

# TARGET2 & Eurosystem Collateral Framework – Part I



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Macedonian Financial Sector Conference on  
Payments and Securities Settlement Systems

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# Topics

- TARGET2 (Part I)
- Collateral framework (Part II)



# Outline TARGET2 part

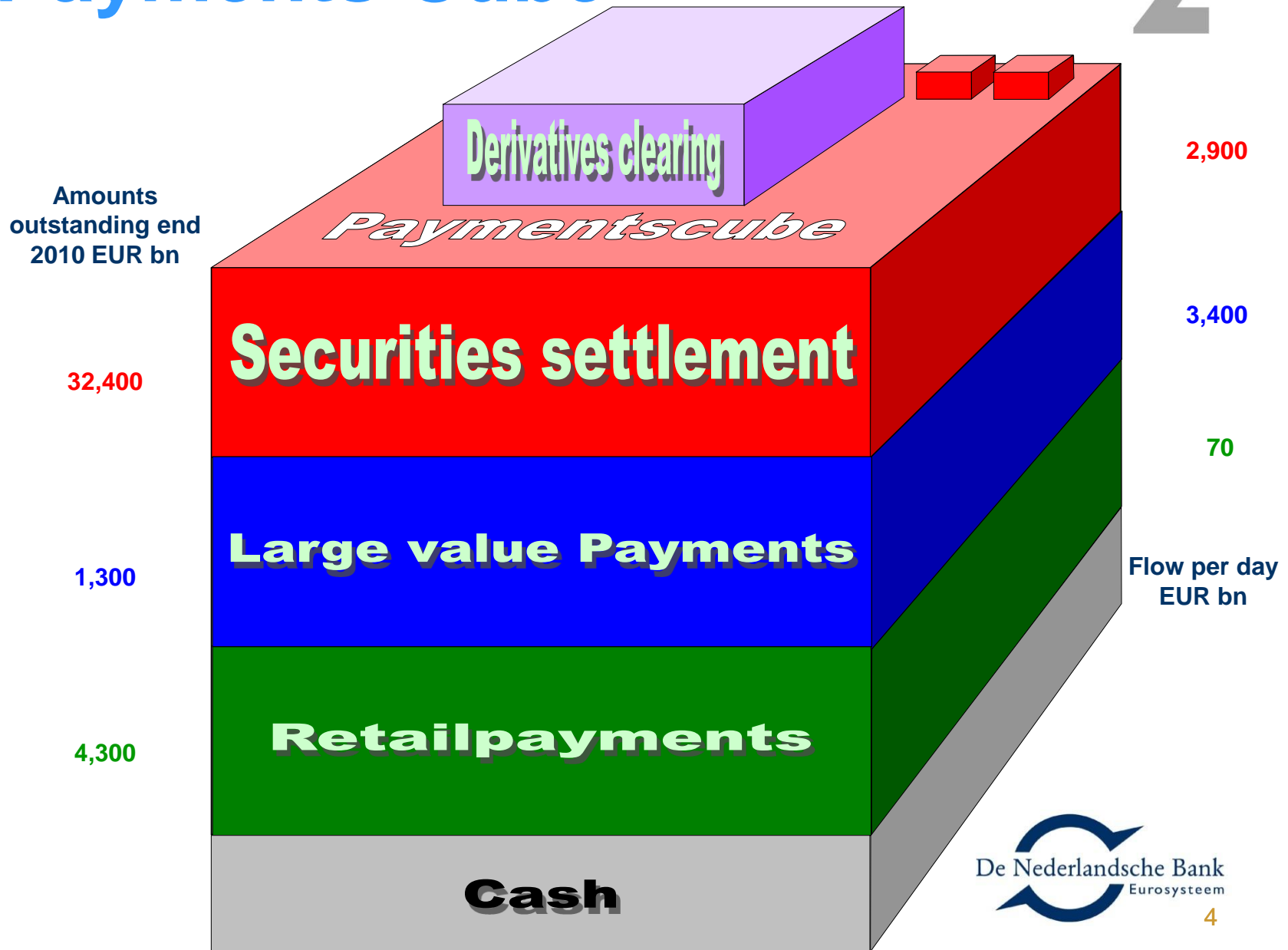


## •TARGET2

- Role within the Payments Infrastructure
- Basic principles TARGET2:
  - Access criteria
  - Use of the system
  - Modules of TARGET2
  - TARGET2 business day
  - Pricing
- Link to monetary policy, collateral, cash and clearing and settlement organisations.
- Monitoring wholesale payment systems

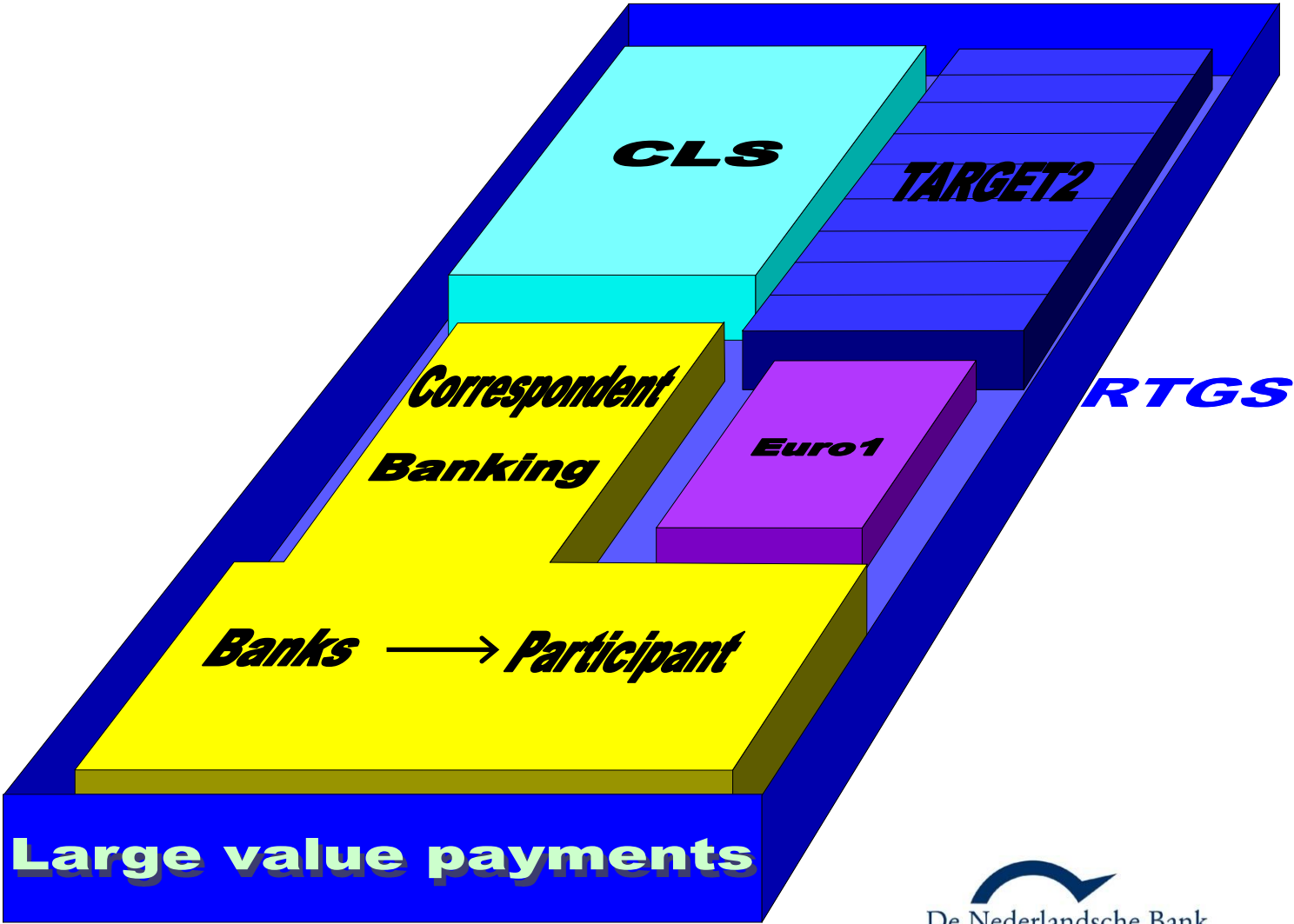
# Payments Cube

target 2



# Large value payments layer

target 2



# TARGET



- Trans European
- Automated
- Real-Time
- Gross Settlement
- Express
- Transfer system.

# TARGET2: What is it?

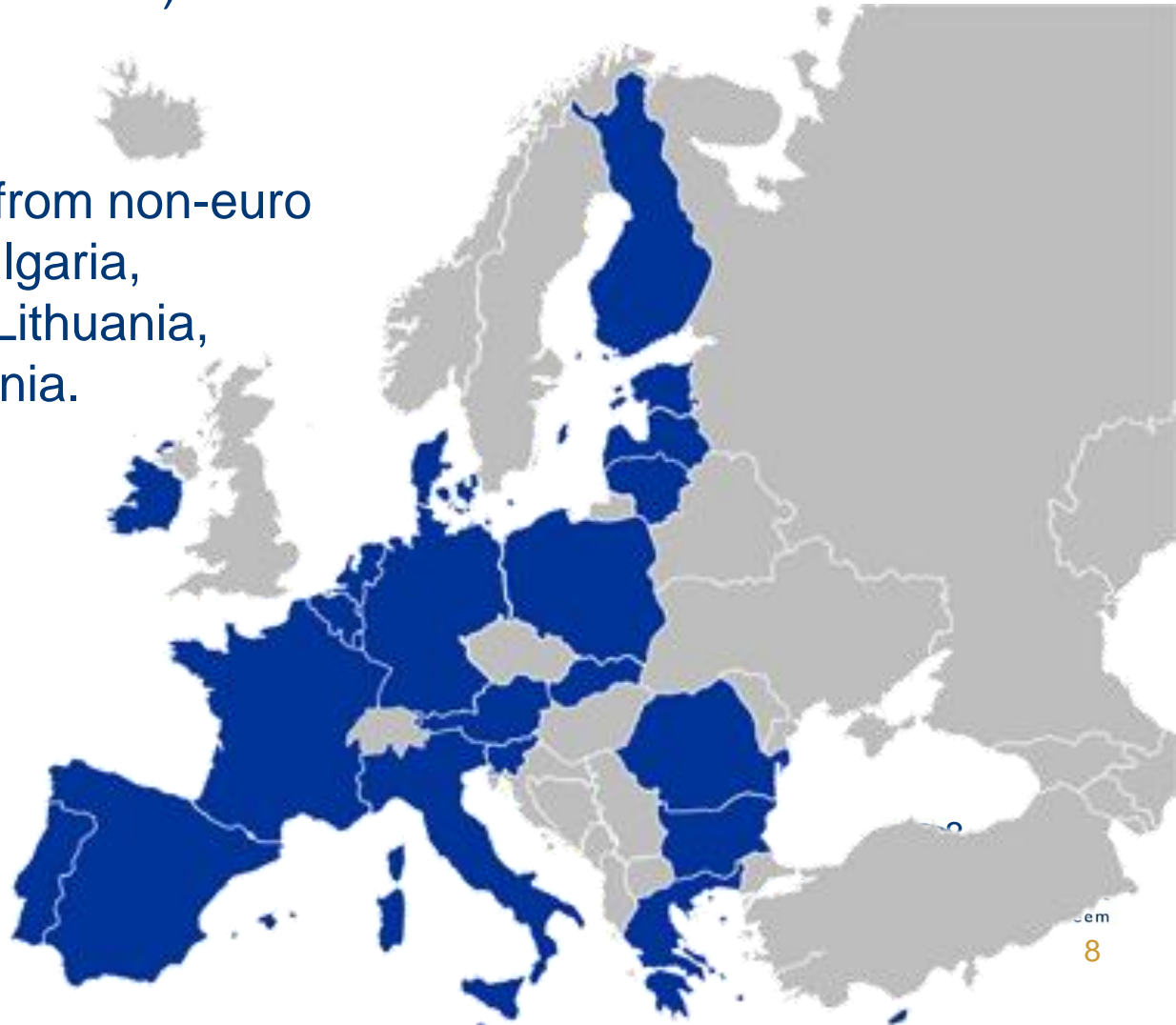


- Real Time Gross Settlement (RTGS) system owned and operated by the euro system. Built by 3 NCBs (Bundesbank, Banque de France, Banca d'Italia)
- Used for large value euro payments.
- Technically centralised (1 system): uniform functionality, uniform pricing, high availability
- Legally decentralised (maximally harmonised), business relation with 'own' Central Bank

# TARGET2: Participating countries



- The 18 euro area central banks (including the ECB)
- Six central banks from non-euro area countries: Bulgaria, Denmark, Latvia, Lithuania, Poland and Romania.





# TARGET2: access criteria 1/2



- Credit institutions established in the EEA, including when they act through a branch established in the EEA.
- Credit institutions established outside the EEA, provided that they act through a branch established in the EEA.
- NCBs of EU Member States and the ECB.
- Treasury departments of central or regional governments of Member States active in the money markets:
  - e.g. treasury of Dutch Ministry of Finance and its agency
- Organisations providing clearing or settlement services that are established in the EEA and are subject to oversight by a competent authority:
  - e.g. Equens and ESES
- investment firms established in the EEA:
  - N.A. for The Netherlands



**Rabobank**

**Bank of America**



Bank of Opportunity™



**Banco  
Santander**



**EQUENS**



# TARGET2: access criteria 2/2



- investment firms established in the EEA
- public sector bodies of Member States authorised to hold accounts for customers

# TARGET2: NO access



# PHILIPS



# TARGET2: participants



- TARGET2:
- Direct participants : 1072
  - Banks: 972
  - Central banks: 26
  - Clearing and settlement organisations: 40
  - Other direct: 34
- Indirect participants: 3465
- TARGET2-NL:
- Direct participants: 77
  - Banks: 71 (including a few British banks)
  - Central bank: 1
  - Treasury and agency: 2
  - Clearing and settlement organisations: 3
- Indirect participants: 44

# CB Customers



- Central banks outside the euro area holding an account at DNB.

# TARGET2: what is it used for?



- Executing monetary policy:
  - Tenders (lending to banks, secured by collateral)
  - Reserve requirement
  - Overnight deposit and marginal lending
- Settlement of other systems (e.g. CLS, EURO1, Equens)
- Payment from and to ESES.
- Payment of Banknotes
- (Large Value) Payments in euro.

