

# The persistence and future of cash

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## PaySys Consultancy

- Independent consultancy founded in 1993
- Focus on card-based payment systems (incl. cash withdrawals)
- Founding member of EPCA
- Platform provider for industry discussions
- Services:
  - Strategic consulting
  - Benchmarking studies
  - Market research
  - Implementation assistance
- Geographical scope: Germany and other European countries



# PaySys Consultancy

	Issuers	Acquirers	Processors Schemes Other PSPs	Merchants	Regulators
SEPA-Strategy					
Business Case					
Market Studies					
Benchmarking					
RFPs and RFIs					
Regulation					

## Contents

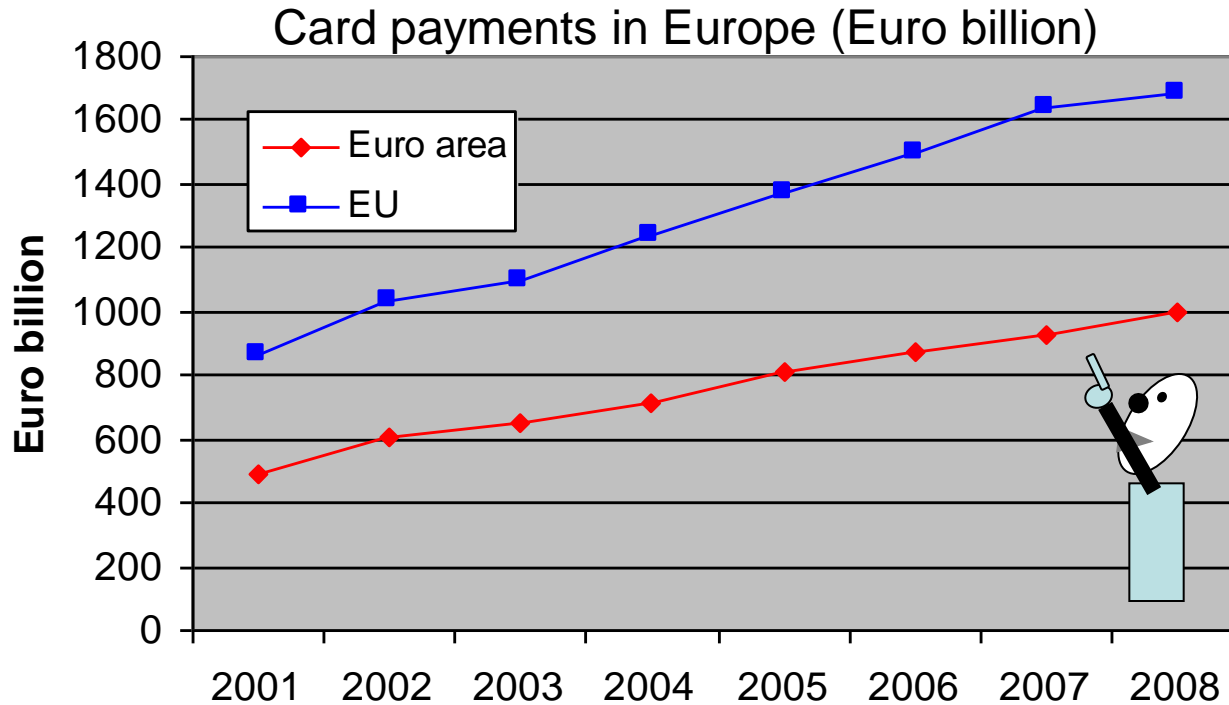
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- **Cash and card trends**
  - The usage of cash
  - The costs of cash and the potential for automation
  - Beyond costs



