

Banque de France

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THE **PUZZLE**
OF PAYMENTS **SECURITY:**

*Fitting the Pieces Together
to Protect the Retail Payments System*

Monitoring card payment fraud

- 1. The French Observatory for Payment Card Security**
- 2. Fraud statistics and trends**
- 3. Main security topics & recommendations**

Check online @ www.observatoire-cartes.fr

The need for public intervention

- **The merge of the two leading domestic card schemes in the mid-80's and the push for card acceptance at merchants led to a wide adoption of cards as a payment instrument**
 - ✓ Security a key element to the development of card payments
- **Despite Chip & PIN introduced in France in 1992, security issues arose around the security of payment cards**
 - ✓ Got media attention in the late 90's / 2000
 - ✓ Endangered public confidence in cards
- **The French legislator took concrete measures (Everyday Security Act – 2001)**
 - ✓ Banque de France had its oversight mandate extended to payment instruments
 - ✓ Creation of an Observatory aimed at ensuring the security of card payments, with all stakeholders involved

Banque de France extended oversight over payment instruments

- **All payment instrument issuers covered**
 - ✓ Includes issuing, administering and outsourcing of means of payments

- **Offsite/onsite inspections of all relevant entities**
 - ✓ Including technical providers / vendors

- **Close cooperation with the banking supervisor**
 - ✓ **Annual reports** from licensed entities on operational risk
 - ✓ The EU Payment Services and e-money Directives introduced new categories of payment service providers alongside banks
 - ✓ As part of the licensing process under the supervisor's responsibility, Banque de France delivers an **official statement on security of payment services and instruments**

The French Observatory for Payment Card Security

■ Chaired by the Governor of Banque de France

- ✓ Members: MP, Senator, representatives for issuers, acquirers, schemes, merchants, consumers and government bodies
- ✓ Bound by professional secrecy
- ✓ Secretariat: Banque de France

■ Three missions

- ✓ Elaborating fraud statistics
- ✓ Ensuring a technology watch and issuing recommendations
- ✓ Following closely security measures deployed by issuers/banks and merchants



■ Annual report published online (in July)

The Observatory's internal organisation (1)

The working group on statistics

■ **Composition :**

- Defined by the Observatory by absolute majority,
- Relies on technical experts delegated by the Observatory members.

■ **Missions :**

- Issues guidelines aimed at harmonising procedures for establishing fraud statistics for the various types of payment cards,
- Compiles statistics on fraud on the basis of the relevant information disclosed by payment card issuers to the Observatory's secretariat,
- Covers cards issued by payment service providers or other assimilated entities, that serve to withdraw or transfer funds.

■ **Current focus :**

- Statistics related to 3D-Secure implementation (on the acquiring side) and 2FA mechanisms using this protocol,
- Contactless payments.

The Observatory's internal organisation (2)

The working group on technology watch

■ Composition :

- Similar to the working group on statistics,
- May hear relevant stakeholders able to provide information useful to its mandate.

■ Missions :

- Maintains a technology watch in the card payments field, with the aim of proposing measures to increase or maintain their security,
- Collects all the available information that is liable to reinforce payment card security and puts it at the disposal of its members,
- Organises the exchange of information between its members while respecting confidentiality where necessary.

The Observatory's internal organisation (3)

The working group on technology watch

Main studies since 2002 :

General topics	Security of innovations
Standardisation and certification (2005/2007/2010)	Security of online / card-not-present transactions, 2FA (2008/2013)
Follow-up of the EMV migration in the SEPA area	Security of prepaid cards (2010)
Security of mail orders and telephone orders (2009)	Contactless cards and mobile phones (2004/2007/2009/2012/2014)
Impact of co-branding on payment card security (2008)	Terminals
Security of open networks (2004/2006)	Security of payment terminals (2005/2013)
Impact of biometry and cryptology on security (2003/2004/2014)	Security of unattended payment terminals and automated teller machines (2006)
Automated fraud detection systems (2003)	Security of UPT networks (2008)
	Security of « Light » terminals (2009)

Annual report & Follow-up

■ Structure :

- A specific case study
 - *In 2010 and 2011, costs analysis related to the migrations to EMV and 2FA*
 - *Since 2012, stocktaking regarding the deployment of 2FA*
- Chapters on statistics and technology watch, incl. recommendations
- A dedicated chapter of general interest drafted by the Secretariat
 - *In 2011, security issues related to the emergence of a new European card payment scheme*
 - *In 2013, protection of personal data in fraud prevention systems*

■ Adoption :

- during the June Plenary meeting,
- by absolute majority.

■ Publication :

- Annual release at the beginning of July (FR version, EN in September),
- Press conference (w/ Q&A) held by the President.

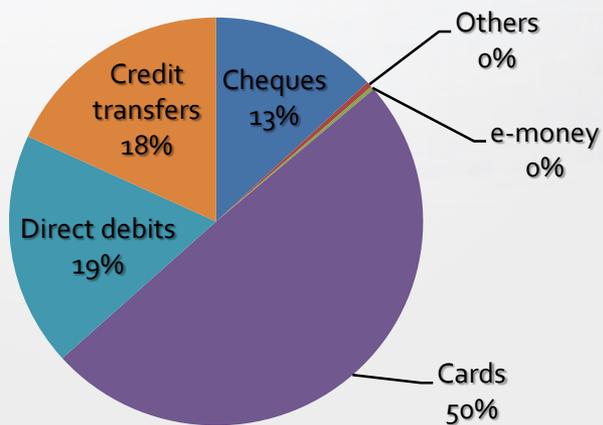
■ Follow-up of recommendations ensured by Banque de France