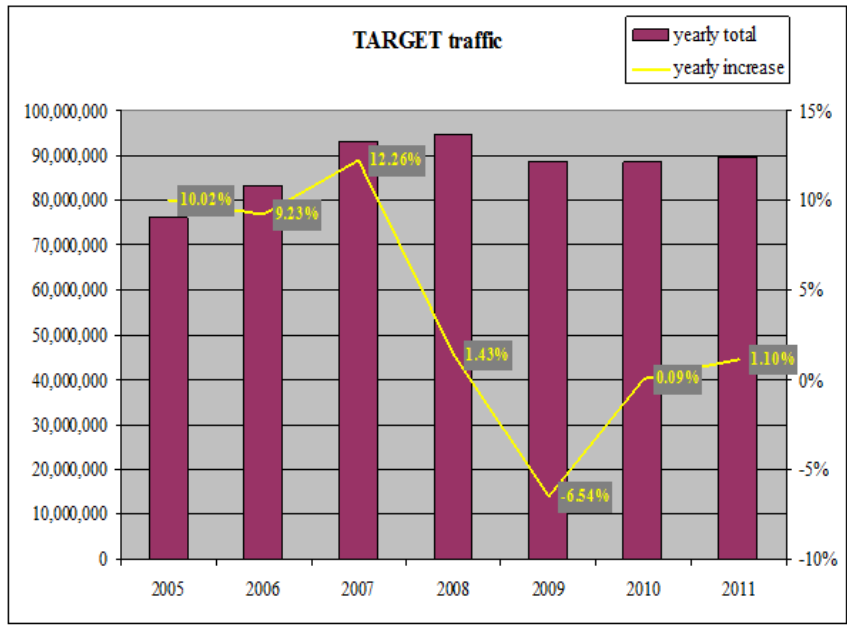
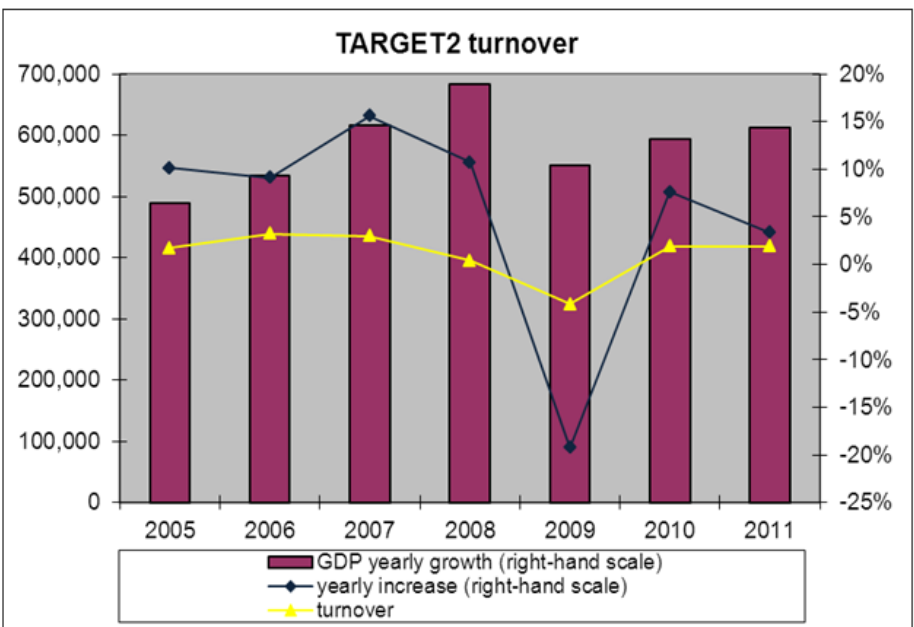


# TARGET2: some numbers



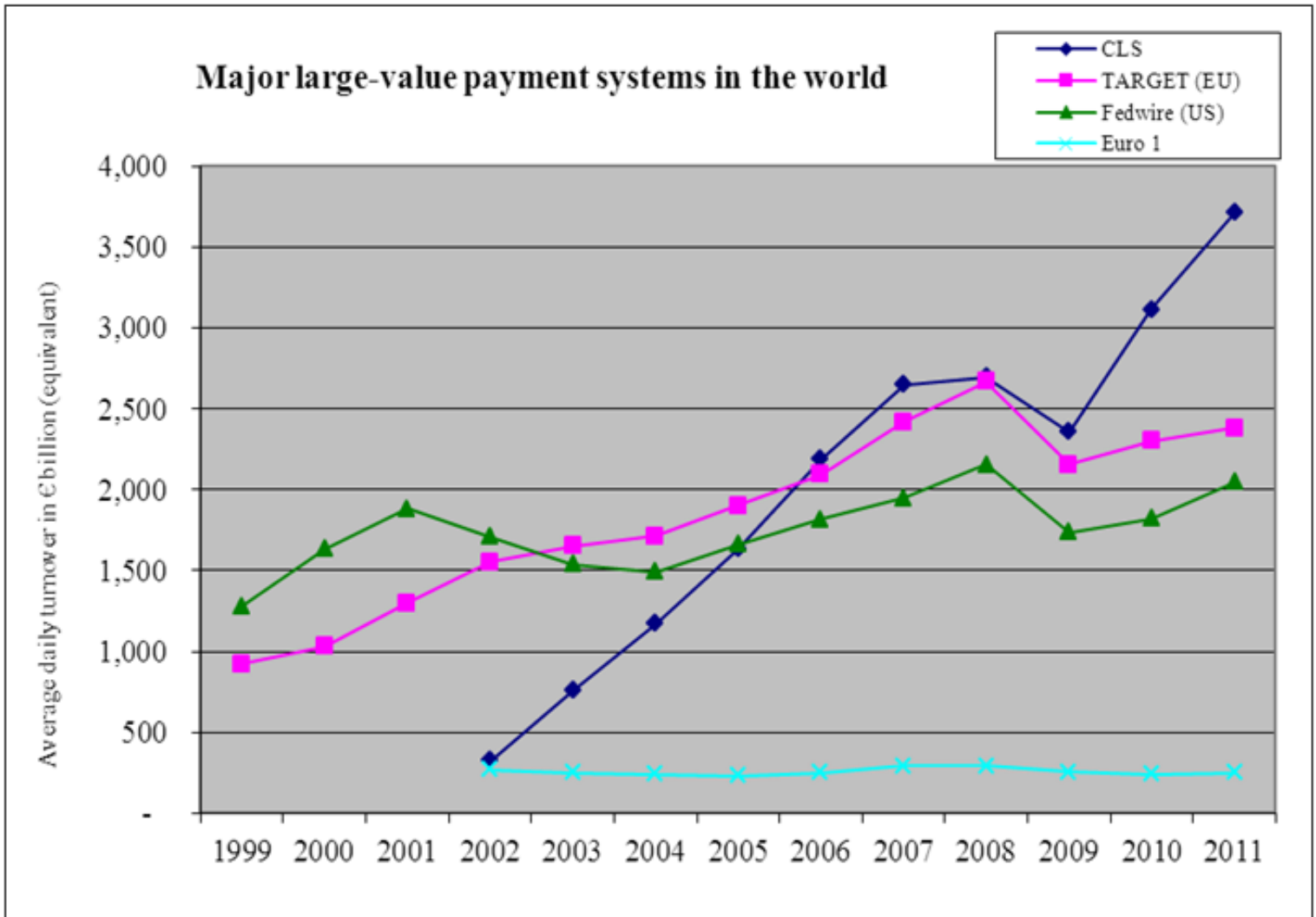
- TARGET2-NL transaction data:
  - ~ 35,000 payments (daily)
  - ~ EUR 250 billion (daily)
  - ~ 10% of TARGET2 (volume and value)
- TARGET2 eurozone:
  - ~348,505 payments (daily)
  - ~EUR 2,385 billion (daily)
  - average value: EUR 6,8 million
  - 99,85% payments processed < 5 minutes

# TARGET2 turnover and traffic

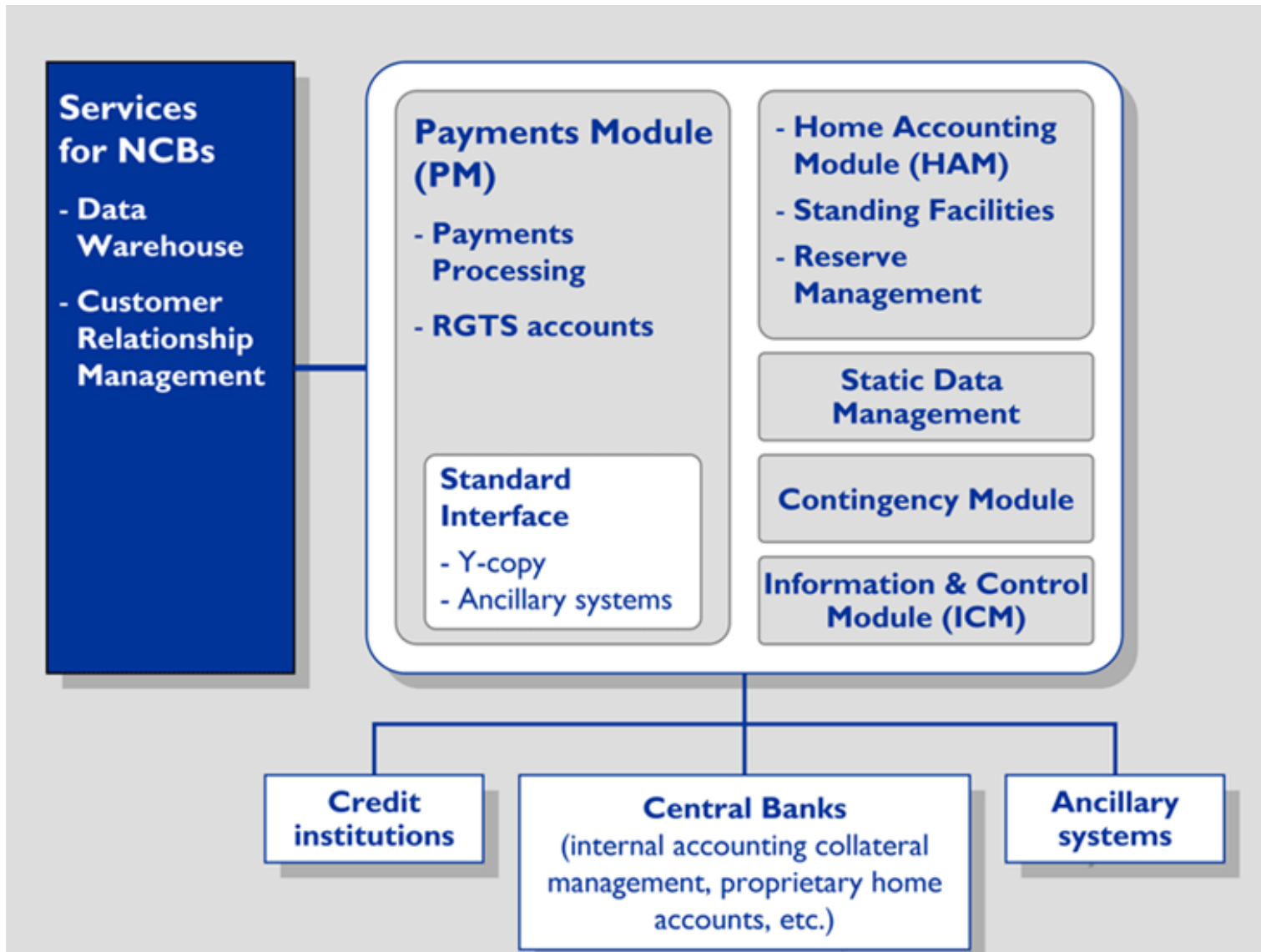




# Major large value payment systems in the world



# TARGET2 modules



# TARGET2: modules

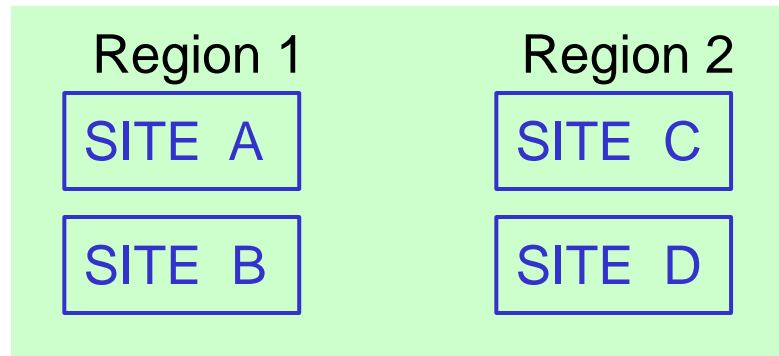


- Payment Module (PM)
  - Core of platform: Processing of individual payments
- Home Accounting Module (HAM)
  - Account module e.g. to hold reserves
- Standing Facilities Module (SF)
  - Overnight deposit and Marginal lending
- Reserve Management Module (RM)
  - Information on fulfillment of reserves
- Proprietary Home Accounting System (PHA)
  - Not relevant for NL
  - Germany still has its own system (domestic)
- CRSS: Datawarehouse containing information on transactions

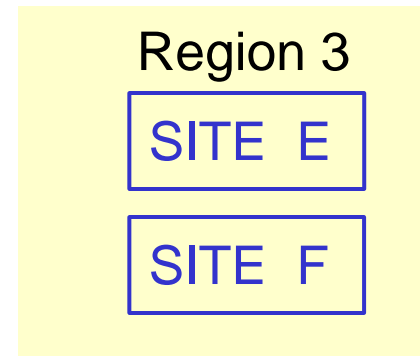
# Single Shared Platform

Centralized solution: single platform, no interlinking

- central payments processing: DE, IT  
(workload distribution between regions)
- central datawarehouse and customer services: FR