## Cash and card trends

# The value of card payments goes up!



## Cash and card trends

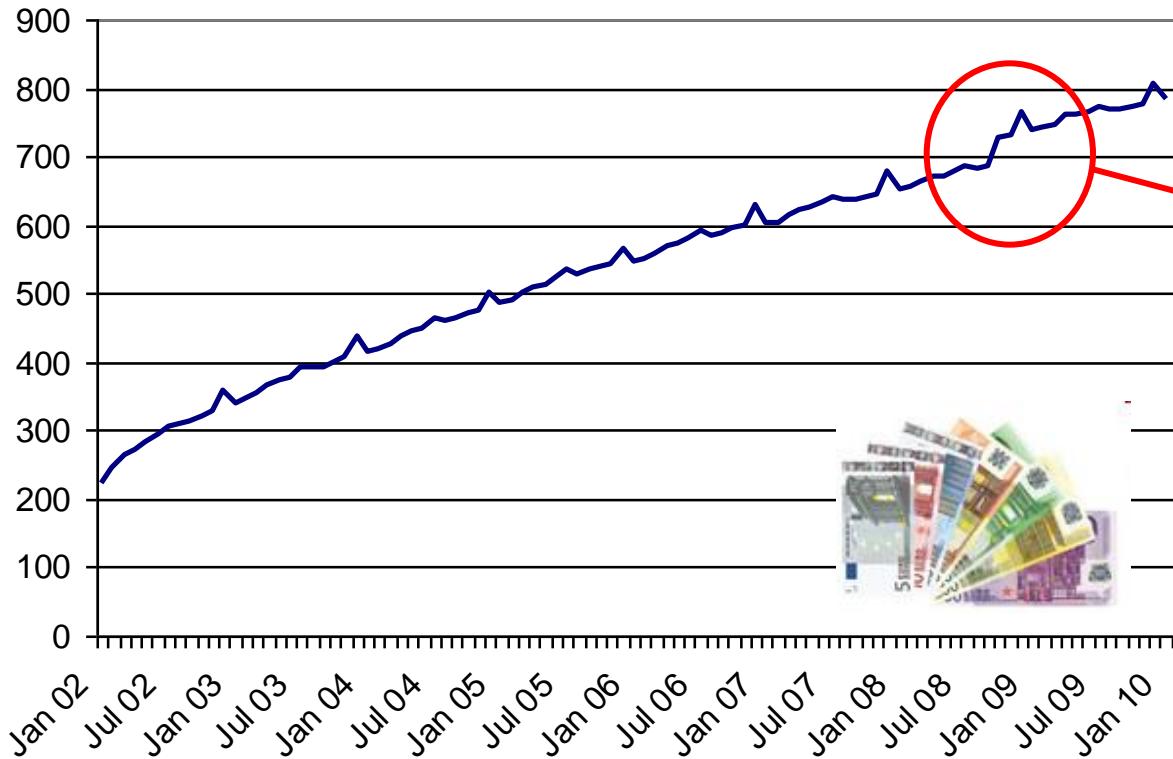
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# But...

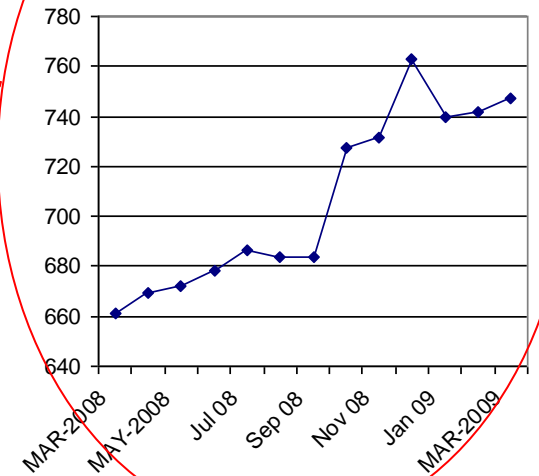
## Cash and card trends

# Bank note circulation does not go down!

Notes in circulation (EUR billion)