Monitoring card payment fraud

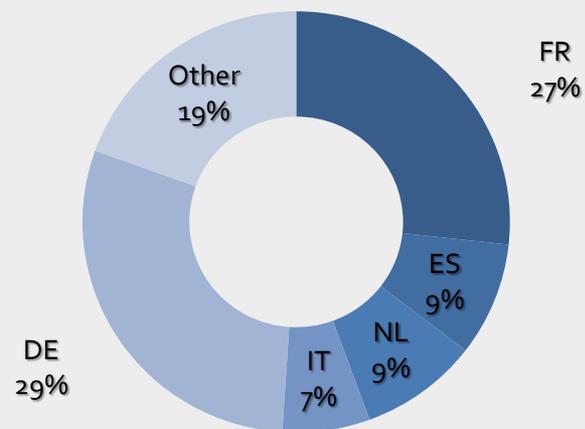
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Card payment landscape in France (1)

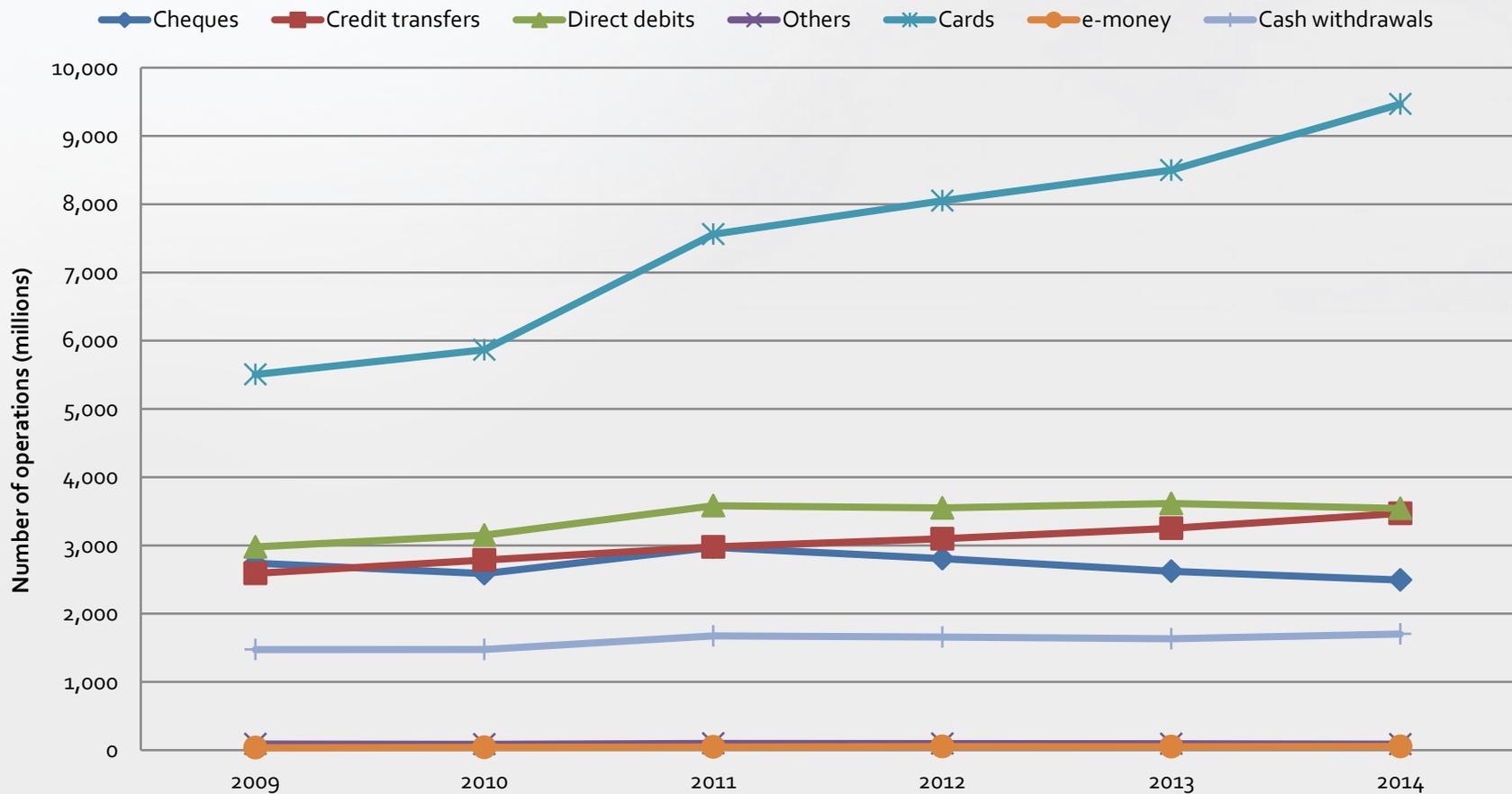
Payments in FR / 2014 (volume)



Payments in Euro area / 2013



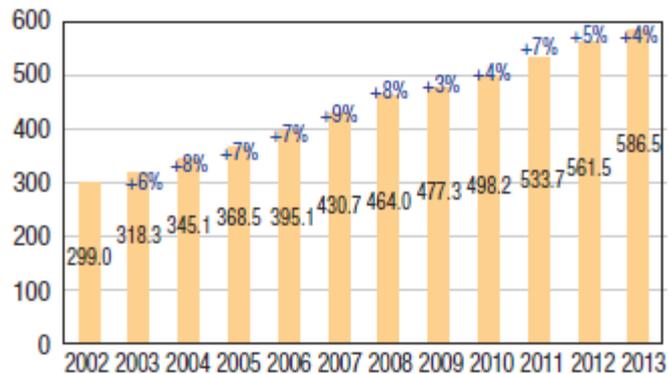
Card payment landscape in France (2)