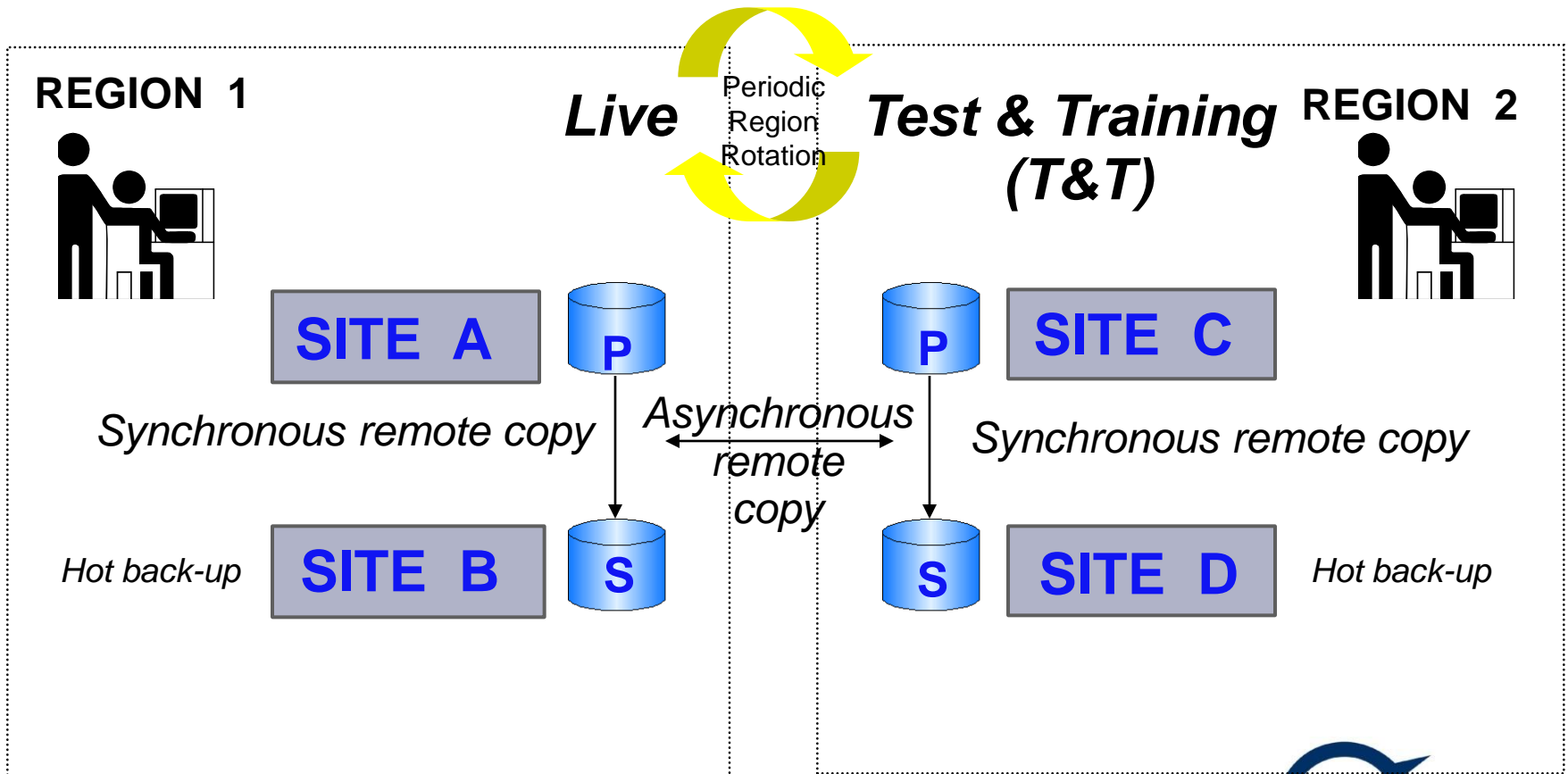


payments and accounting  
services

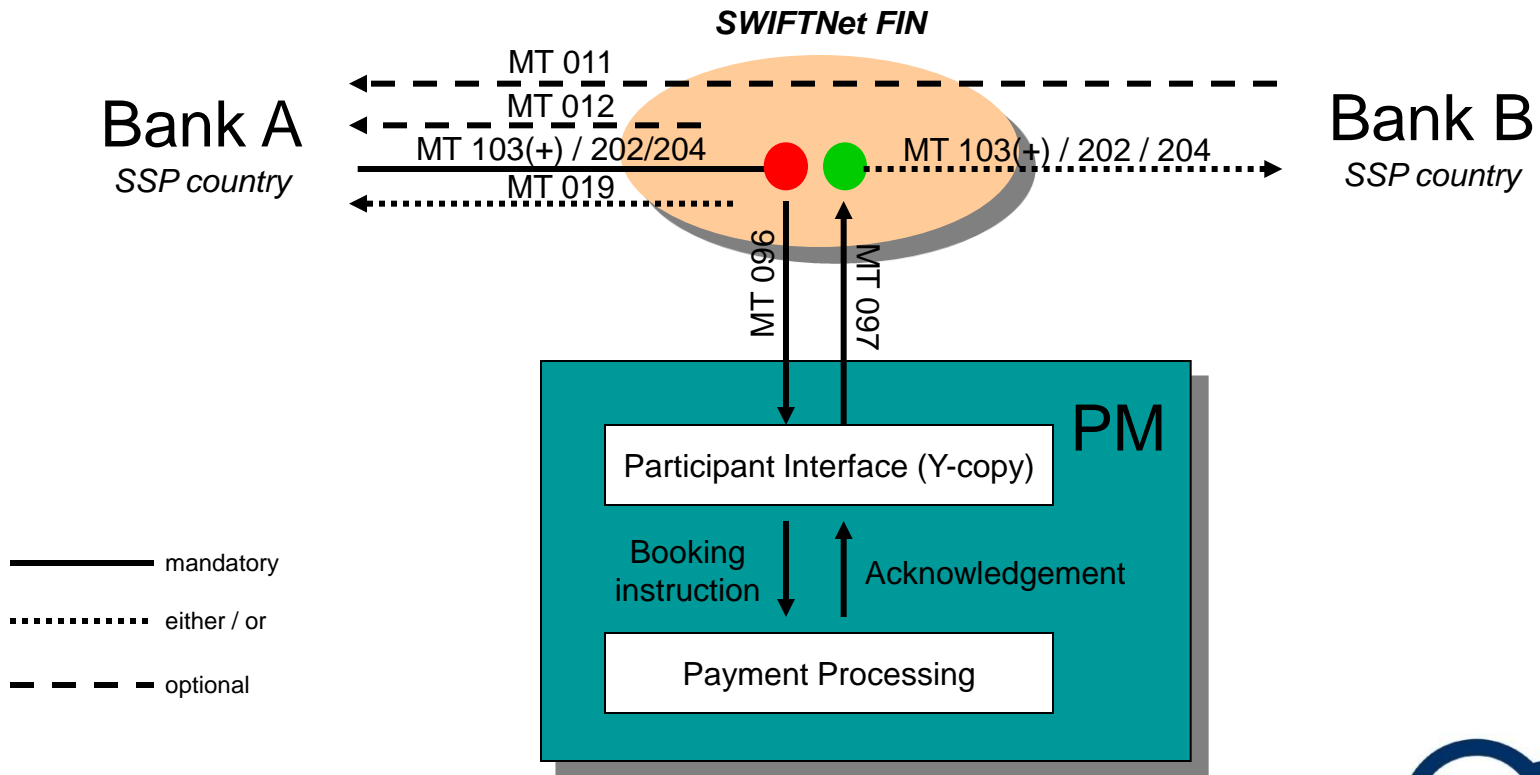


customer related  
services

# Single Shared Platform



# Payment interface - FIN Copy



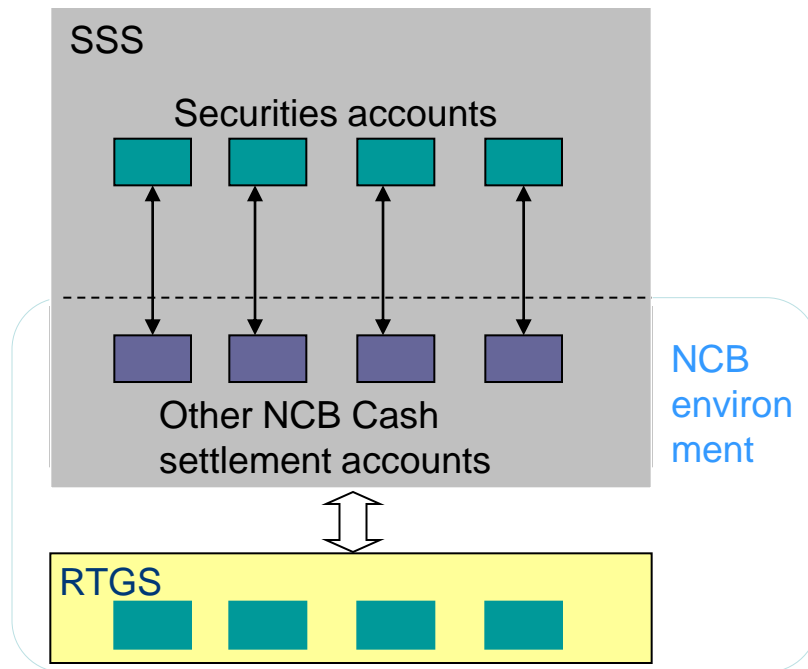
# TARGET2: types of operations and businesses



- All RTGS operations may be processed in TARGET2
  - individual operations settled in real-time and in central bank money
  - no exclusion according to amount or type of operations
  - Wholesale payments are a main goal for TARGET2
- All types of operations
  - credit transfers
  - direct debits (limited usage)
  - mandated payments
- All types of business
  - payments between market participants
  - central bank operations
  - settlement operations of ancillary systems

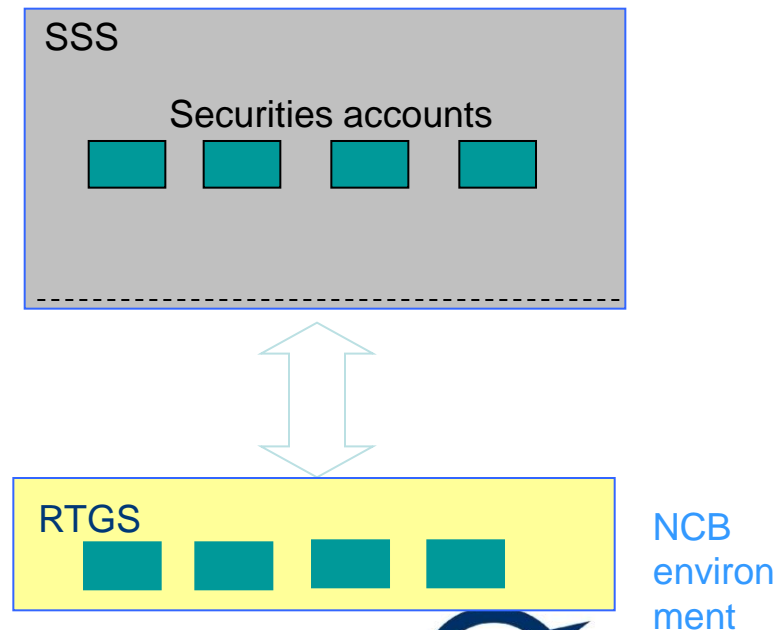
# Ancillary systems settlement: securities