The Lehman effect

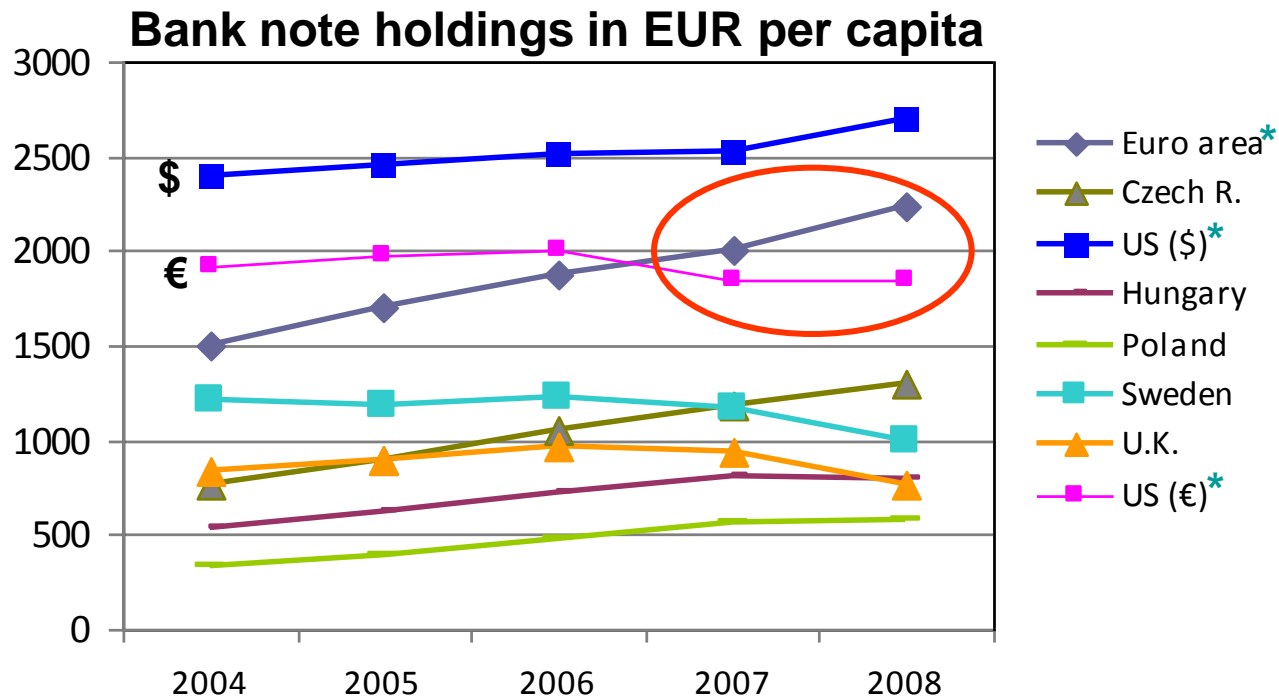


Oct. 2008:  
+EUR 43.7 billion

Source: ECB and own calculations

## Cash and card trends

### Bank notes per capita: Euroland ahead of the US



Source: ECB, BIS and own calculations

\*: X% of Euro and Dollar bank notes circulating in other currency zones



## Cash and card trends

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High cash holdings in the Euro area

Is there scope for more?

**There certainly is!!!**

**Per capita cash holdings in Switzerland:\* EUR 4,375** 

**Per capita cash holdings in Japan:\* EUR 5,058** 

\*: 2008

## Contents

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- Cash and card trends
- The usage of cash
- The costs of cash and the potential for automation
- Beyond costs



## The usage of cash

### What do people do with all this cash?

#### The canonical three functions of money



- Medium of transactions → legal / illegal trx. + local / foreign trx.
- Store of value → legal / illegal + local / foreign
- Unit of account → Does not make it necessary to hold cash.

The demand for transactions' balances is relatively small.

A large fraction of the bank note circulation must be held as store of value.

In the case of the Euro, there is some foreign circulation.

In the case of the Dollar, there is a large foreign circulation.

# The usage of cash

## Foreign circulation

### Net shipments of euro banknotes to destinations outside the euro area

(EUR billions; adjusted for seasonal effects)

- initial frontloading (left-hand scale)
- monthly shipments (left-hand scale)
- cumulative shipments (right-hand scale)



Includes only official shipments of credit institutions

Dec. 2008: EUR 95 b. (=13% of the total stock)

Source: Eurosystem. The last observation is for March 2009.