Card payment fraud (1)

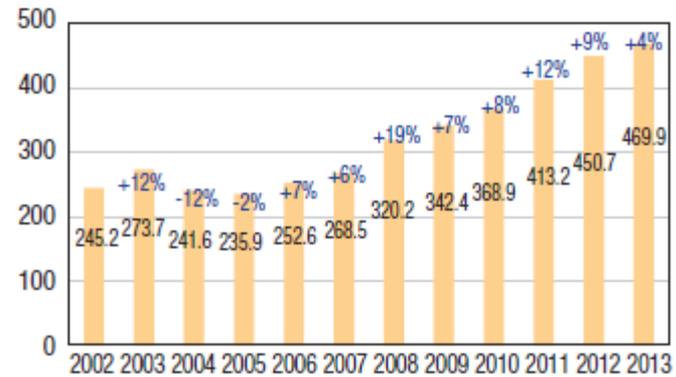
Value of transactions

(EUR billions)



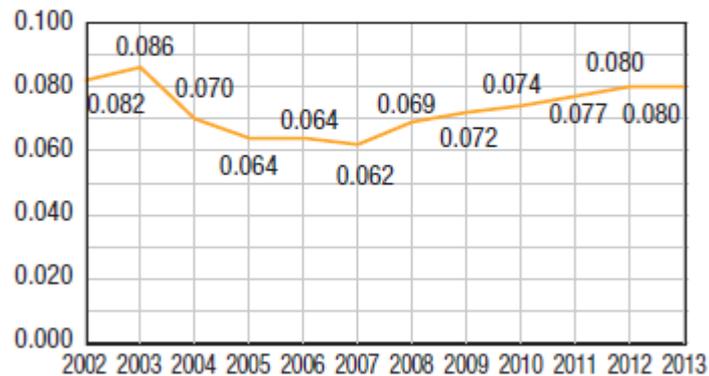
Amount of fraud

(EUR millions)



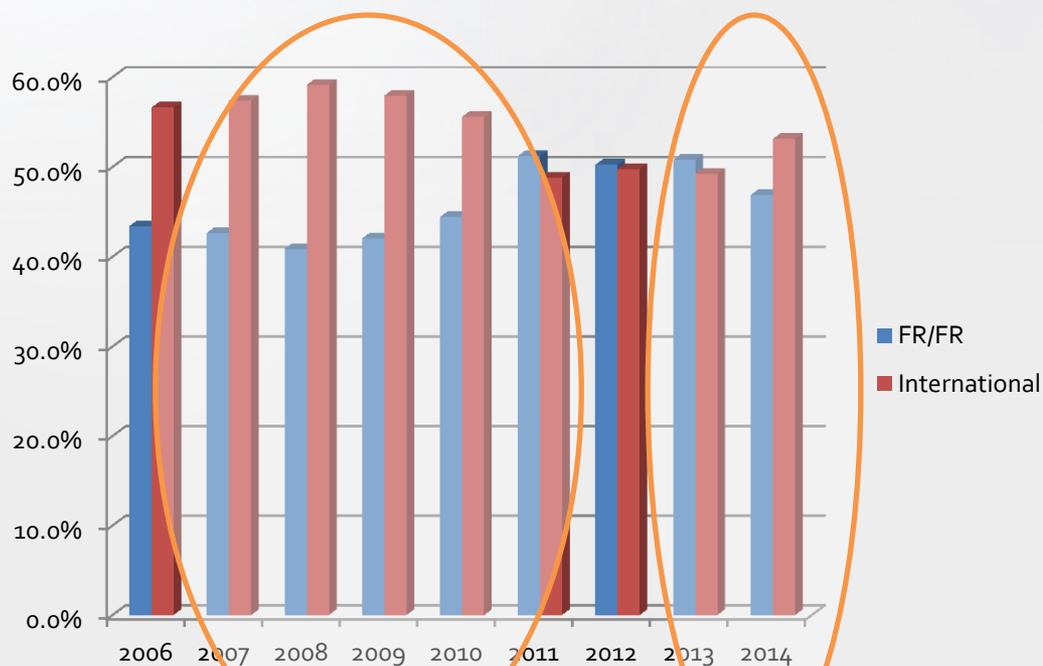
Fraud rate all card and transaction types

(%)



Card payment fraud (2)

Share of domestic (FR/FR) vs. international (FR/ET, ET/FR) fraud



(EMV in Europe)

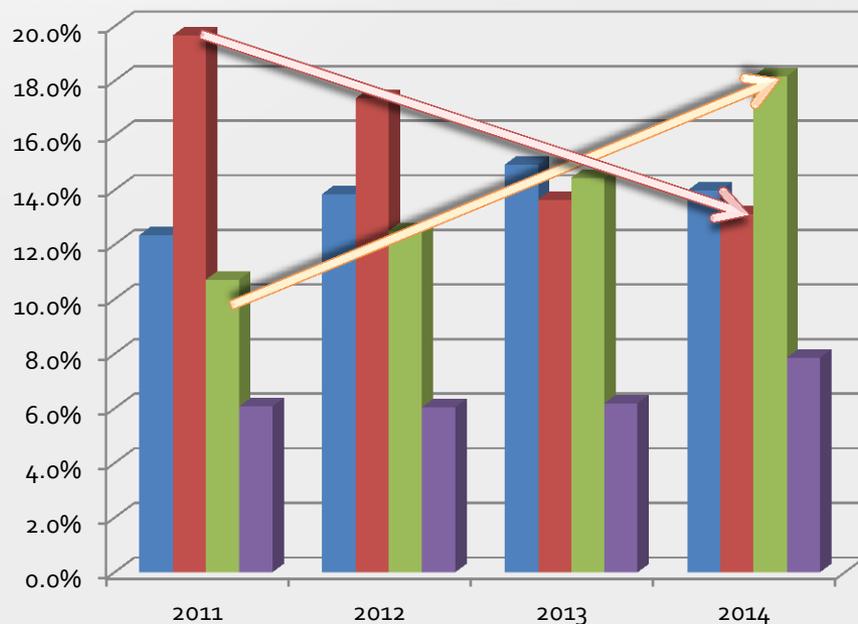
(CNP) + (EMV outside EU)