For integrated model: liquidity transfer



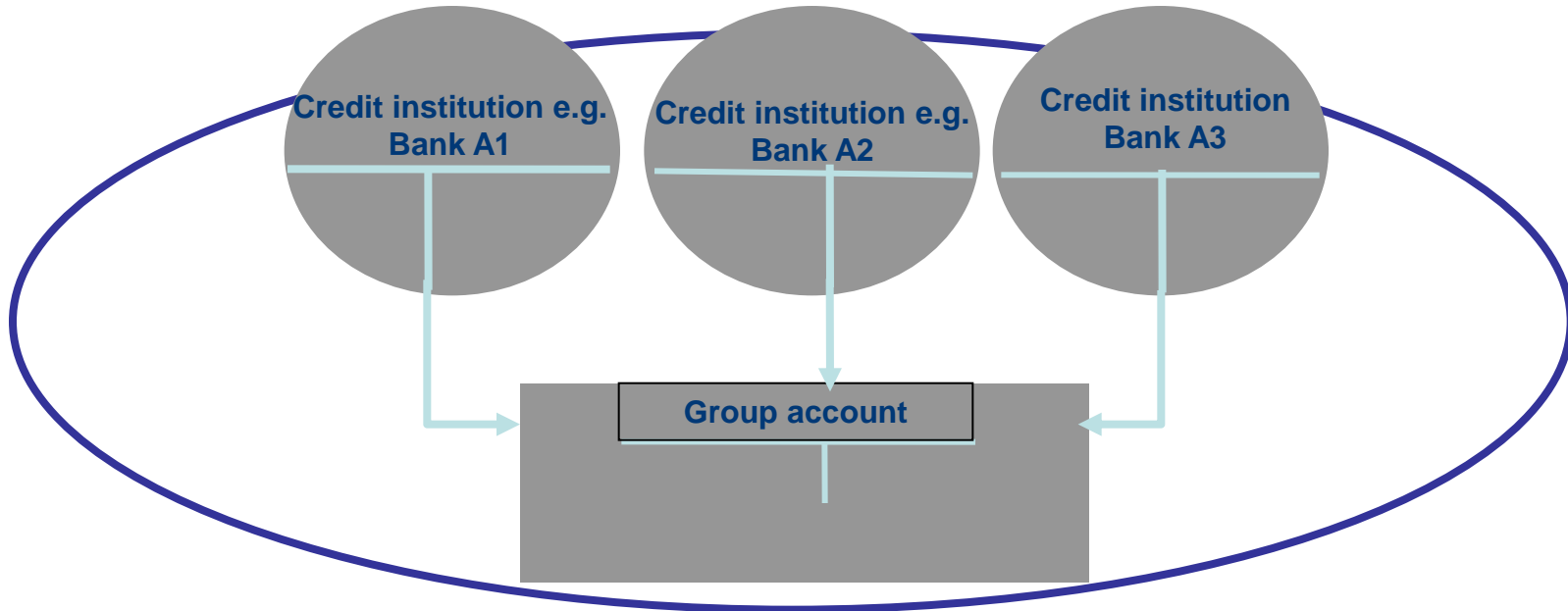
Settlement in central bank money

For interfaced model: real-time settlement



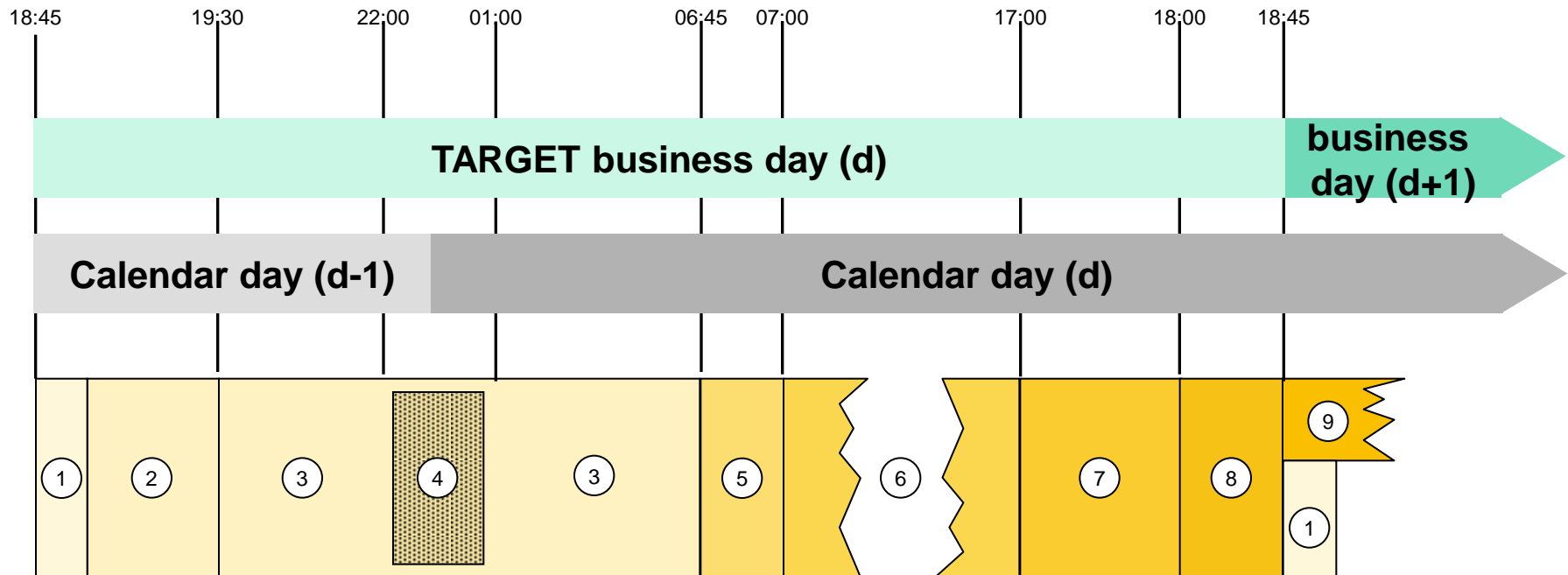


# Liquidity pooling - Virtual account



- Virtual balance: balance on (single) accounts + credit lines
- Possibility to „use“ this position by each group account holder
- Booking on the single accounts (not on the virtual account)
- Only intra-day: „levelling“ off at the end of day mandatory

# TARGET2 business day



# TARGET2 business day

	Time	Description
<b>Day time</b>	06:45 a.m. – 07:00 a.m.	Business window to prepare daylight operations
	07:00 a.m. – 06:00 p.m.	Day trade phase
	05:00 p.m.	Cut-off for customer payments
	06:00 p.m.	Cut-off for bank-to-bank payments
<b>End of Day</b>	06:00 p.m. + 15 min.	General cut-off for the use of standing facilities
	06:00 p.m. + 30 min.	Cut-off for the use of standing facilities on the last day of the minimum reserve period
	(shortly after) 06:30 p.m.*	Data to update the accounting system will be available for central banks
<b>Start of day &amp; night time window for ancillary systems</b>	06:45 p.m. – 07:00 p.m.*	Start-of-day processing
	07:00 p.m. – 07:30 p.m.*	Provisioning of liquidity until start-of-cycle message of ancillary systems
	07:30 p.m.* – 10:00 p.m.	Start-of-procedure message to set aside liquidity and ancillary system night-time processing ( <i>ancillary system settlement procedure 6</i> )
	10:00 p.m. – 01:00 a.m.	Technical maintenance period of three hours. The system is shut down
	01:00 a.m. – 07:00 a.m.	Night-time processing ( <i>ancillary system settlement procedure 6</i> )

\*15 minutes later on the last day of the minimum reserve period

# TARGET2 pricing



- Banks can choose between:
  - EUR 100, -/month and EUR 0.80/ transaction
  - EUR 1250,-/month and per transaction...

Banks	from	to	price
1	1	10,000	EUR 0.60
2	10,001	25,000	EUR 0.50
3	25,001	50,000	EUR 0.40
4	50,001	100,000	EUR 0.20
5	Above 100,000	-	EUR 0.125

# TARGET2: Benefits

- Payments settled:
  - Quickly
  - with finality
- 1 technical system within the ESCB with the same functionality.
- Only minor legal deviations
- 1 pricing scheme.
- No competition between central banks.



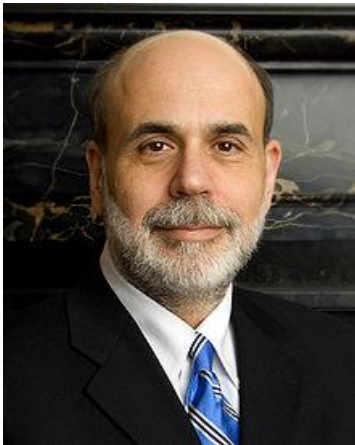
# TARGET2: Quiz (1/2)

TRUE or FALSE:

1. TARGET2 is the largest Real-Time Net Settlement system of the euro area for euro payments.
2. Technically there are minor differences between TARGET2 components, but legally there are no differences.
3. TARGET2 settles all values from EUR 0.01 to EUR 1,000,000 billion.

# TARGET2: Quiz (2/2)

- Who has access to TARGET2?



# Monitoring: how to identify liquidity shortages

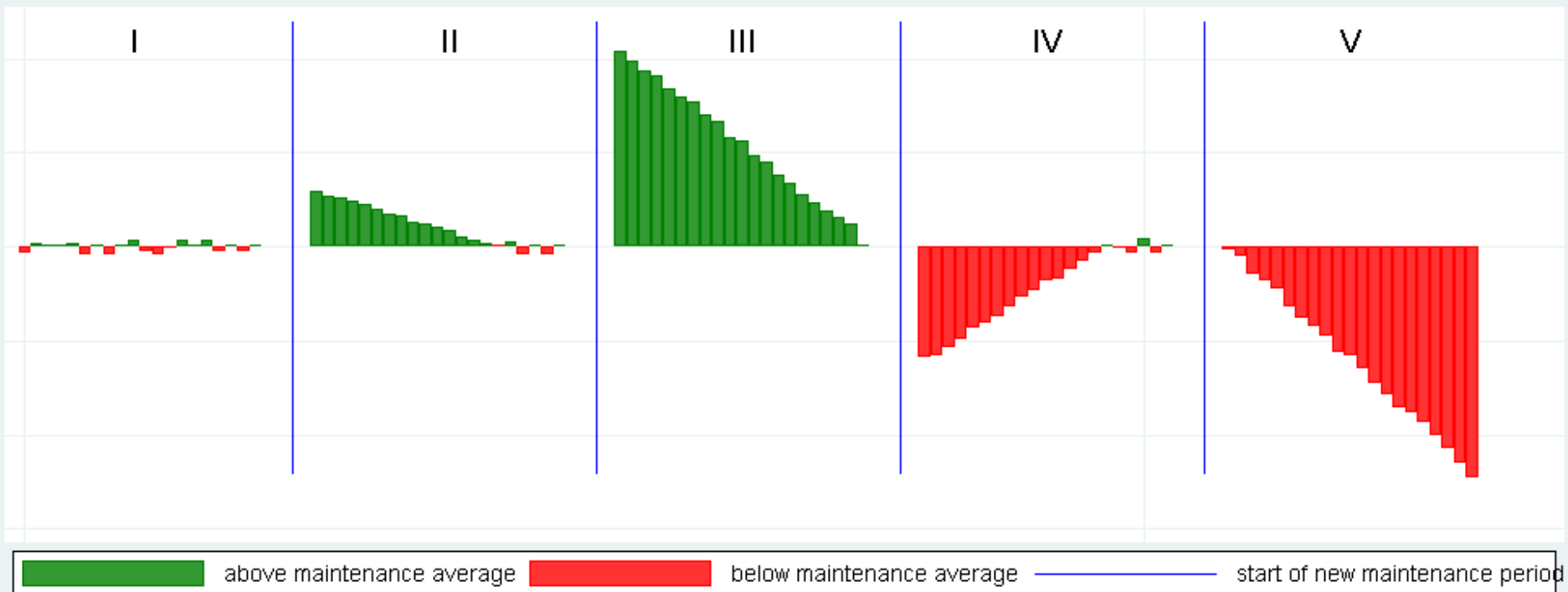
- DNB Working Papers 316, 276:
  - Is this bank ill? The diagnosis of doctor TARGET2.
  - Monitoring the unsecured interbank money market using TARGET2 data

## Elements:

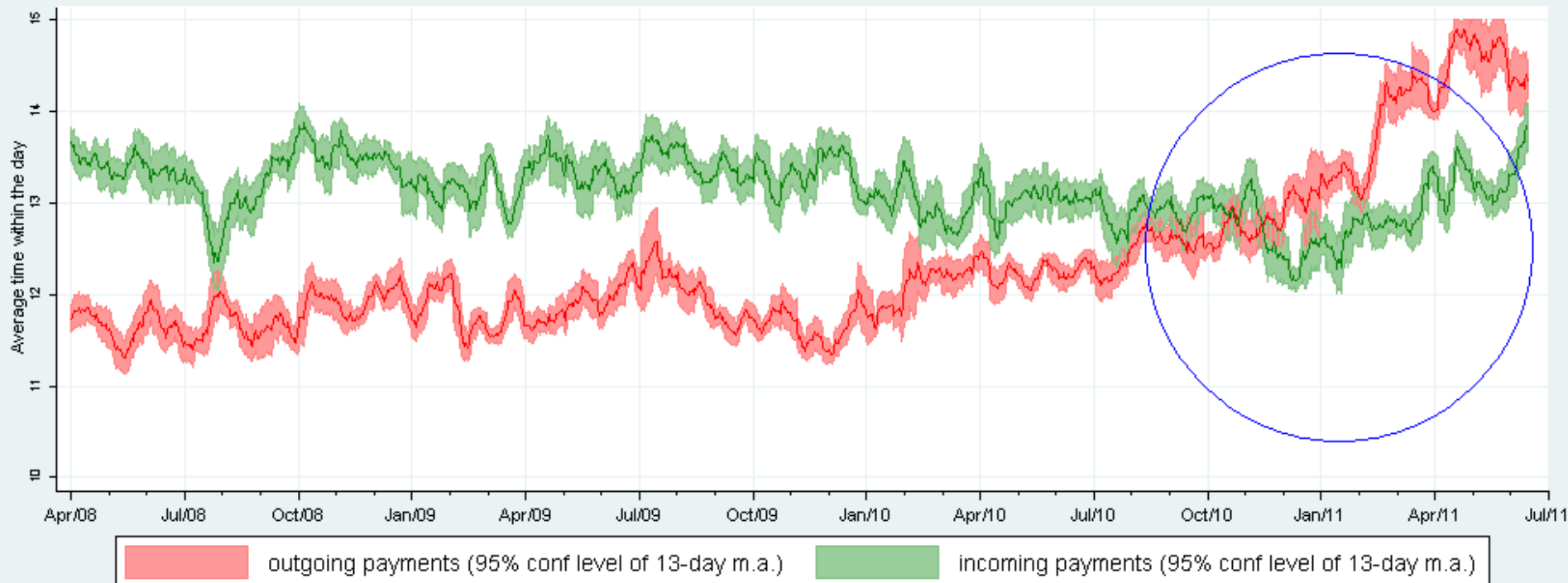
- Minimum reserve requirements (monetary policy)
- Timing of payments (incoming and outgoing)
- Interbank money market: rates and volumes
- Bank run
- Central bank facilities (monetary loans, intraday credit, SF)
- Collateral amount and use