## The usage of cash

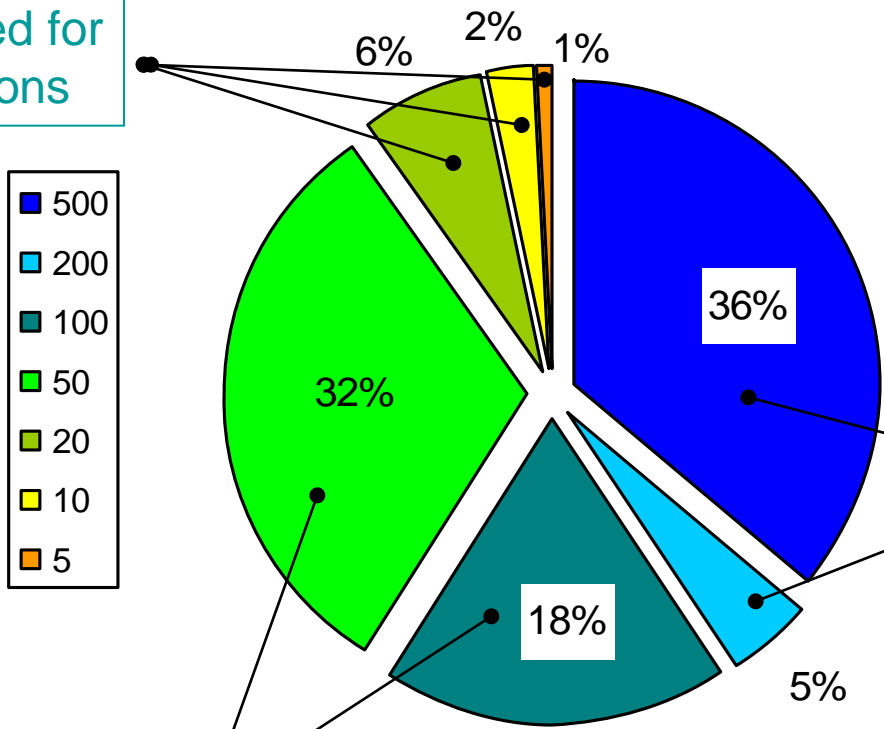
### The denomination of Euro bank notes

Total bank note circulation  
January 2010:  
EUR 784 billion

Mainly used for transactions

Hardly used for transactions

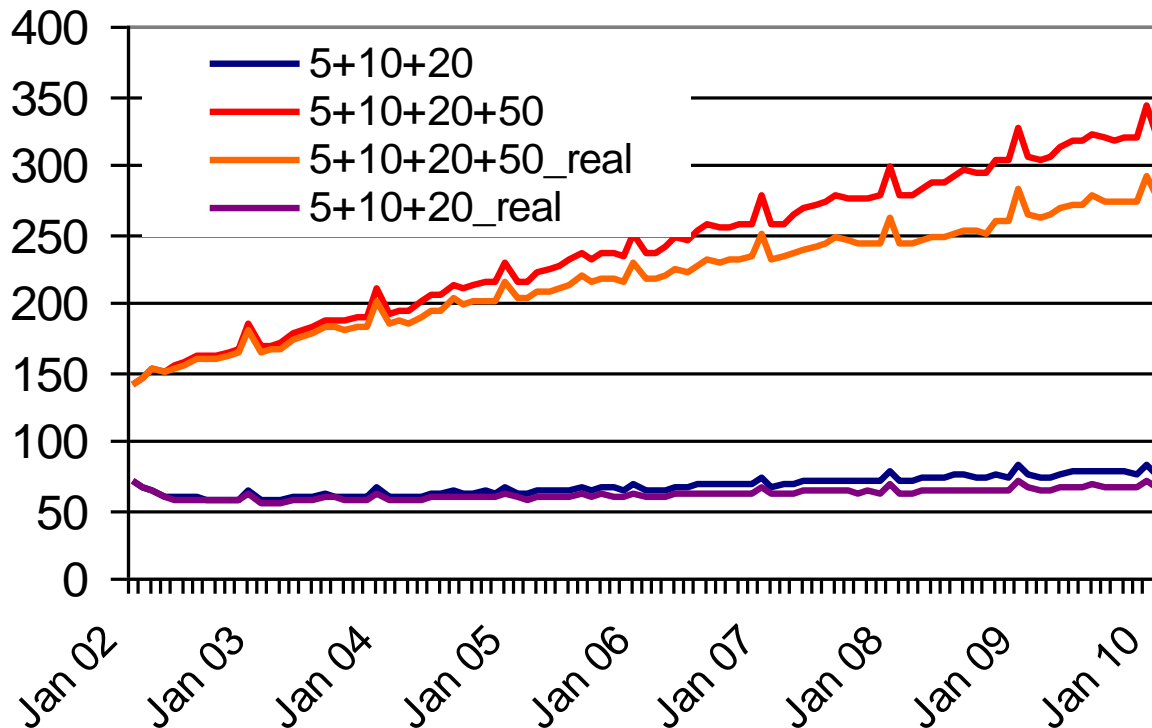
Partly used for transactions



Source: ECB and own calculations

## The usage of cash

### Small denomination bank notes: affected by rising card usage?



The stock of small denomination bank notes rises – albeit slowly.



Increased use of cards has not had a dramatic effect on transactions' balances.