Card payment fraud (3)

Focus on international fraud:

- Cards issued in France and frauded in SEPA or beyond (ET)
- Cards from SEPA or beyond and frauded in France

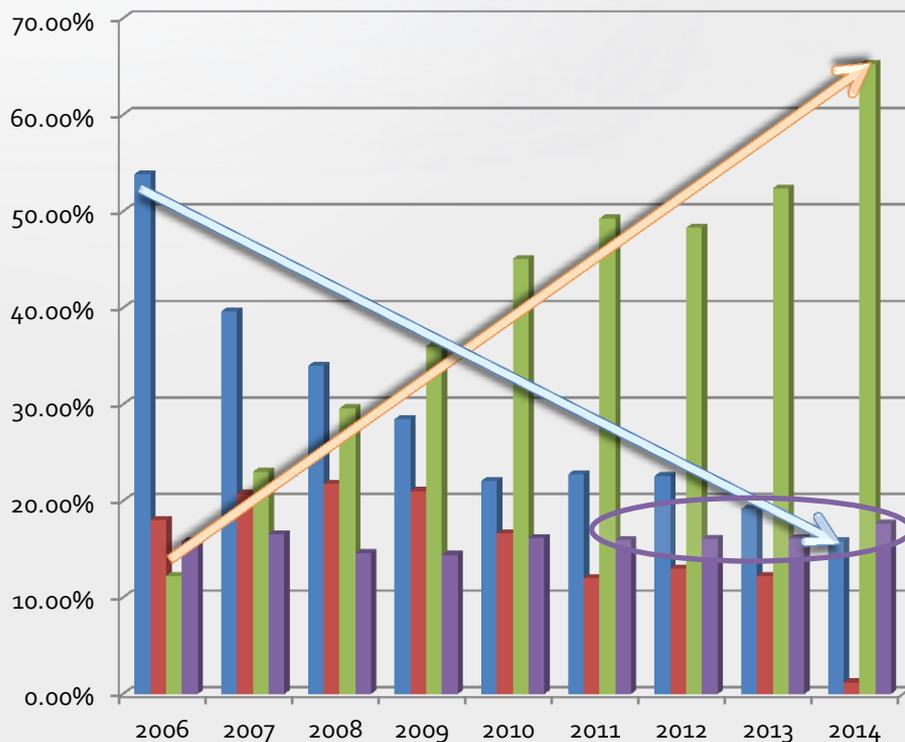
EMV Worldwide



CNP Internet
Europe

Card payment fraud (4)

Breakdown of domestic fraud



CNP Internet:
65.3% of total fraud
(11.3% of total tx)

- Proximity payments
- CNP w/o Internet
- CNP Internet
- Cash withdrawals

Proximity:
16% of total fraud
(66% of total tx)

Slight increase
in fraud on cash
withdrawals

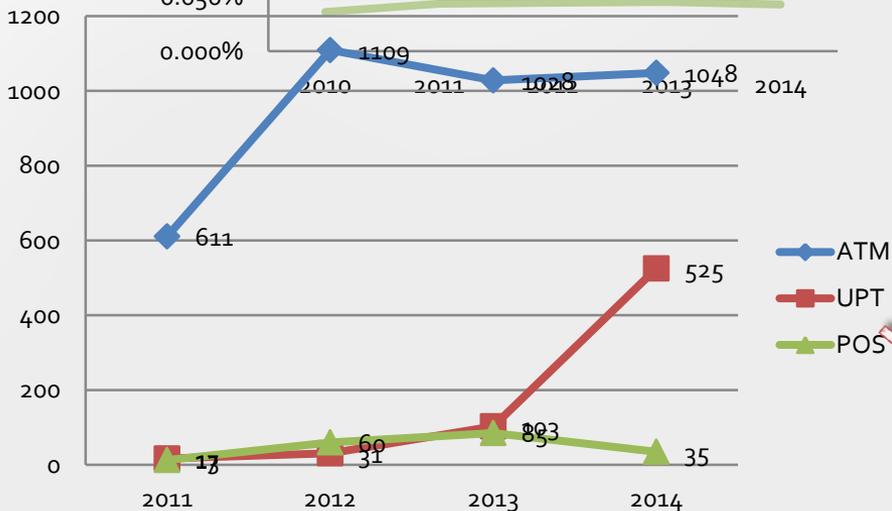
Card payment fraud (5)