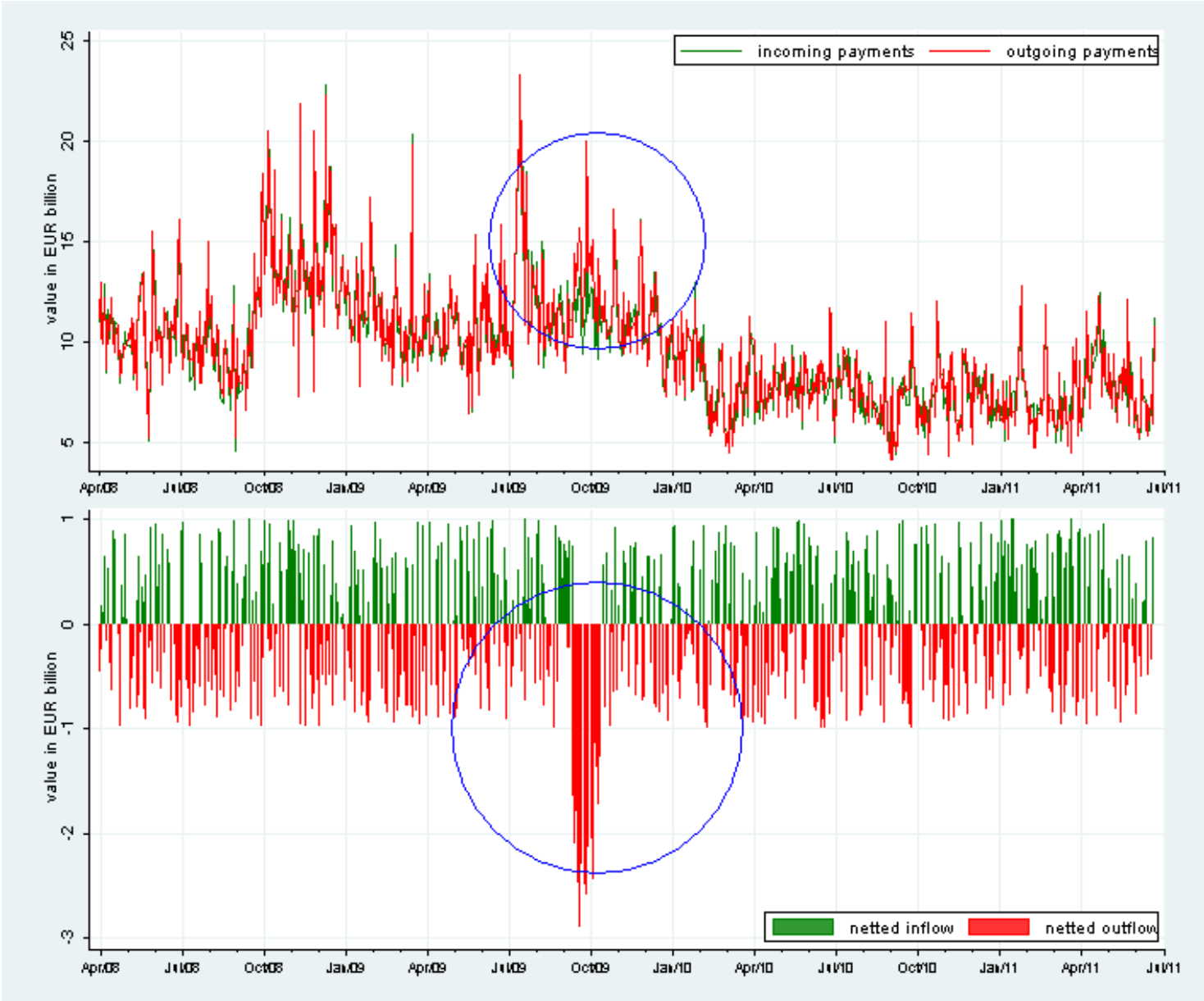
# Minimum reserve requirements



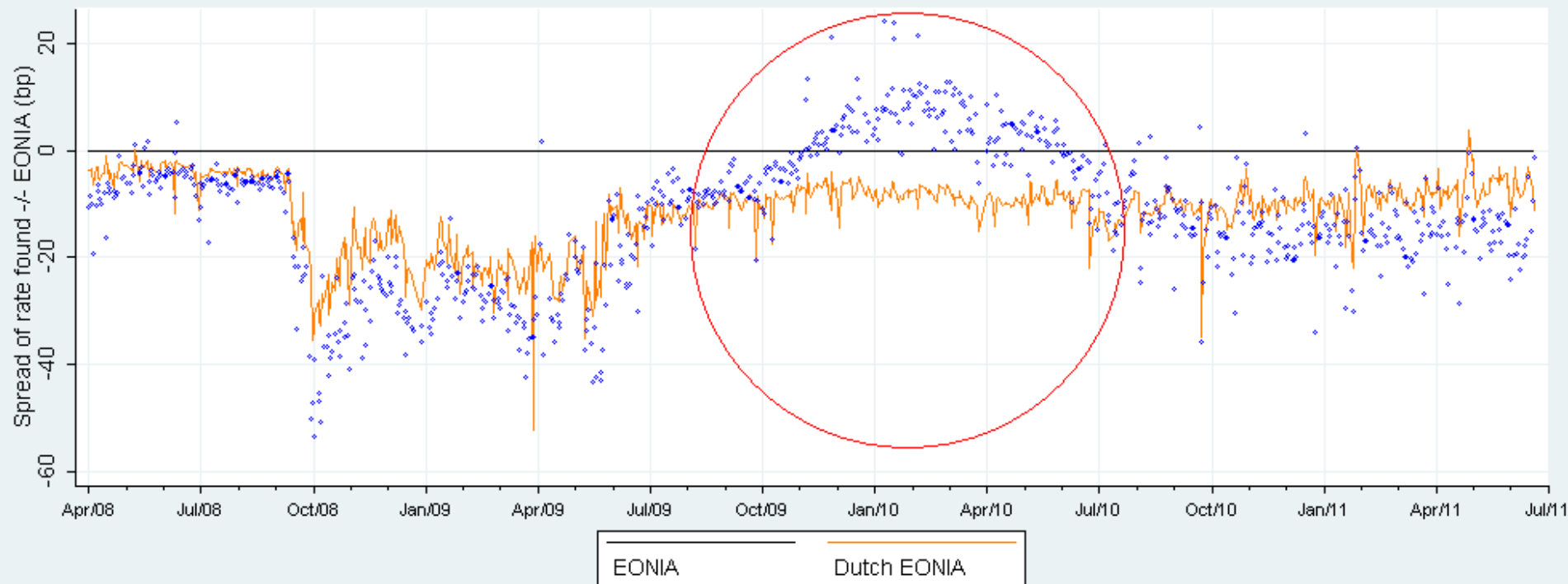
# Timing of payments



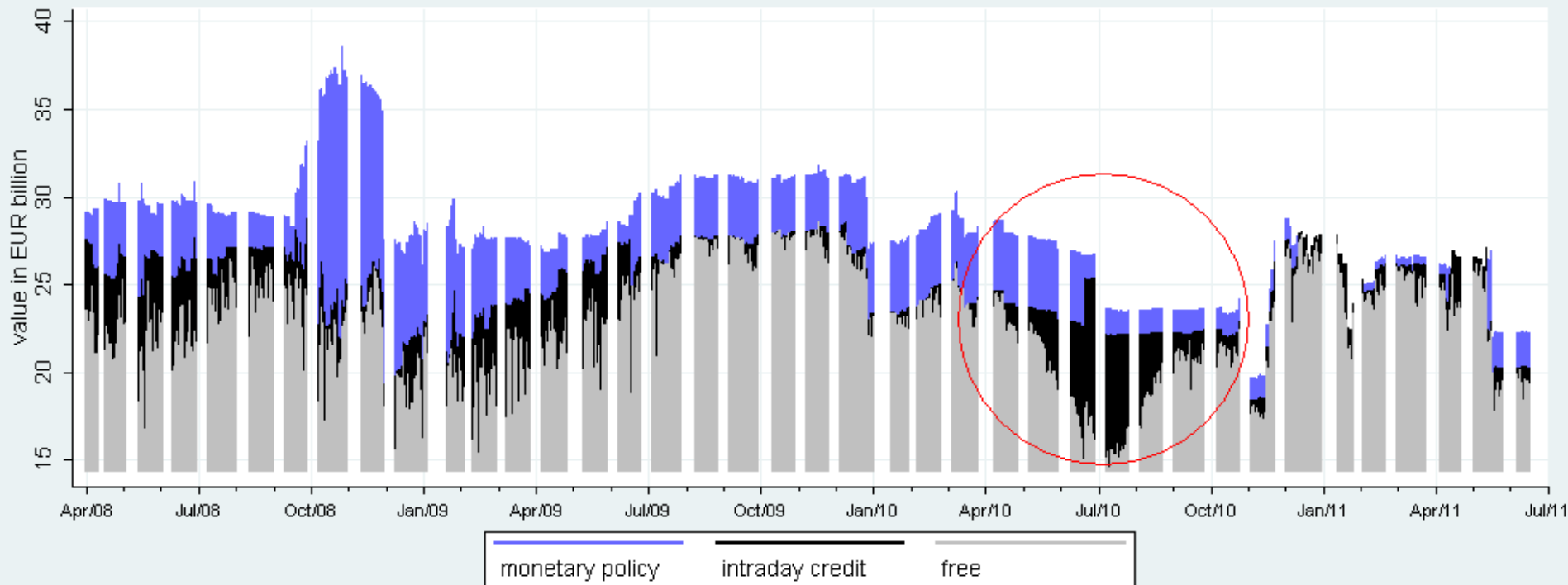
# Bank run



# Interbank money markets interest rates



# Timing of payments



# Summary

- Commercial banks directly benefit of a technically centralized platform (legally it is a decentralized system)
- One pool of liquidity, one window for info on all TARGET payments

# TARGET2 & Eurosystem Collateral Framework – part II



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# Topics part II

- Basics Eurosystem collateral framework
- Collateral trends
- Impact of turmoil
- Mobilisation of collateral





# Role of collateral

- ‘All credit operations should be collateralised’ (ESCB Statute, Article 18.1)

- Collateral should be adequate:
  1. Protection against losses
  2. Sufficient for conducting monetary operations

# Basics eurosystem collateral framework

## Rule based framework:

- uniform -> single list of collateral
- harmonised risk control framework

## Discretionary measures:

- When needed for risk protection
- Also on level individual counterparties
- Consistent, transparent and non-discriminatory

# The Eurosystem collateral framework: principles decided in 1998

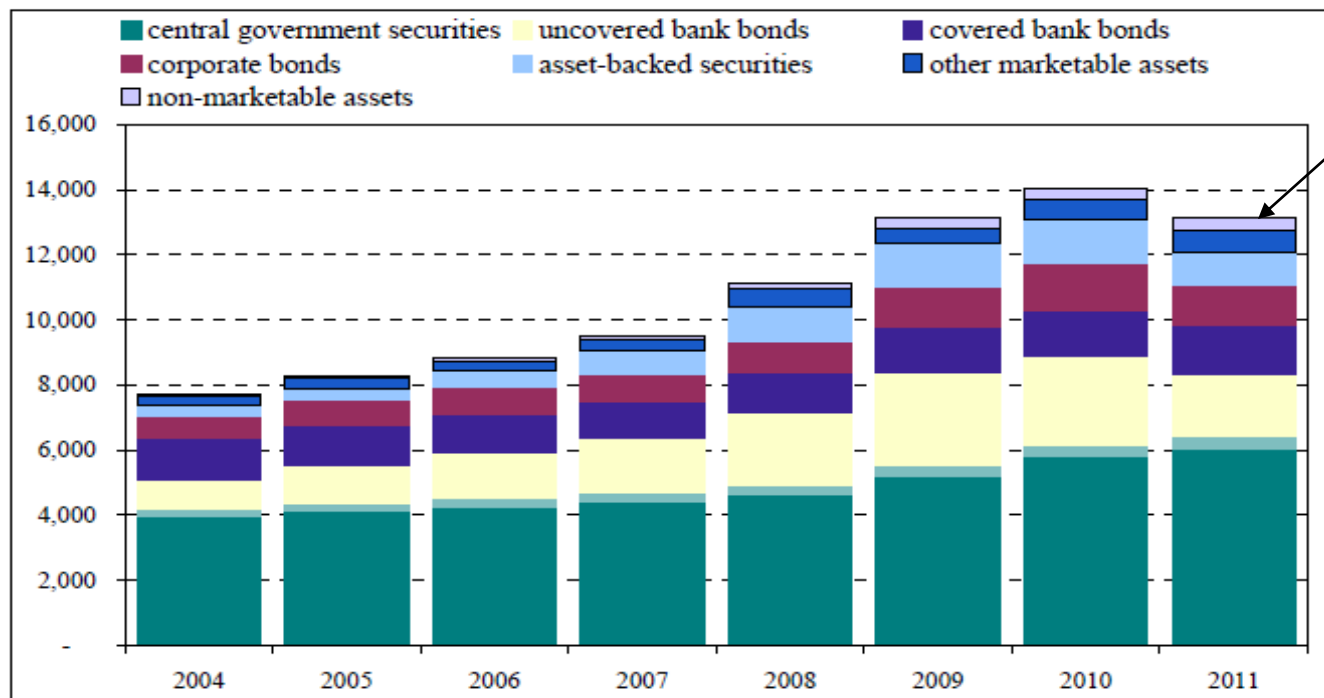
Protecting the  
Eurosystem from  
incurring losses in its  
monetary policy



# The Eurosystem collateral framework: principles decided in 1998

Volume available collateral is  
sufficient for effective monetary  
policy and smooth operation of  
payment system  
+/- EUR 13,000 billion

(EUR billions: annual average)

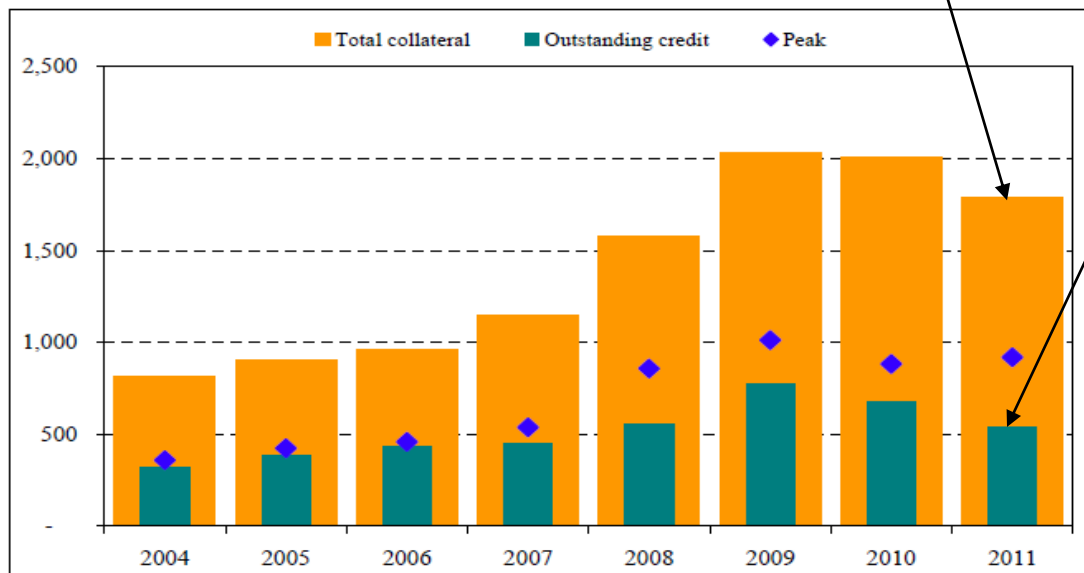


# The Eurosystem collateral framework: principles decided in 1998

**2011:**  
Volume available collateral is sufficient  
for effective monetary policy and  
smooth operation of payment system  
+/- EUR 13,000 billion

**2011: Collateral Deposited**  
(+/- EUR 1,790 billion)  
and **Collateral Used for Credit**  
Operations  
(+/- EUR 560 billion)

(EUR billions)



**In NL (in 2011):**  
+/- EUR 172 billion deposited  
+/- EUR 6.6 billion used for credit  
operations

# The Eurosystem collateral framework: principles decided in 1998

Operations accessible to  
a broad set of  
counterparties



# The Eurosystem collateral framework: principles decided in 1998

Equal treatment of  
all counterparties



# The Eurosystem collateral framework: principles decided in 1998

**Enhancing  
operational efficiency  
and transparency**

**Examples:**

- **One collateral framework -> single list since 2007**
- **Clear eligibility rules available on ECB website, through public guidelines**
- **Centrally guided reporting of collateral deposits to ECB on the basis of harmonised definitions**



# The Eurosystem collateral framework: principles decided in 1998

- In accordance with principle open market economy: **free competition** -> efficient allocation of resources
- **Equal** treatment of counterparties
- **No privileged treatment** of public sector securities

# The Eurosystem framework: Basics

- All liquidity providing credit operations of the Eurosystem based on adequate collateral (no cash)
- Collateral needed for monetary operations and intraday credit (payment purposes)
- **One collateral-list** for monetary policy purposes and payment system operations and local use, with **loss sharing among NCBs**
- **Broad collateral list** consisting of marketable and non-marketable assets (broad definitions)
- Lending to **financially sound** counterparties
- Credit provided by Home Central Bank

