%) are exchanges. LCH.Clearnet SA is incorporated in France, but has a branch in Amsterdam. This section provides a brief overview of LCH.Clearnet SA's characteristics and services. For more information, see the descriptive Red Book chapters on France and the euro area.

LCH.Clearnet SA is regulated as a credit institution and a clearing house by a regulatory college consisting of representatives of the market regulators and national central banks from the jurisdictions of Belgium, France, the Netherlands and Portugal. In addition, LCH.Clearnet SA is also regulated as a recognised overseas clearing house by the United Kingdom's Financial Service Authority and by other market regulators and central banks within jurisdictions where LCH.Clearnet SA provides services.

Types of products

LCH.Clearnet SA is the central counterparty (CCP) for securities and derivatives trades executed on Euronext Amsterdam. In December 2010, LCH.Clearnet replaced its Clearing 21 securities clearing system with the UCS system. The Clearing 21 system is still used for derivatives clearing, but will be replaced by UCS at the end of 2012. LCH.Clearnet acts as the CCP and guarantees the settlement of all transactions. Throughout the trading day, trades are entered automatically and in real time into the UCS securities clearing system or Clearing 21 derivatives clearing system. LCH.Clearnet becomes a counterparty (by novation) to both parties in a transaction as soon as the trade has been processed and transaction confirmation reports have been sent to the clearing members. By positioning itself between both parties, LCH.Clearnet guarantees the completion of every transaction.

Participation

Clearing of LCH.Clearnet is based on a layered clearing member structure: the clearing organisation forms the top layer, the general clearing members are in the layer below, followed by the clearing members and their customers. In principle, the clearing organisation deals with the clearing member only, and the clearing member in turn deals with its customers. This is also referred to as the principal-to-principal relationship. A participating clearing member may become a general clearing member or a direct clearing member. Direct clearing members are only permitted to clear transactions for their own company. General clearing members can also settle transactions on behalf of other exchange members, which in turn have their own customers.

Operations

As outlined above, LCH.Clearnet guarantees that every transaction it accepts will be completed (by virtue of its principal-to-principal relationship with clearing members). Clearing members extend the same guarantee to their customers. LCH.Clearnet requires collateral for positions in cash equities, options and futures, as stipulated in a set of risk management rules. Margin requirements are a vital aspect of this system, providing a buffer against the risks involved in options and futures trading.

In order to secure the settlement of transactions, LCH.Clearnet requires clearing members to provide cash or collateral for the fulfilment of margin obligations and as a contribution to the clearing fund.

The clearing organisation acts as the CCP in transactions. In the event of default by one of the parties, it may itself have to purchase the securities to be delivered by the defaulting

party or, in the case of an obligation to purchase, to sell the purchased securities. Consequently, it is also exposed to market risk arising from unexpected price movements. To that end, it obliges clearing members to provide collateral to equalise the margins required to fulfil the financial obligations. These margins are calculated on the basis of the obligations ensuing from positions taken (initial margin) and from non-realised profits and losses (variation margin). The collateral may consist of underlying instruments (cover on Euronext Amsterdam), domestic or foreign securities, or debt instruments. At the end of 2010, the total variation margin due to cash and derivatives clearing deposited with LCH.Clearnet amounted to EUR 687 million.

In addition to the margin requirements, a clearing fund extends a joint guarantee to clearing members. In return, clearing members pledge securities as collateral. The clearing fund's size is computed on the basis of contributed risk. The total clearing fund for the cash market should, at a minimum, cover the price risk that arises for the clearing member with the largest position. The total clearing fund for the derivatives clearing is calculated on the basis of clearing members' average number of open options in a certain option fund or option series multiplied by a fixed amount per contract. The clearing fund for cash and derivatives clearing amounted to EUR 161 million on 31 December 2010.

4.2.2 European Multilateral Clearing Facility (EMCF)

Legal and institutional framework

EMCF is a clearing house that was founded in 2007 to provide post-trade services for Chi-X, a London-based MTF. Together with Chi-X, EMCF has grown rapidly in recent years. EMCF is currently owned by ABN AMRO Bank NV (78%) and by NASDAQ OMX AB (22%). Based and registered in the Netherlands, EMCF operates under Dutch law. In the Netherlands, EMCF is supervised by the AFM and by DNB. The supervision is performed in accordance with the ESCB-CESR recommendations for central counterparties. For lack of statutory provisions for oversight, a tri-party agreement with AFM and DNB – based on the licence granted to TOM, for which EMCF performs clearing – serves as legal basis for the supervision. Parallel to this, EMCF has been granted recognised overseas clearing house status in the United Kingdom. For the supervision of EMCF, the Financial Services Authority largely relies on DNB and the AFM.