Fraud rates CNP Internet vs. Total

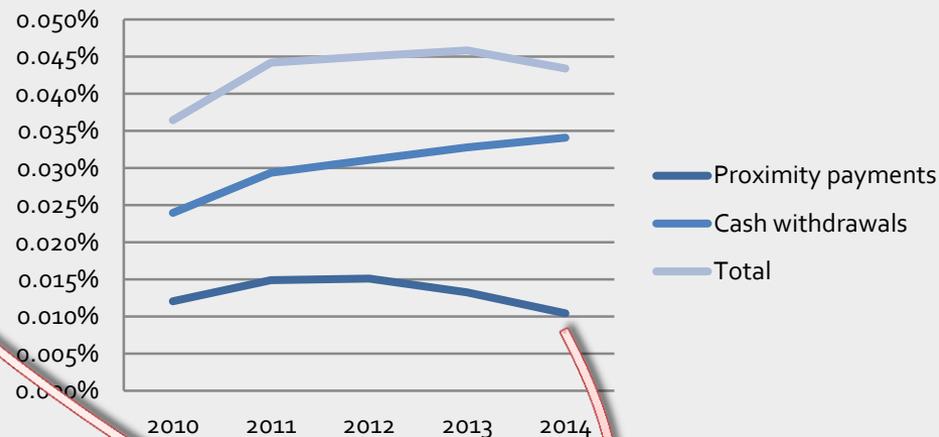


Focus on domestic fraud rates

Police forces indicators: number of attacks on acceptance devices



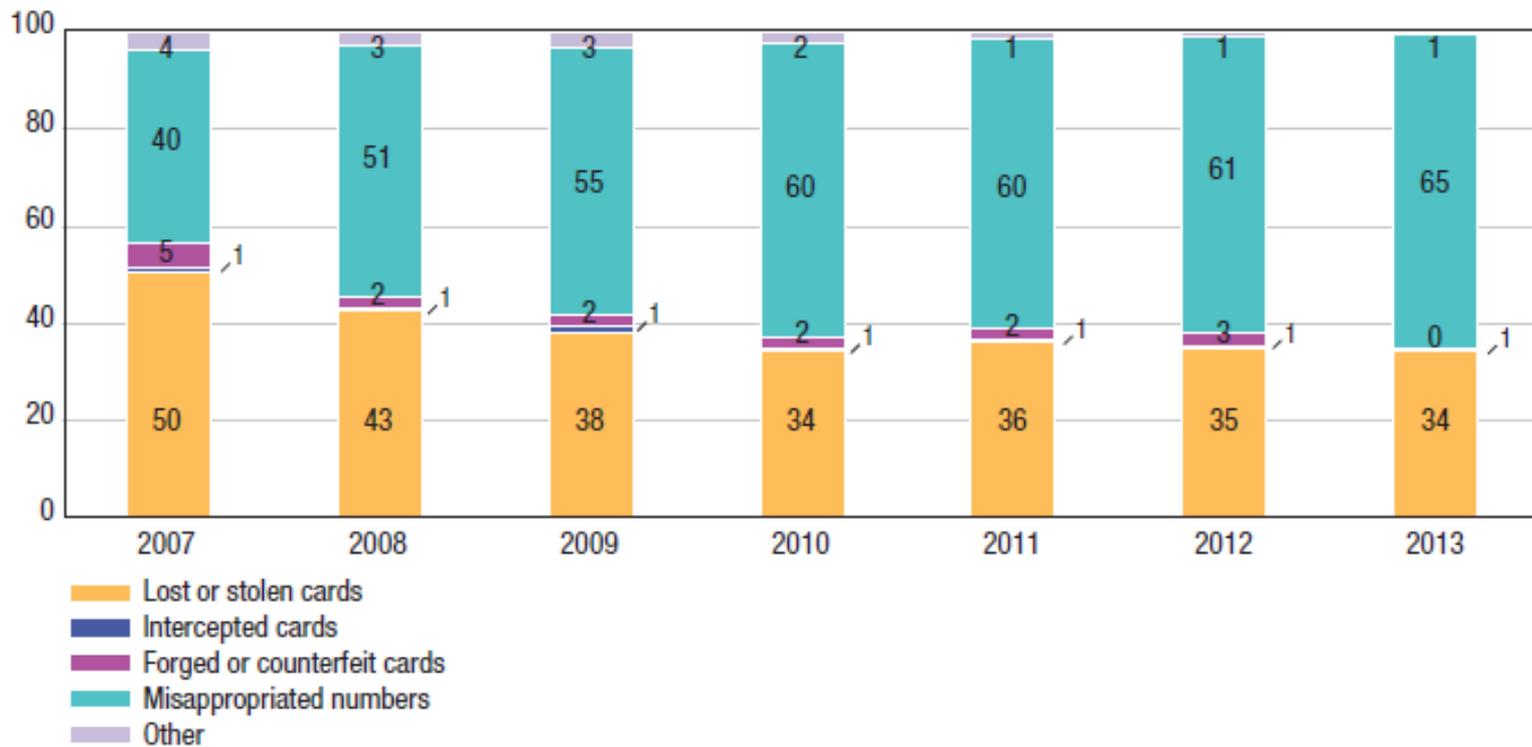
Fraud rates Total vs. Proximity and Cash withdrawals



Card payment fraud (6)

Breakdown by fraud type (domestic transactions, fraud amount)