real: figures deflated with the HICP price index

Source: ECB and own calculations

**Bank note circulation January 2010:**  
**5+10+20: EUR 75 billion**  
**5+10+20+50: EUR 322 billion**

## Contents

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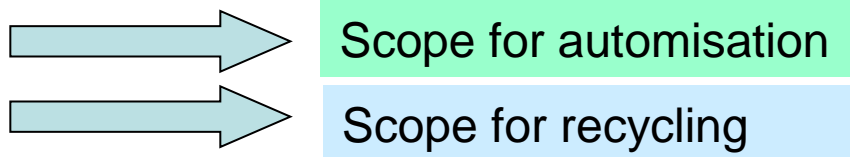
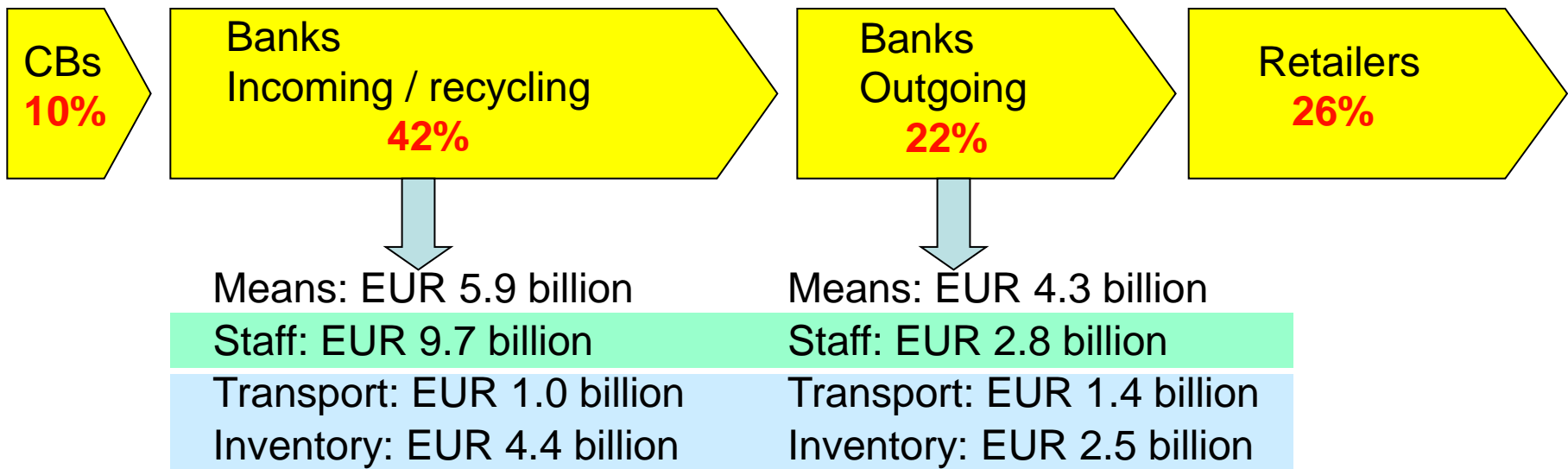
- Cash and card trends
- The usage of cash
- **The costs of cash and the potential for automation**
- Beyond costs



# The costs of cash and the potential for automation

## EPC Cash working Group 2003 Costs of Cash of Banks and Retailers

**EUR 50 billion**





## The costs of cash and the potential for automation

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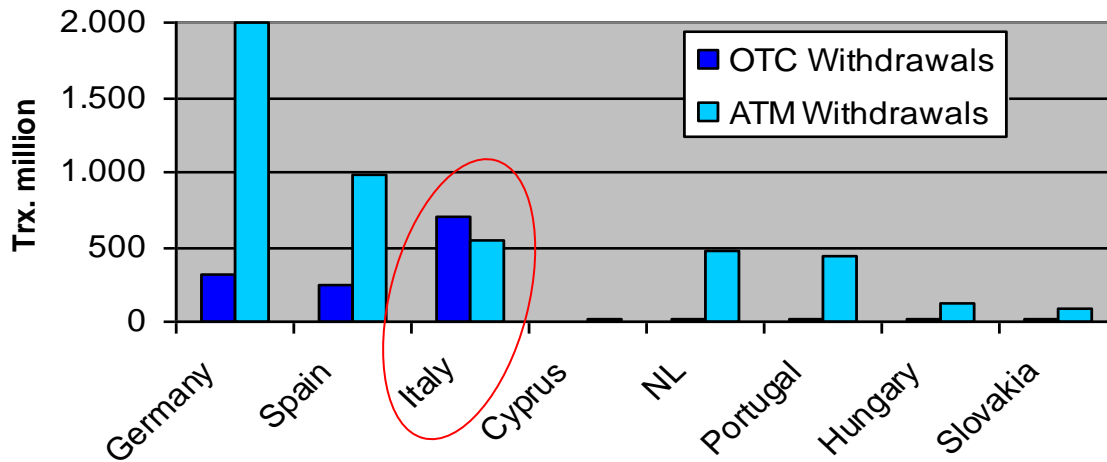
Since 2007, the Eurosystem not only provides data on ATM transactions but also on OTC cash transactions.

For the first time, we have data on the flow of cash - the flow out of and into the banking system.

Unfortunately, these data are available only for a minority of countries.

# The costs of cash and the potential for automation

## Cash withdrawals: OTC versus ATM

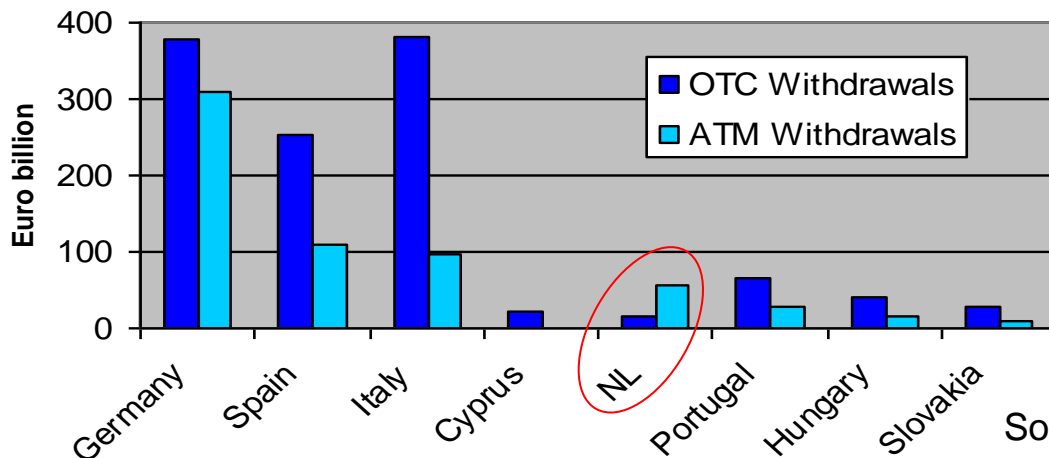


Transactions

A lot has been achieved.