# Single list of collateral – since 2007

- Drawback 2-tiers list (1999-2006): heterogeneity and no transparency
- Single list consists of two asset classes:
  - Marketable assets - listed on regulated markets or certain accepted non-regulated markets
  - Non-marketable assets - credit claims and Irish non-marketable retail mortgage backed debt instruments, no market criterion
- For both asset classes → Eurosystem Credit Assessment Framework (ECAAF)

# Risk control framework

Three types of protection:

1. Financial soundness of counterparties
2. Eligibility of collateral
3. Risk control measures

# Risk control measures Eurosystem

	Marketable assets	Credit claims
High credit standards	<ul style="list-style-type: none"> <li>• Rating of BBB- or better or an annual probability of default of 40bps or less (before 2008: A- or 10 bps)</li> </ul>	
Valuation haircut	<ul style="list-style-type: none"> <li>• Liquidity category</li> <li>• Coupon type</li> <li>• Residual maturity</li> </ul>	<ul style="list-style-type: none"> <li>• Residual maturity</li> <li>• Type of interest rate payment</li> <li>• Valuation methodology (NCBs)</li> </ul>
Variation margins	Marking to market assets and requiring additional collateral if market prices move substantially	
Limits	5% limit to the use of unsecured debt instruments issued by a credit institution or by a close linked entity to that c.i.	
No close links	<ul style="list-style-type: none"> <li>• No close links between counterparty submitting collateral and issuer/guarantor of collateral</li> <li>• No 'financial' close links for Asset Backed Securities</li> </ul>	

# Examples haircuts eligible assets

		<i>Liquidity categories</i>									
<i>Credit</i>	<i>Residual</i>	Category I		Category II*		Category III*		Category IV*		Category V*	
<i>quality</i>	<i>maturity</i> <i>(years)</i>	fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon		
Steps 1 and 2 (AAA to A-)**	0-1	0,5	0,5	1,0	1,0	1,5	1,5	6,5	6,5	16	
	1-3	1,5	1,5	2,5	2,5	3,0	3,0	8,5	9,0		
	3-5	2,5	3,0	3,5	4,0	5,0	5,5	11,0	11,5		
	5-7	3,0	3,5	4,5	5,0	6,5	7,5	12,5	13,5		
	7-10	4,0	4,5	5,5	6,5	8,5	9,5	14,0	15,5		
	>10	5,5	8,5	7,5	12,0	11,0	16,5	17,0	22,5		
		<i>Liquidity categories</i>									
<i>Credit</i>	<i>Residual</i>	Category I		Category II*		Category III*		Category IV*		Category V*	
<i>quality</i>	<i>maturity</i> <i>(years)</i>	fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon		
Step 3 (BBB+ to BBB- )**	0-1	5,5	5,5	6,0	6,0	8,0	8,0	15,0	15,0	Not eligible	
	1-3	6,5	6,5	10,5	11,5	18,0	19,5	27,5	29,5		
	3-5	7,5	8,0	15,5	17,0	25,5	28,0	36,5	39,5		
	5-7	8,0	8,5	18,0	20,5	28,0	31,5	38,5	43,0		
	7-10	9,0	9,5	19,5	22,5	29,0	33,5	39,0	44,5		
	>10	10,5	13,5	20,0	29,0	29,5	38,0	39,5	46,0		

# Eurosystem Credit Assessment Framework - since 2007

ECAF principles: consistency, accuracy and comparability

Credit assessment sources:

- **ECAI** – External Credit Assessment Institutions (Moody's, Fitch, S&P, DBRS)
- **ICAS** – NCBs in-house credit assessment systems
- **IRB** – counterparties internal ratings-based systems
- **RT** – third-party providers rating tools (Lince, ICAP, Coface Portugal, Credit Reform AG)

# ECAF benchmark/threshold

2011	new benchmark → <b>BBB- or PD of 0.40%</b> - Probability of Default (PD) over a one-year horizon - definition default stems from EU Capital Requirements Directive (CRD)
2011	Exception: ABS → 2x AAA at issuance + second best rule
8/12/2011	Additional credit claims (till BB-), no loss sharing for 7 NCBs
8/12/2011	Additional ABS with lower rating (A-) but more reporting obligations
2008-2010:	temporary acceptance lower rating of BBB-
1999 – 2008:	‘Single A’ (A-Fitch and S&P, A3 Moody’s) or PD of 0.10%



# Valuation principles – daily valuation

- Marketable assets
  - Take representative price source, use market price
  - Non-availability of marketprice -> calculate **theoretical price** (based on discounted cash flows)
  - Two hubs provide theoretical prices, Banque de France for ABS, Deutsche Bundesbank for other complex debt instruments
- Non-marketable assets
  - Theoretical price or outstanding amount (-> higher haircut)
- September 2012: Central Eurosystem Pricing Hub for marketable assets – 2013 for credit claims

# Eligible assets: marketable + non-marketable

Asset types	Bond (AT01)	MTN (AT02)	T-bill/CP/CD (AT03)	Jumbo Pfandbrief-style (AT09)	Traditional Pfandbrief-style (AT10)	Other securitised assets/ABS/MBS (AT11)
Central bank (IG1)	Other marketable assets					
Central government (IG2)	Central government bonds					
Corporate and other issuers (IG3)	Corporate bonds					ABS
Credit institutions (IG4)	Unsecured bank bonds <sup>2</sup>			Covered bonds		
	Gov. guaranteed unsec. bank b.					
Regional/local government (IG5)	Regional government bonds					
Supranational (IG6)	Other marketable assets					
Agency – non credit institutions (IG7)						
Agency – credit institutions (IG8)						Covered bonds
Financial corporations (IG9)	Financial corporate bonds <sup>3</sup>					ABS

## Non-marketable assets:

- Credit claims
- Fixed term deposits
- Irish mortgage backed promissary notes

# Collateral techniques

Topics: Repo, Pledge, Pooling, Earmarking

- **Repo** = buy and sell back operation (legal transfer of title)
- **Pledge** = transfer of securities or loans (economic transfer)
- **Earmarking** = collateral marked to a specific credit operation
- **Pooling** = collateral is deposited in a pool, several uses

Examples techniques NCBs:

- Pool-pledge (NL pool-pledge country)
- Repo-earmarking (in eurozone only Ireland and Spain)

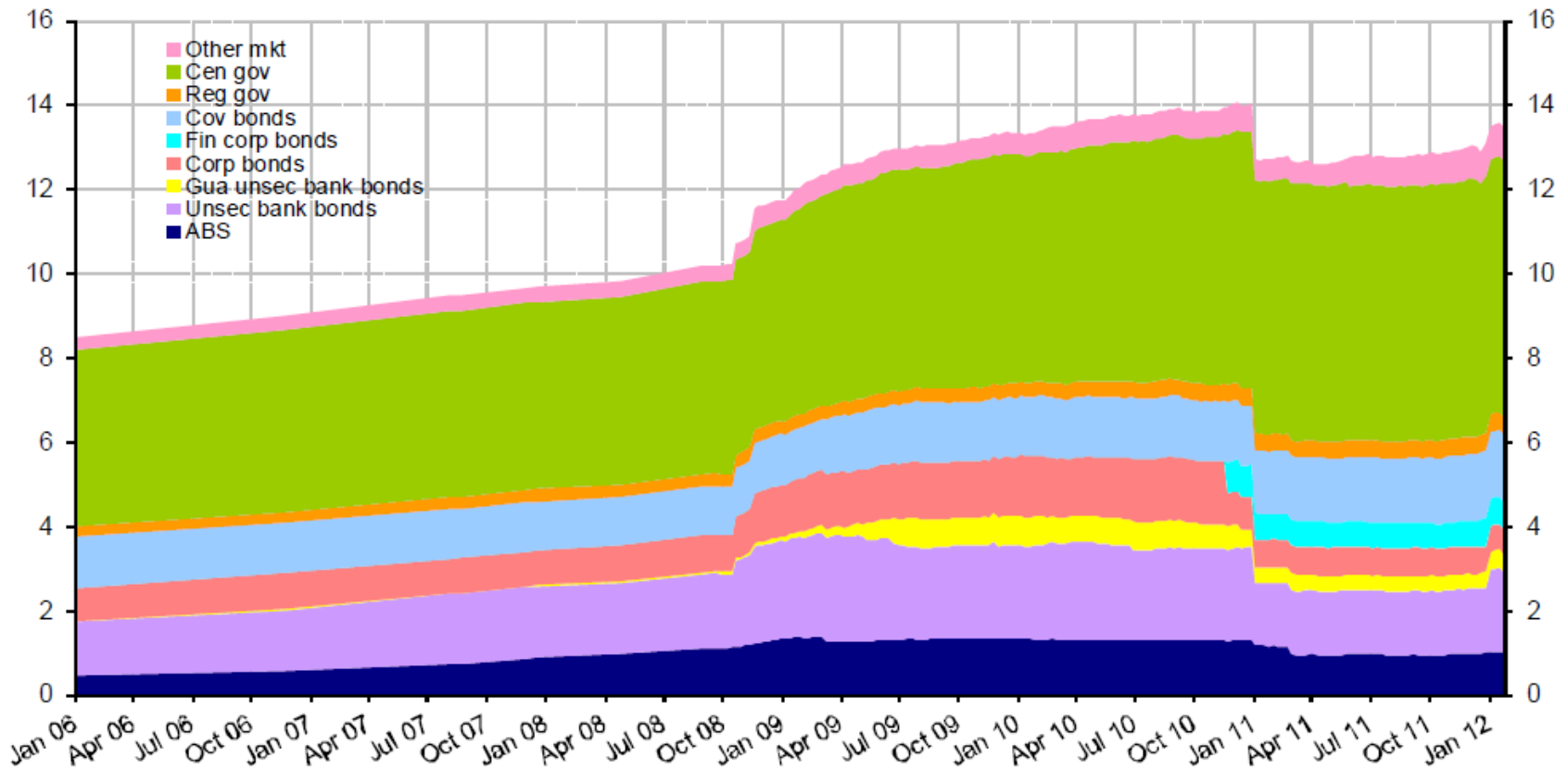


# Agenda

- Basics Eurosystem collateral framework
- European collateral trends
- Impact of turmoil on financial markets
- Mobilisation of collateral



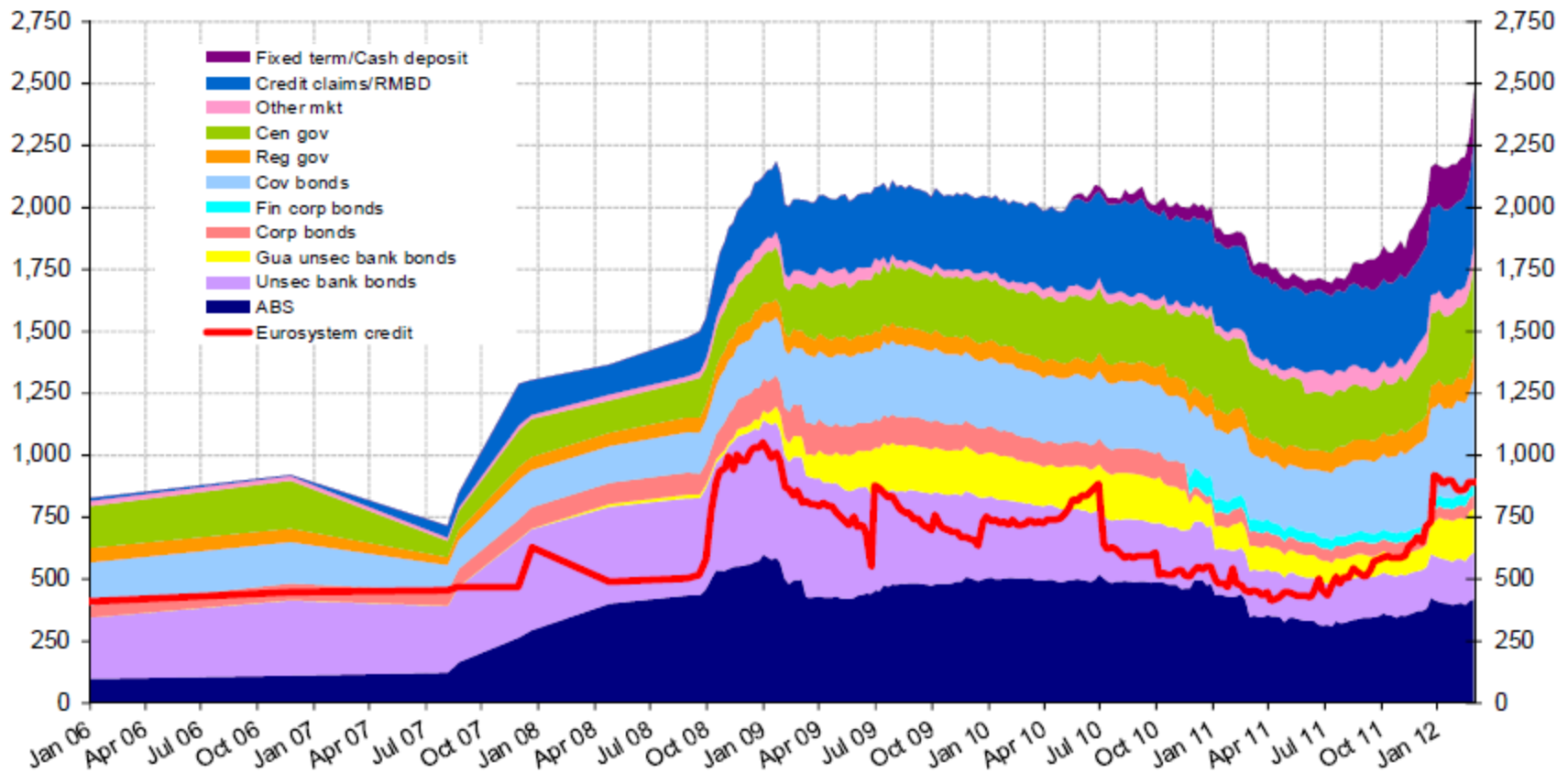
# Eligible collateral by asset type – EUR trillion, nominal value