Types of transaction

EMCF provides CCP services for the main cash equities (blue chips) traded on several stock exchanges and multilateral trading facilities throughout Europe. One of them is the Dutch MTF TOM. In total, EMCF provides CCP services to more than 50 clearing participants in 19 European markets.

Participation

The following three types of market participant are distinguished:

1. the non-clearing participant, who executes trades on the trading platform but clears through a general clearing participant;
2. the direct clearing participant, who executes trades on the trading platform and clears its own business; and
3. the general clearing participant, who may execute trades on the trading platform and, subsequently, clear its own business, but who may also clear for third-party trading firms.

EMCF provides services to direct and general clearing participants. Any applicant wishing to be recognised as a clearing participant must meet the requirements set out in EMCF's Clearing Rule Book.

Operation of the system

EMCF uses novation to interpose itself between the buyer and the seller as the legal counterparty for both trade legs, ie EMCF legally becomes the seller to the buyer and the buyer to the seller. Two new contracts are created to replace the single contract between the two original parties. When the EMCF's MTM system has accepted (novated) the trade, EMCF sends a real-time acknowledgement to the exchange or MTF concerned.

As soon as a trade has been novated, it is netted in real time on a multilateral basis. Per clearing participant, netting is done per ISIN, per currency, and per account type (client, house or combined), at a level that can be specified by the clearing participant. EMCF uses the trade date netting model.

Since settlement always occurs at the local central securities depository (CSD), EMCF sends settlement instructions to the domestic CSD as soon as practicable for all markets covered, which is generally in the evening of the trading day. To do so, EMCF operates either its own CSD accounts or uses the services of settlement agents and/or account operators. In general, the net settlements of EMCF are treated as OTC transactions in the local CSDs. Regular DVP/RVP instructions are generally communicated to the CSD. This means that both EMCF and the clearing participant must send settlement instructions to the CSD. Consequently, these instructions need to match in order for the settlement to be effected. If a netted settlement instruction is not matched or delivered in time, the clearing participant can be fined as part of EMCF's settlement discipline regime. In markets supporting partial settlements, partial settlements will only take place at EMCF's request.

For the purpose of finality (and efficiency), EMCF plans to eliminate the settlement agents from its process flows. To this end, EMCF will open its own CSD and central bank accounts and obtain power of attorney from its clearing participants permitting it to act as an account operator on their behalf. The new arrangements will be phased in gradually in view of regulatory and other third-party dependencies.

Risk management

The risk management model of EMCF consists of four layers:

1. Admission requirements: only qualified, bona fide firms that comply with EMCF's admission requirements are permitted to join EMCF as clearing participants.

This layer provides assurance that all clearing participants are qualified to serve as clearing participants. Clearing participants have to meet a minimum initial capital requirement of:

- EUR 7.5 million, for a direct clearing member;
- EUR 25 million, for a general clearing participant.

In addition, EMCF monitors the financial and operational situation of all clearing participants.

2. Collateral: EMCF requires clearing participants to meet margin requirements for the portfolio by depositing collateral at EMCF.

The collateral deposited by the clearing participants should provide assurance that the portfolio of the defaulting clearing participant can be liquidated in case of a default under normal or mildly extreme circumstances without additional costs for other clearing participants. EMCF charges a single margin that comprises both the variation margin and the initial margin. Variation margin is the unrealised profit or loss on the portfolio currently in position. Initial margin is the maximum theoretical loss of the portfolio given the margin parameters. EMCF has devised its own margin calculation methodology, which is known as the Correlation Haircut. EMCF calculates both the initial and variation margin continuously during the day on the

basis of the latest positions and prices and reserves the right to call for extra intraday margin.

3. Clearing fund: in the event of default by a clearing participant, and if the collateral of the defaulting participant does not cover the liquidation of its portfolio, the clearing fund provides an additional buffer.

The clearing fund is designed to cover losses arising from a default that are not covered by the defaulting participant's margin payments or collateral. Based on stress tests performed by EMCF, the clearing fund's size is set at a level that would allow it to cover potential losses arising from extreme but plausible market circumstances. All clearing participants contribute to the clearing fund. The contribution is a percentage of the daily margin requirement with a minimum of EUR 1 million for direct clearing participants and EUR 3 million for general clearing participants. The contribution can be covered by a letter of credit, cash or bonds.