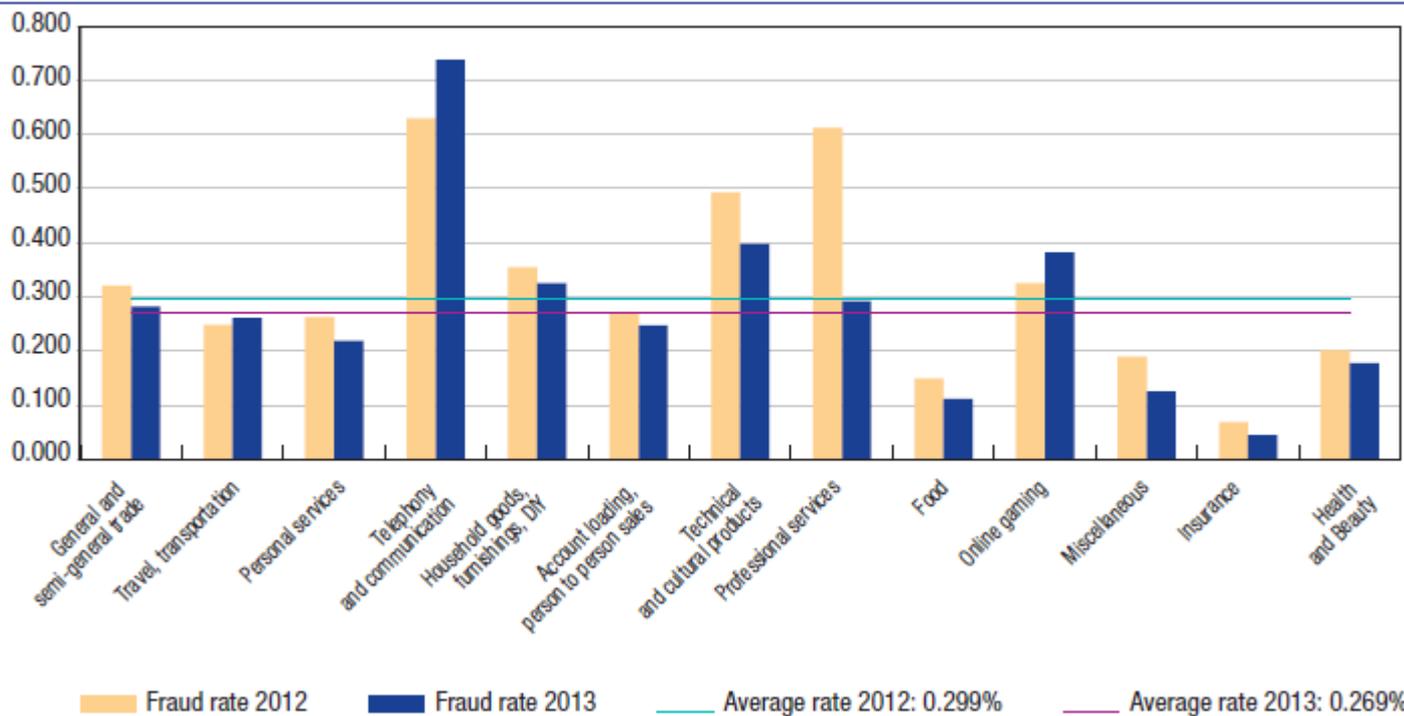
(%)



Card payment fraud (7)

Domestic fraud rates in CNP payments, by sector of activity

(%)



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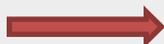
Summary of main threats and recommendations

Type of risk	Recommended measures
Counterfeiting	<ul style="list-style-type: none"> Insert hologram Use cryptographic processes to identify components Certification of components (card, terminal)
Theft	<ul style="list-style-type: none"> Market-wide introduction of EMV standard Authenticate cardholders using PIN Set thresholds for transactions in contactless and prepaid mode Use fraud detection systems
Compromise of card data	<ul style="list-style-type: none"> Implement anti-phishing measures, conduct communication campaigns Protect data end to end (encryption), use private networks Use CVX2 for card-not-present transactions Use virtual dynamic cards Protect sensitive data by applying international standards Enhance physical security of UPTs and instant issue systems Limit use of stripe readers in UPTs Use dedicated PAN for certain modes (contactless, mobile) Have function to deactivate radio transmissions in contactless mode Use cases that block radio waves
Online identity theft	<ul style="list-style-type: none"> Enhanced cardholder authentication (also called one-time authentication)