**BUT**

There is scope for more!

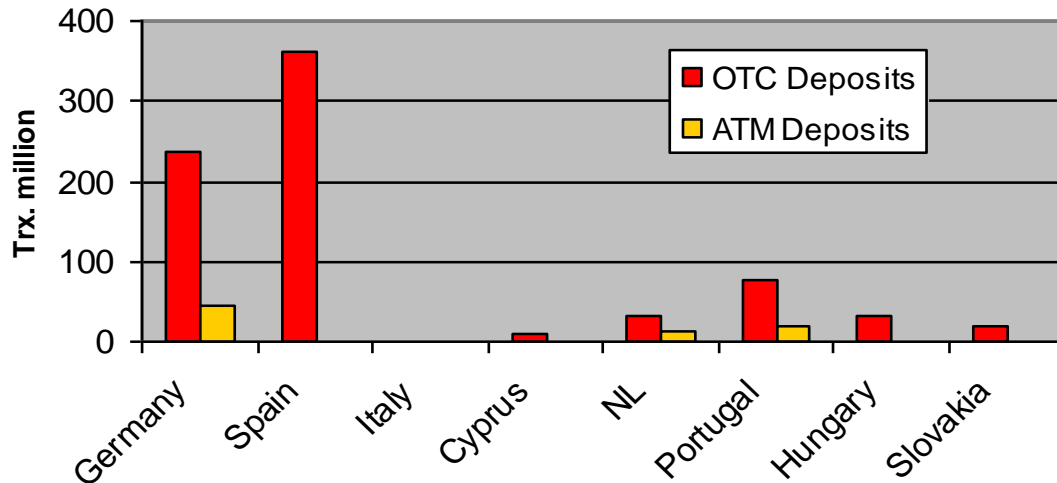


Euro value

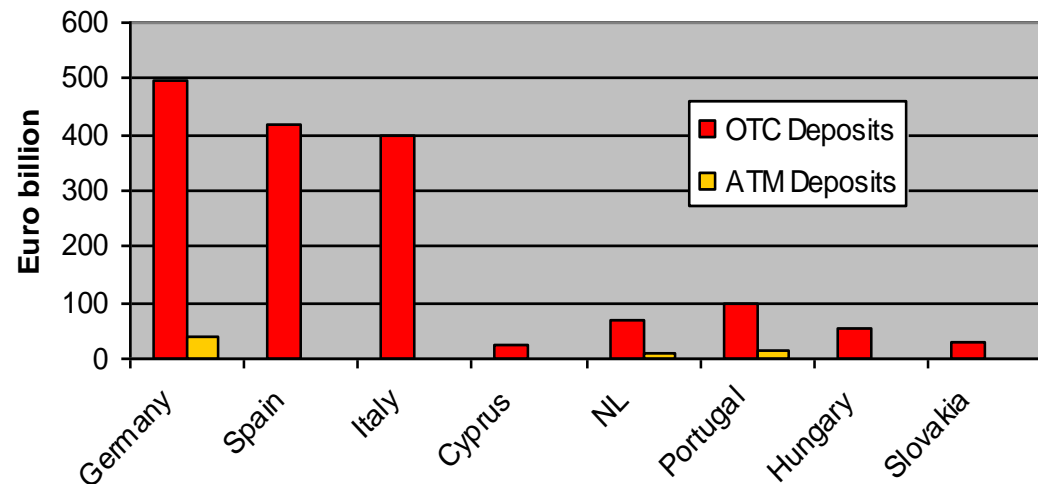
Source: ECB and own calculations

# The costs of cash and the potential for automation

## Cash deposits: OTC versus ATM



Transactions



Euro value

Automation has only just begun.