4. EMCF's own capital and that of EMCF's parent bank ie ABN AMRO NV. If the clearing is depleted, EMCF's capital and that of its parent will be called upon.

The capital of EMCF and/or that of its parent bank would be used to cover losses from defaults resulting from unlikely circumstances. ABN AMRO NV extends a so-called 403 guarantee in favour of EMCF, under which the bank is pledged to cover EMCF's obligations if the CCP can no longer meet them.

4.2.3 Holland Clearing House

Holland Clearing House NV (HCH), an ABN AMRO NV group member, is a CCP for derivatives for the TOM MTF. HCH interposes itself between buyer and seller by using the open offer technique. It is regulated and supervised in the Netherlands by the AFM and DNB. As HCH gained the AFM's and DNB's approval as recently as June 2011 and derivatives trading on TOM started only in July 2011, HCH's clearing volumes and market share are still small.

4.3 Securities settlement system

Euroclear Nederland operates the securities settlement system and is the central securities depository (CSD) of the Netherlands. Euroclear Nederland is a subsidiary of Euroclear SA/NV, which is itself a subsidiary of Euroclear PLC. Euroclear PLC is majority-owned (87%) by its users, with the remaining 13% interest held by Sicovam Holding, the former CSD in France. For further details, see the descriptive Red Book chapter on the euro area.

Participation

The participants in Euroclear Nederland are known as admitted institutions ("aangesloten instelling"). Admitted institutions must fall within one of the following categories:

- the Dutch State as represented by the Agent of the Ministry of Finance in the Netherlands;
- credit institutions from the European Economic Area;
- investment firms from the European Economic Area;
- central securities depositories of a member state of the European Economic Area;
- national central banks participating in the European System of Central Banks;
- public institutions of a member state of the European Economic Area; or
- clearing institutions under appropriate regulatory supervision.

At the end of 2010, Euroclear Nederland had 70 admitted institutions; 17 from the Netherlands and 53 from other jurisdictions.

Regulatory framework

The legal basis for the performance of oversight on Euroclear Nederland systems is provided by the Financial Supervision Act (“Wet op het financieel toezicht (Wft)”).

Under Section 5.26 of the Act, the Dutch Minister of Finance is authorised to impose restrictions and conditions governing the granting of the recognised status of a market in financial instruments. For Euronext, this has been accomplished by means of the official recognition or license agreement from the Minister of Finance.

Euronext’s license agreement (or official recognition) stipulates that Euronext NV and Euronext Amsterdam NV must ensure that the clearing and settlement systems used on Dutch securities exchanges adhere to the rules laid down in the Euronext Oversight Framework for Clearing and Settlement. This framework was developed by the AFM and DNB, who are jointly responsible for the oversight of the (clearing and) settlement system.

Types of assets and products settled

It is only possible to settle transactions in Euroclear Nederland if the securities concerned have Euroclear Nederland as their CSD of Reference.⁹ Transactions in securities can be settled in two different ways: netted for transactions done on an exchange (on-exchange settlements) or trade-for-trade for OTC transactions (off-exchange settlements).

On-exchange settlement

The vast majority of all stock exchange settlements are processed in the netting system. At the end of the trading day T, the clearing house LCH.Clearnet determines the numbers of different securities that each clearing member should deliver or receive and the accompanying cash amounts. To calculate the net settlements, LCH.Clearnet uses the continuous net settlement method. This means that, at the end of T+2, after Euroclear Nederland is closed for DVP settlements, LCH.Clearnet determines for each clearing member the positions they failed to deliver and the deliveries or receipts that result from exercises, assignments or settlements of derivatives. Next, LCH.Clearnet corrects the netted positions calculated on T for the fails and the settlements caused by derivatives. Subsequently, they send the settlement instructions, both for receipt and delivery, to the ESES platform for settlement on the contractual settlement date (S or T+3). In 2010, LCH.Clearnet sent 1,678,000 netted settlements to Euroclear Nederland for a total value of EUR 239 billion.

Off-exchange settlement

In addition to the settlement of on-exchange transactions and free-of-payment transfers, ESES offers a facility for DVP settlement of off-exchange transactions (OTC transactions). Each transaction is settled individually and with immediate finality. The settlement is a true DVP settlement, which means that securities and fund transfers are made simultaneously in real time between the participant’s ESES securities accounts and the ESES cash accounts. ESES is available for DVP settlements between 21:00 on the day before the contractual settlement date (S–1) and 16:00 on the contractual settlement date (S). In 2010, Euroclear

⁹ The CSD of Reference is the Euroclear CSD that is entitled to admit a security based on the allocation rules set out in the ESES terms and conditions. Only one Euroclear CSD can be the CSD of Reference for a specific security.