Contactless



CNP

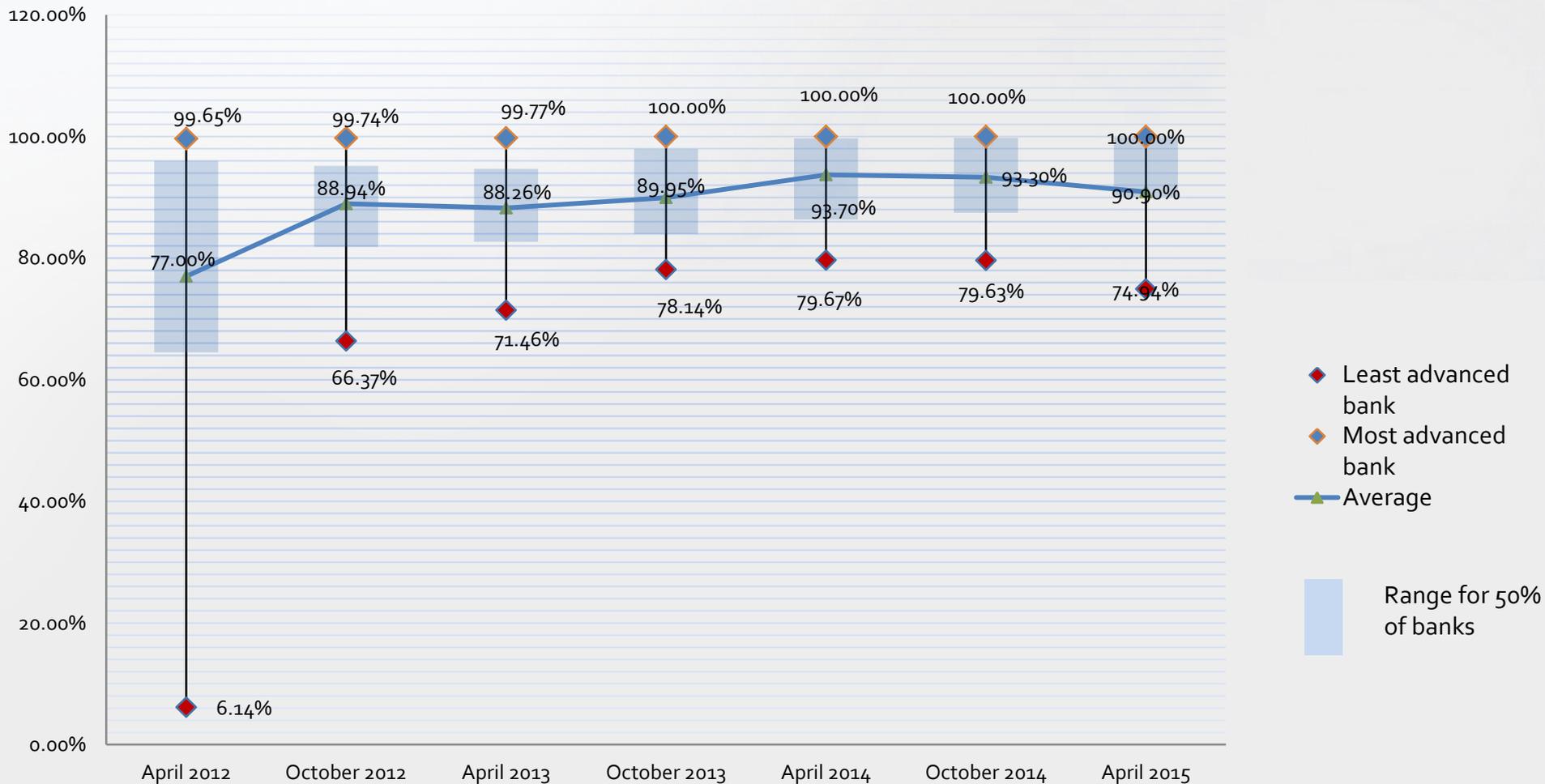


Enhancing online card payments security (1)

- **Since 2008, the Observatory main priority has been combatting Card-not-present fraud**
 - Actions towards issuers/banks and e-merchants taken by Banque de France
- **Strong customer authentication / 2FA a must for online payments**
 - Not necessarily the only solution but scoring techniques, etc., cannot replace it
 - Card issuers requested to have their cardholders 2FA ready
 - Risk based approach allowing a progressive deployment by e-merchants
- **Cannot be a French only initiative**
 - Banque de France strongly supported the emergence of a European forum for supervisors and central bankers: *SecuRe Pay* (2011)
 - The revised European Payment Services Directive will implement 2FA in law (adoption 2015, entry into force 2017/18)

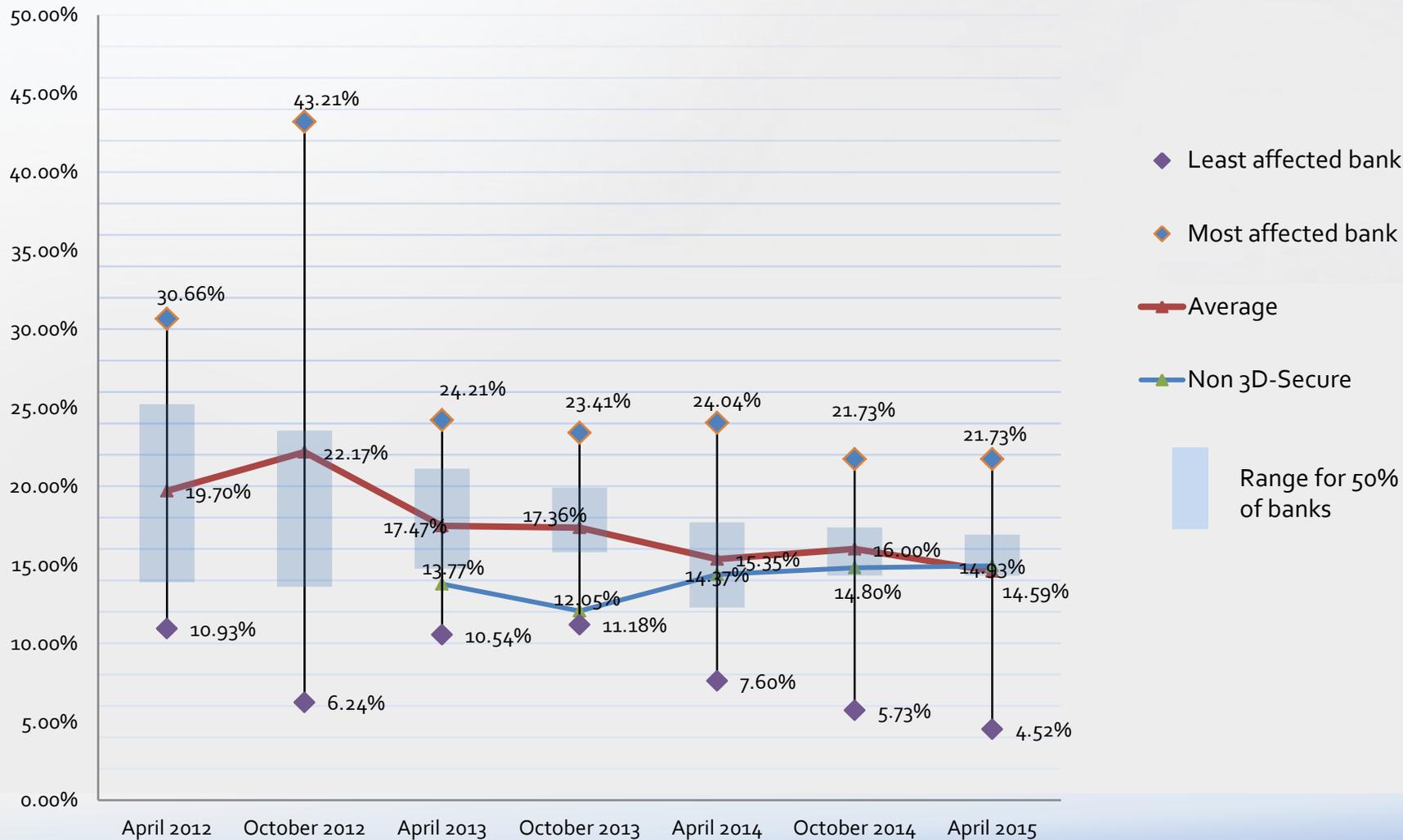
Enhancing online card payments security (2)