Snapshot date 29 February 2012

# Use of collateral for credit operations

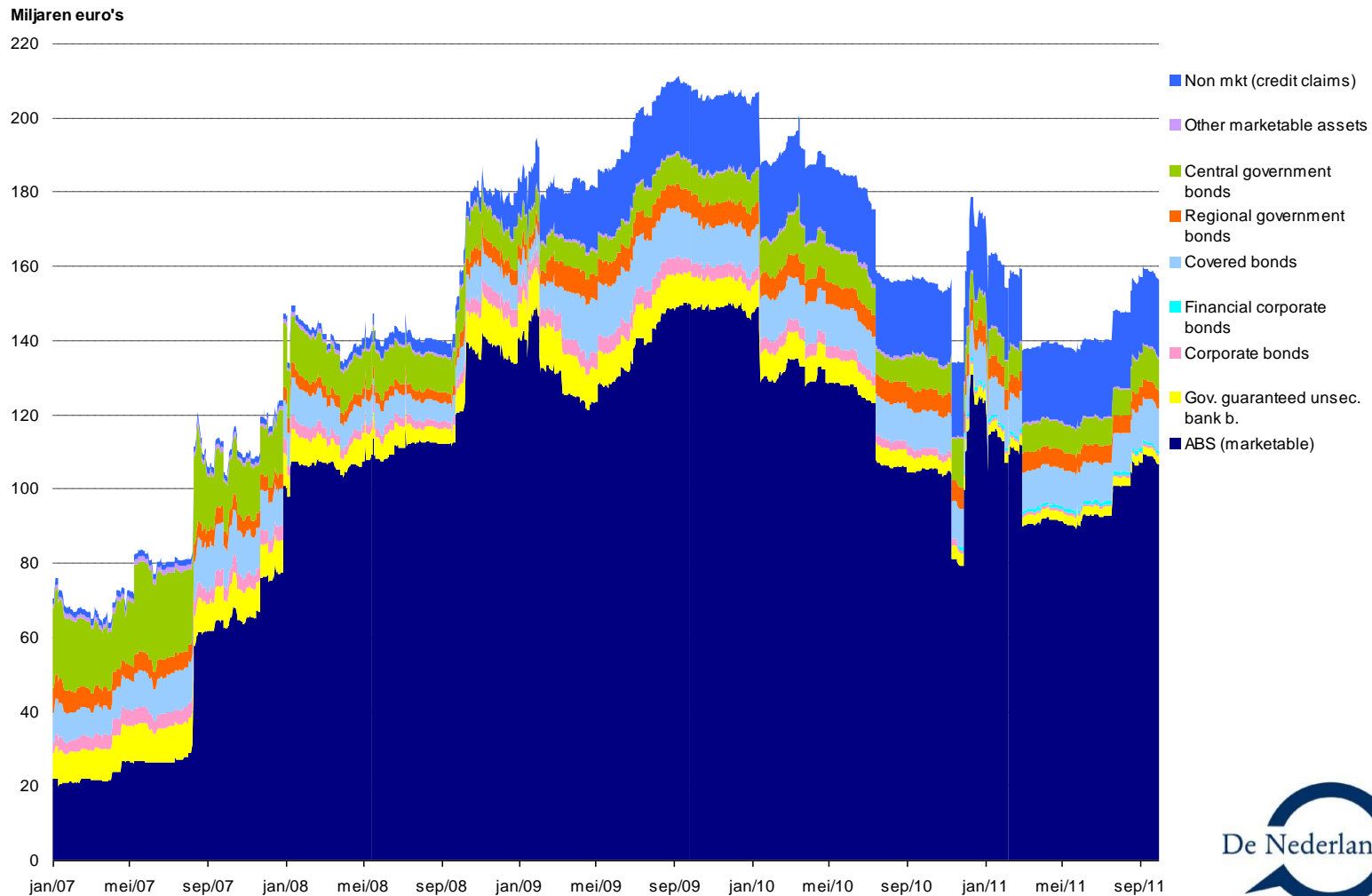
Posted collateral by asset group – EUR billion, Collateral value after haircuts



Snapshot date 29 February 2012

# Development NL collateral pool – 2007 -2011

Value of the deposited collateral by assettype





# Agenda

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- European collateral trends
- Impact of turmoil on financial markets
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# Measures taken since 2008

- Monetary operations added with longer maturities and fixed rates and with full allotment -> VLTRO (3Y!)
- Liquidity provisions in other currencies (US dollars , Swiss francs through Fx swaps), additional swap arrangements (US, CHF, JPY, GBP, SEK)
- Temporary relaxation of eligibility criteria – some ended in 2010
- Foreign collateral prepared in the toolbox (non-EUR collateral)
- Higher haircuts and higher rating requirements for ABS, additional requirements (surveillance reports, no ‘financial close links’)
- Limits for the use of uncovered bank bonds (5% limit)
- Covered bond program (CBPP), 2009-2010, ended, reactivated
- Securities Markets Program (SMP), ongoing
- 2011 – rating requirements lowered to BBB-

# Examples of amendments in 2011

Measure	Announcement date	Implementation date
<b>New haircut schedule and acceptance of "BBB-rated" assets beyond 2010</b>	8 April 2010	1 January 2011
<b>Termination of the acceptance of: i) non-Euro assets; ii) bank bonds traded in accepted non-regulated markets; and iii) subordinated debt instruments with acceptable guarantees</b>	8 April 2010	1 January 2011
<b>Acceptance of fixed-terms deposits as an eligible non-marketable asset type</b>	16 December 2010	1 January 2011
<b>Suspension of the application of the minimum rating threshold to marketable debt instruments issued/guaranteed by the Irish government</b>	31 March 2011	31 March 2011
<b>Suspension of the application of the minimum rating threshold to marketable debt instruments issued/guaranteed by the Portuguese government</b>	7 July 2011	7 July 2011
<b>i) acceptance of debt instruments issued by credit institutions (other than covered bonds) admitted to trading in acceptable non-regulated markets; ii) reduction to 5% of the limit applied to unsecured debt instruments issued by banking groups and iii) postponement of the date for the introduction of a common minimum size threshold for credit claims</b>	21 September 2011	1 January 2012
<b>Temporary increase collateral availability: i) relaxation of the rating requirements (at issuance) applied to ABS (RMBS and SME), subject to the fulfilment of additional criteria in terms of underlying assets; and ii) acceptance of certain additional credit claims</b>	8 December 2011	19 December 2011 (for ABS) 9 February 2012 (for additional credit claims)

# Conclusions regarding functioning of the collateral framework

- The Eurosystem adjusted the collateral framework much less than FED and BoE
- Flexibility Eurosystem framework was historical necessity (no homogeneous banking structures)
- Liquidation risk increased because of dislocated markets
- Concentration risk increased because of own used assets
- Framework needs vigilant monitoring and sound information base
- Increase in residual financial risks asks for continuous redefinition of risk control framework



# Agenda

- The Eurosystem collateral framework
- European collateral trends
- Impact of turmoil on financial markets
- Mobilisation of collateral



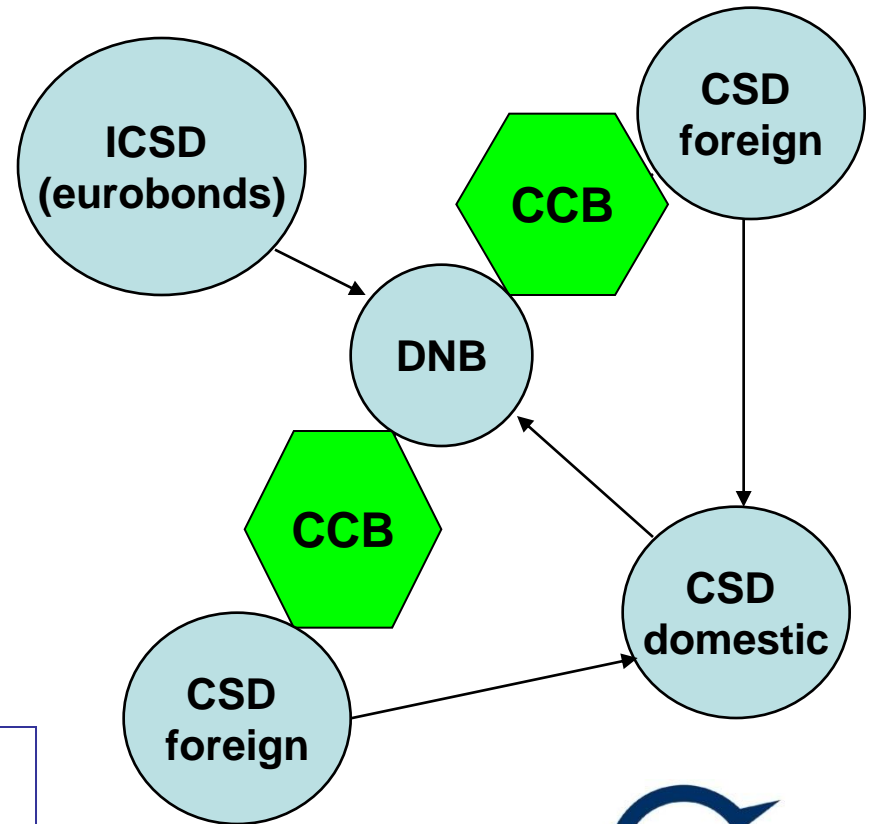
# Safekeeping of collateral (no remote access, repatriation)

## Domestic:

- DNB vault
- Euroclear Netherlands (Local CSD)

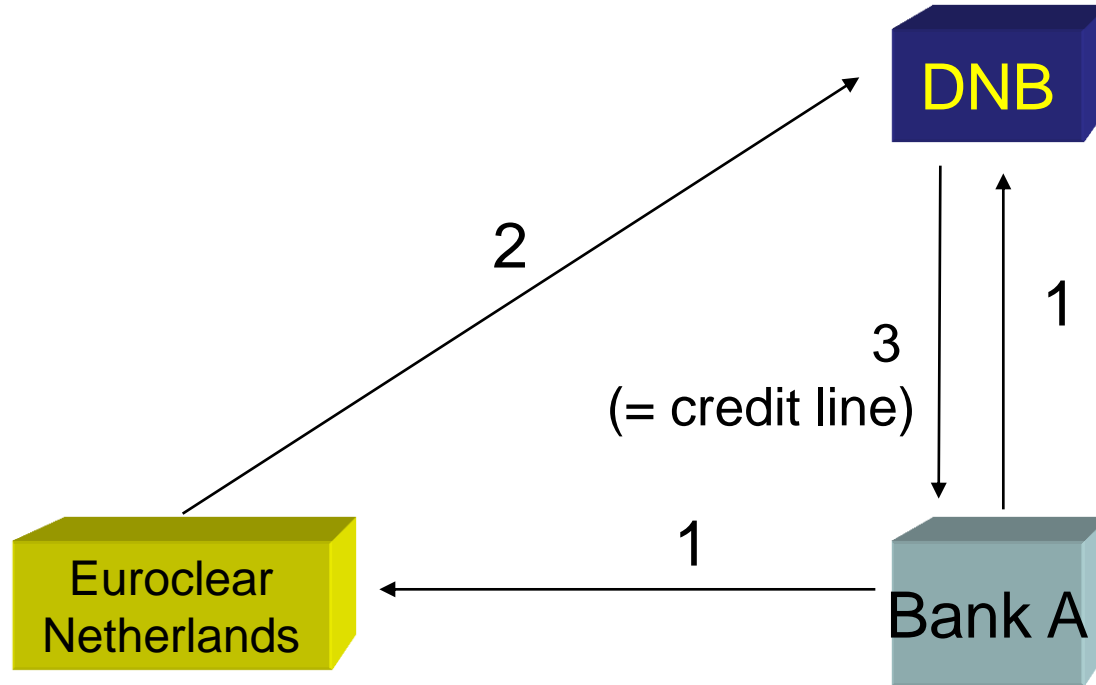
## Cross border:

- Direct link between CSD's
- Foreign CSD via CCBM network of central banks
- Euroclear Bank (exception NL)

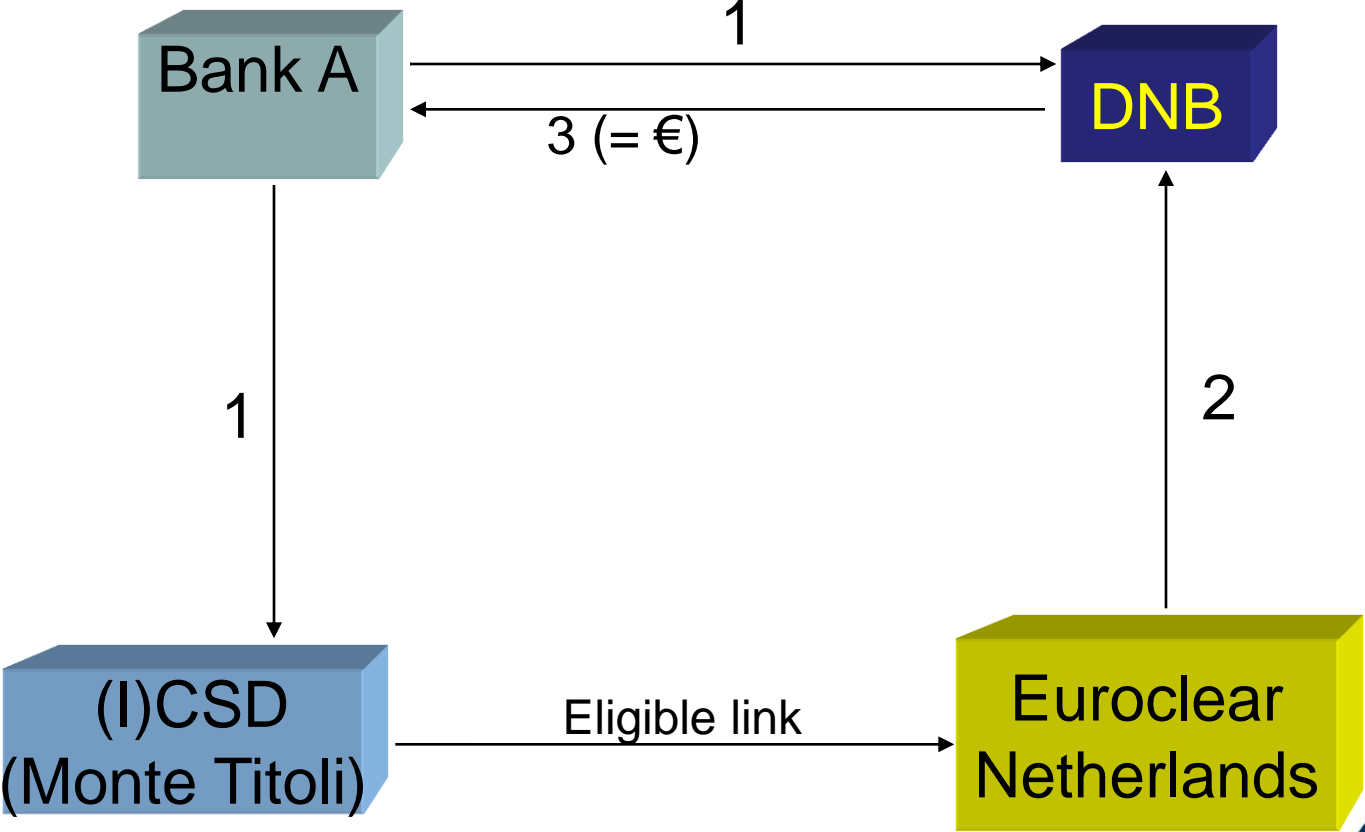


HCB = Home Central Bank  
CCB = Correspondent Central Bank  
CSD = Central Securities Depository