Nederland processed more than 3.3 million OTC transactions with a total value of EUR 4,990 billion.

Explanation of settlement process

In January 2009, Euroclear SA/NV introduced the ESES platform into the Dutch, Belgian and French markets. As of then, Euroclear SA/NV has provided access to these three European markets via the single consolidated ESES platform, which is an integrated settlement platform. All transactions in securities for which the ESES CSDs act as CSD of Reference are settled in real time in central bank money on the ESES platform and, in the event of a settlement versus payment, a true delivery or receipt versus payment (DVP/RVP) is achieved. The introduction of ESES meant that, from an operational point of view, cross-border transactions between the three markets ceased to exist.

With the launch of ESES in January 2009, the central banks of Belgium, France and the Netherlands have outsourced the processing of the cash leg of transactions versus payment to ESES; hence the cash settlement is still executed in central bank money. Both the securities and the cash legs of the securities settlement are processed on the ESES platform. A standing order for a liquidity transfer from the TARGET2 cash account to the ESES cash account is executed at 19:30 to fund the settlements. In addition, participants have the option of transferring additional liquidity to the ESES platform between 07:00 and 16:00. As overnight balances are not permitted in ESES, there is a mandatory sweep to TARGET2 at 16:45. ESES also offers an optional sweep at 07:05, but this is not often used.

Since March 2011, Euroclear SA/NV has concentrated all its settlement activities within a single operational facility, which is located near Paris. From a legal point of view, Euroclear Nederland now outsources the processing of its settlement activities to Euroclear France.

Custody functions

In addition to its role as operator of the securities settlement system, Euroclear Nederland is also the CSD of the Netherlands. The depository is responsible for book-entry transactions and the custody, management and administration of all kinds of securities for its admitted institutions. When banks deposit securities held by their customers with the depository, book-entry positions are created that make it possible to settle securities transactions by book-entry transfer. Since the new Securities Giro and Transfer Act came into force in January 2011, asset protection has applied to securities held by either an admitted institution or an entity that is permitted under Dutch law to offer securities accounts to clients. In the Securities Giro and Transfer Act, such an entity is termed an “intermediary”. This means that investors in those securities are joint owners of the securities in the system and their ownership rights will be unaffected if their bank or the depository goes into receivership. Consequently, there is no counterparty risk in this settlement system.

The introduction of the new Securities Giro and Transfer Act marked the first step towards the dematerialisation of all securities by the end of 2013. To this end, Euroclear Nederland no longer accepts physical securities, other than global notes, for deposit in its vaults within the Netherlands. Further, Dutch issuers of new securities can only issue dematerialised securities registered in the name of Euroclear Nederland or in the form of a global note to be deposited with Euroclear Nederland. All Dutch securities currently held in paper form with Euroclear Nederland must either be converted into global notes or dematerialised before 1 January 2013. As of that date, it will no longer be possible to transfer physical securities, other than global notes, within Euroclear Nederland.

At end-December 2010, Euroclear Nederland was the “CSD of Reference” of almost 14,800 securities. Securities and bonds in custody accounted for a total value of EUR 925 billion.

Links with other SSS

Pursuant to Section 35b of the Securities Giro and Transfer Act, Euroclear Nederland maintains an approved link to the Belgian (I)CSD, Euroclear Bank. Other links are available via Euroclear Belgium and Euroclear France.

4.4 DNB's involvement

DNB is involved in post-trade processing, clearing and settlement as liquidity provider, settlement bank and facilitator of the guarantee model.

Liquidity provider

As the Netherlands are part of the euro area, DNB is bound by the T2 Guidelines issued by the ECB if DNB opts to act as liquidity provider. Consequently, DNB needs the approval of the ECB's Governing Council to grant intraday liquidity to non-banking institutions in the financial infrastructure.

Settlement bank

Since January 2009, DNB has outsourced the settlement bank function for the cash equity and derivatives markets of NYSE Euronext, although settlements are still executed in central bank money. However, DNB continues to perform monitoring activities for participants under its regulatory responsibility.

Facilitator of the guarantee model

In January 2002, the so-called "DNB offer" or "guarantee model" was introduced. Under this model, developed by DNB in collaboration with the Dutch market participants involved, Dutch clearing participants can meet their collateral requirements, both for margin and clearing funds, by a guarantee based on collateral deposited with DNB. This method enhances the security and efficiency of the participants' liquidity and collateral management. At present, only the Dutch clearing participants of LCH.Clearnet make use of this model.