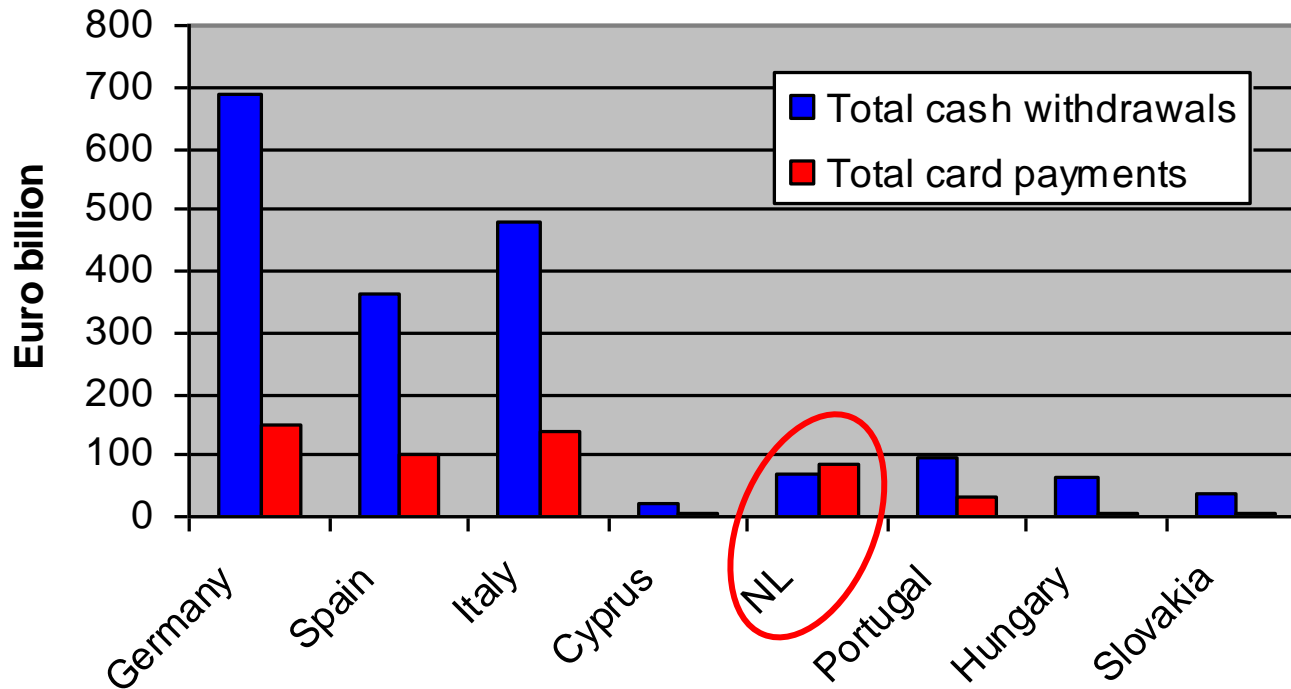
Source: ECB and own calculations

## The costs of cash and the potential for automation

### Cash and card payments compared

→ Euro value of card payments

→ Euro value of cash withdrawals as a proxy of the value of cash payments

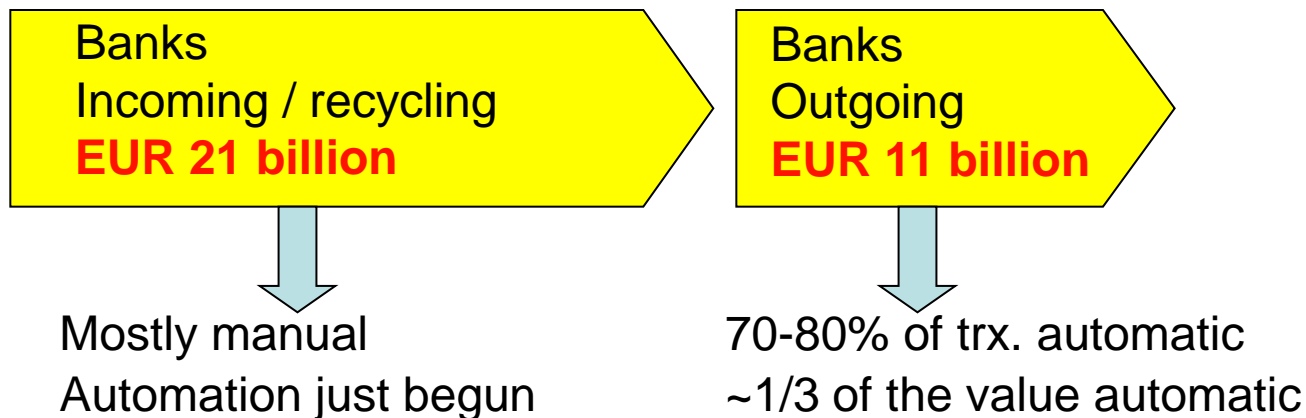


Source: ECB and own calculations

## The costs of cash and the potential for automation

### EPC Cash working Group 2003 Costs of Cash of Banks and Retailers

**EUR 50 billion**



- The difference in costs between incoming and outgoing provides a rough estimate of potential cost savings
- Taking potential efficiency gains on the outgoing side into account such cost savings are even larger

## The costs of cash and the potential for automation

### Potential costs savings: an example

#### “Today”:

Share of counter trx.