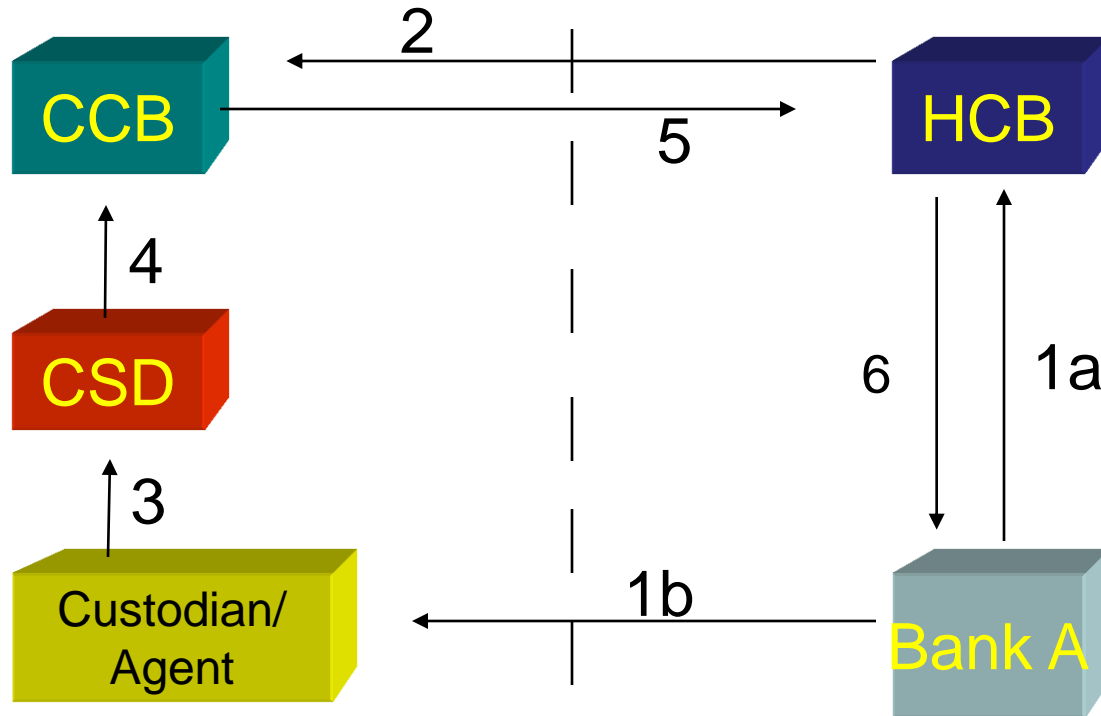
# Structure of domestic safekeeping



# Structure of eligible links



# Structure of CCBM (eurozone+ other CBs)



CCBM - Correspondent Central Bank Model

CCB - Correspondent Central Bank

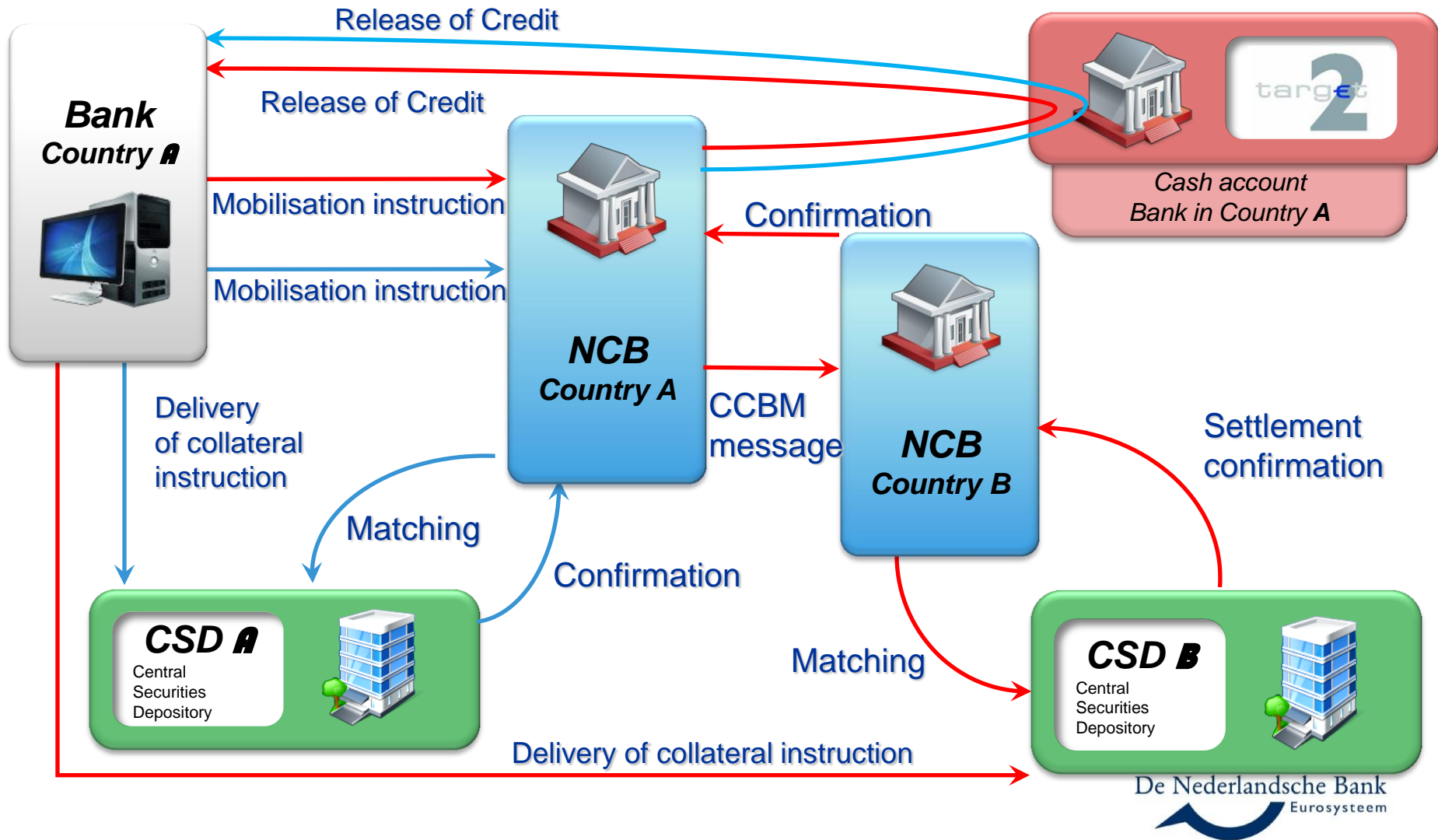
HCB - Home Central Bank

CSD - Central Securities Depository



# Collateral mobilisation flow today

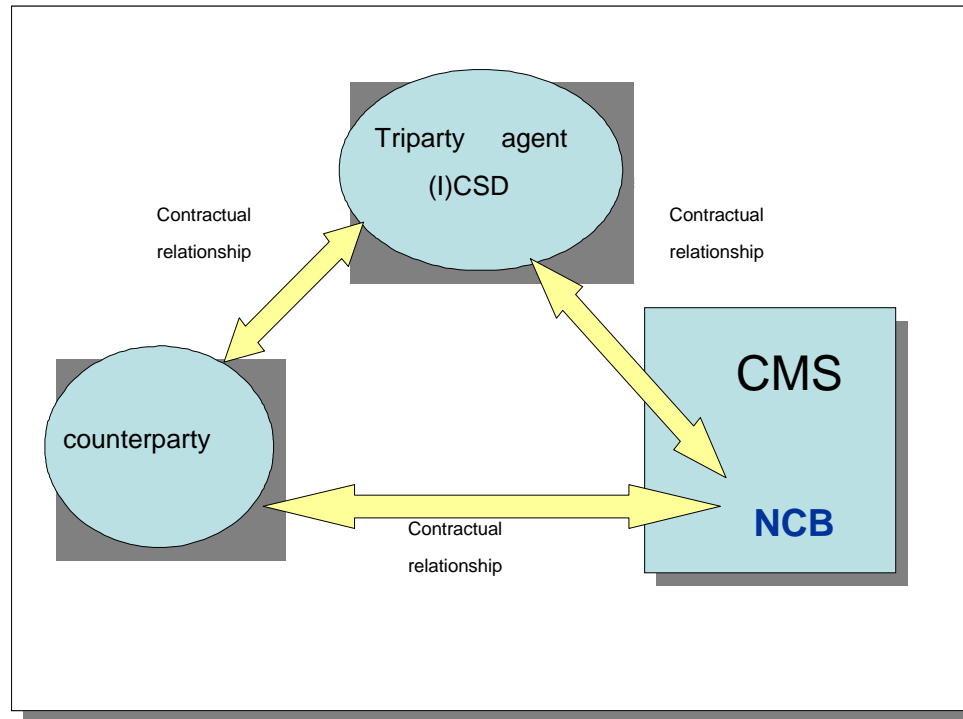
(domestic and cross-border)



# New development: Triparty Collateral Management

Third party (e.g. (I)CSD) acts as an agent for the taker (Eurosysteem) and provider (counterparty) of the collateral.

Taker and provider enter into an agreement with triparty agent on the level of outsourcing.

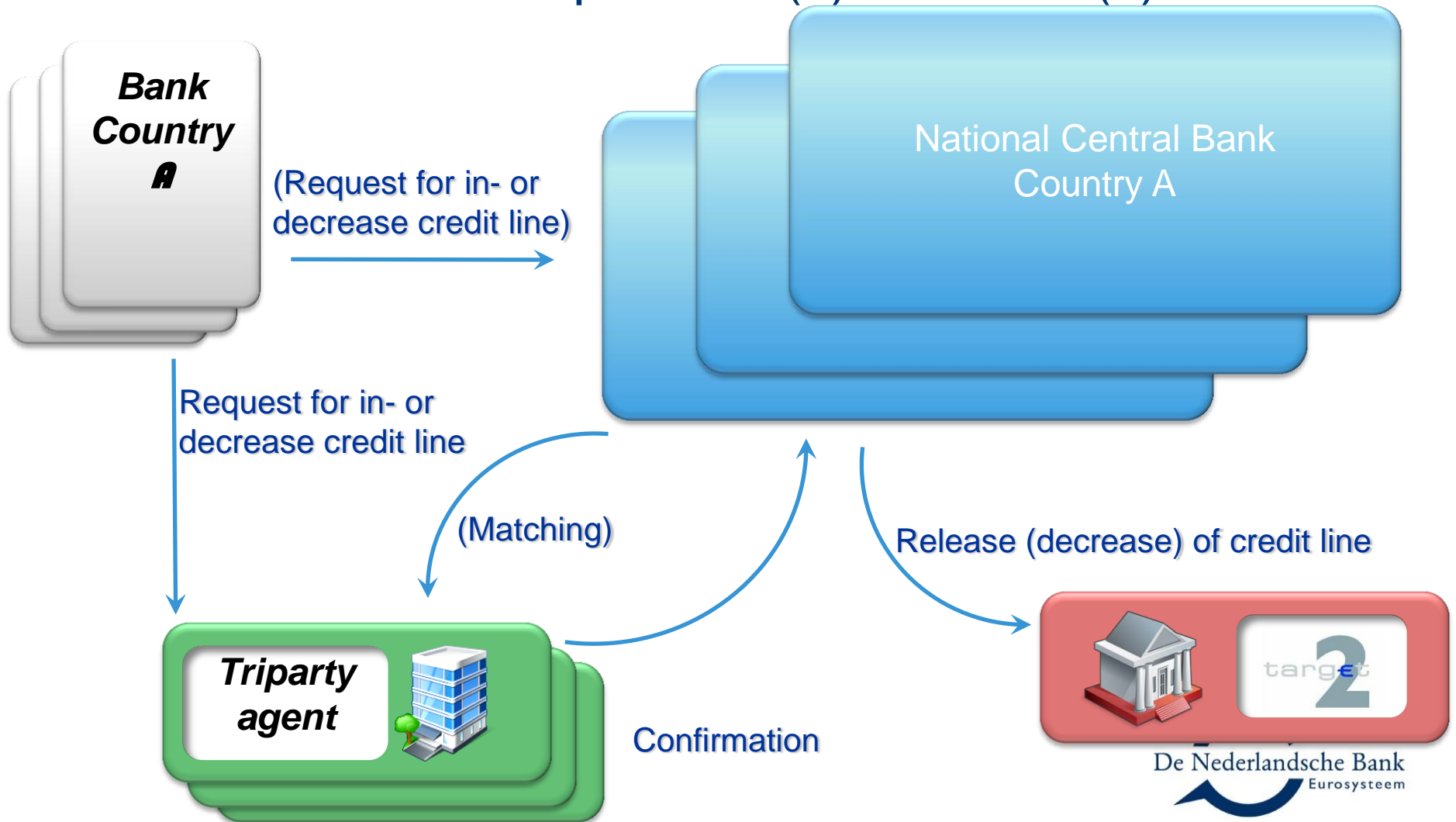


# Basics Triparty Collateral Management

- Typically for repo transactions, securities lending, or securities pledged to a central bank
- Triparty service providers offer generic collateral management services: collateral eligibility checks, valuation, optimisation, automatic allocation and substitution, monitoring and reporting
- Collateral takers: central banks, commercial banks, supranationals, state agencies, asset managers
- Collateral givers: broker dealers, commercial banks, asset managers, investment banks

# Triparty Collateral Management

The flow between provider(s) and user(s)



# Current status Eurosystem Triparty

- **Triparty solutions currently in use with NCBs:**
  - **Clearstream Banking Frankfurt (XemaC)**
  - **Clearstream Bank Luxemburg (CmaX)**
  - **Euroclear Group (Autoselect)**
- **Domestic level only**
- **Models vary to certain extent, in particular in relation to messaging (i.e. NCB connection)**
- **In 2014 available for all eurozone counterparties (also crossborder)**

Questions ??

Thank you !!