- Incoming: 100%

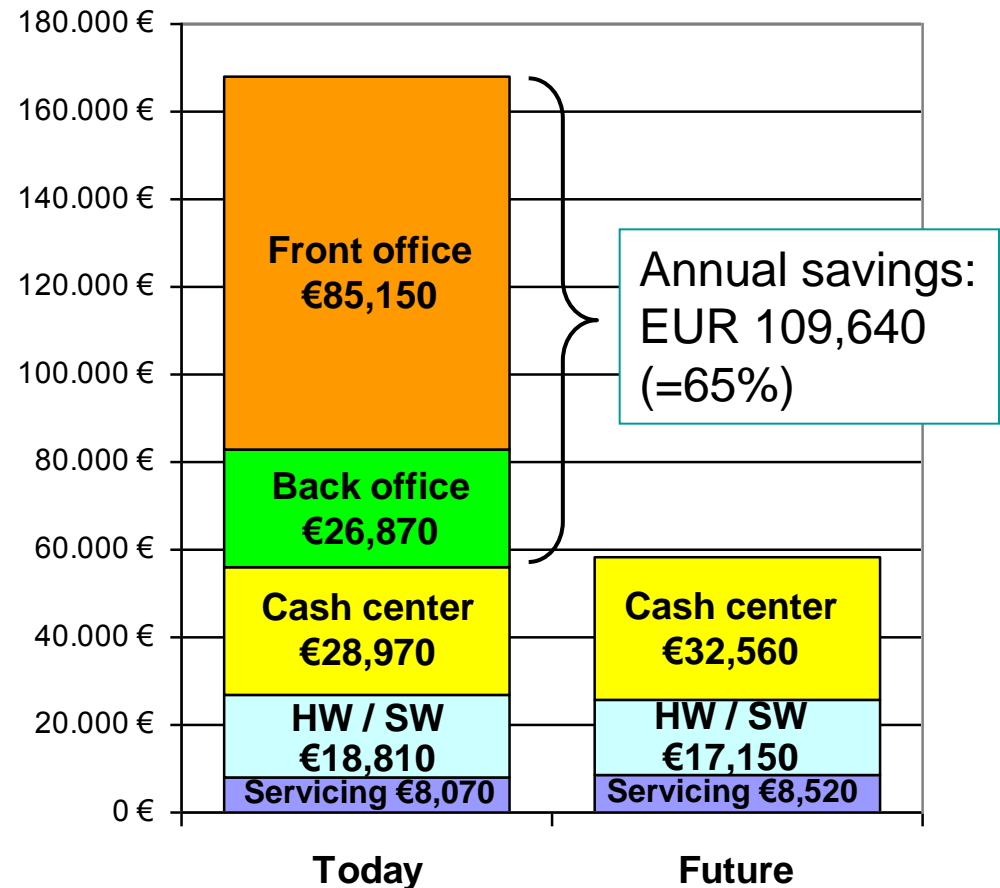
- Outgoing: 30%

Use of ATM and automatic safe

#### “Future”:

Share of counter trx.: 0%

Use of recycler



Source: WINCOR NIXDORF

## The costs of cash and the potential for automation

### Back to the EPC Cash Study:

Much less noticed than the cost estimate of EUR 50 billion is the EPC estimate of the volume of cash transaction

**360 billion cash transactions per year**

Combining the two estimates yields costs per transaction of

**14 cents per year**

Given the enormous scope for automation a value below 10 cents per transaction does not seem unrealistic.

**Not bad for an all-purpose, low/high value, C2B/B2C/B2B/C2C, anonymous, offline payment instrument with fairly low fraud rates.**

## Contents

---

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## Beyond costs

### A look at deposits

#### Value of overnight deposits

	Total deposits	Retail deposits*
<b>Euro area</b>	EUR 3.581 billion	EUR 1.791 billion
<b>EU ex UK</b>	EUR 4.046 billion	EUR 2.023 billion

\*: assuming a retail share share of 50%



#### Net interest earnings on overnight deposits

interest paid \	0%	1%	2%	3%
<b>Euro area</b>	EUR 56,4 b.	EUR 38,5 b.	EUR 20,6 b.	EUR 2,7 b.
<b>EU ex UK</b>	EUR 63,7 b.	EUR 63,7 b.	EUR 63,7 b.	EUR 63,7 b.

interest earned: average EONIA 1999-2008: 3,15%

## Beyond costs

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# A quote from my favorite theorist of money and banking



*Willie Sutton*

„A bank is where  
the money is“.

**If the money is not in the bank anymore –  
what does that mean for the wonderful bank-business of  
issuing zero-interest liabilities**

?

# Thank you for your attention!

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