Cardholder 2FA equipment rate



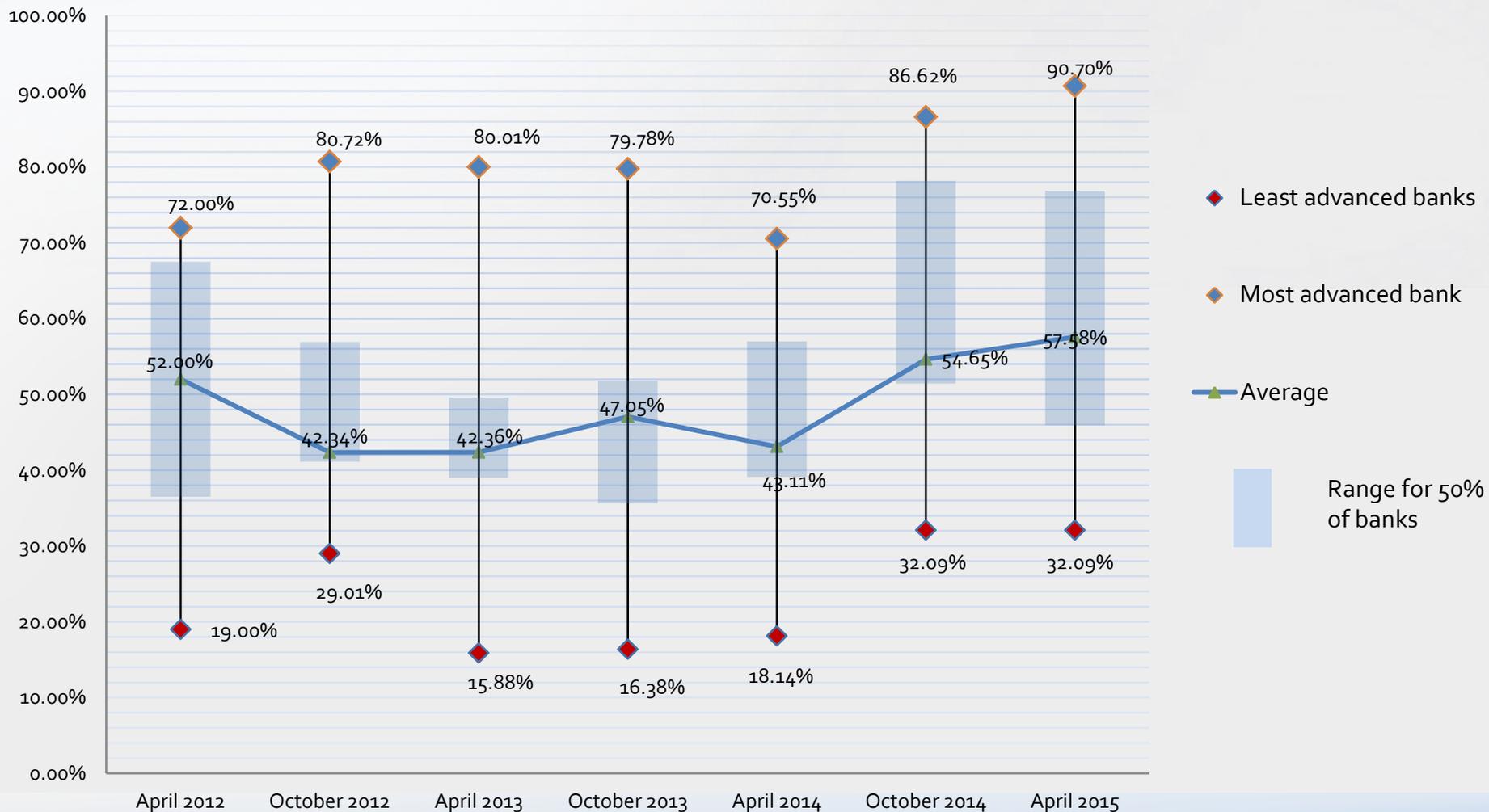
Enhancing online card payments security (3)

3D-Secure failure rates



Enhancing online card payments security (4)

e-merchants 3D-Secure equipment rate



Security of contactless card payments

- **Since 2007, the Observatory has regularly analyzed the security of contactless technology**
 - Remote activation // Eavesdropping
- **More a reputational risk than a financial one**
 - Transaction thresholds (number, amount of transactions, incl. cumulative)
 - Limited reuse of captured data
- **Recommendations issued to issuers:**
 - Deactivation mechanisms for the contactless interface (remote EMV scripts ; protective sleeves/shields)
 - Ability to issue contact-only cards on customer demand
- **First fraud figures gathered for 2014**
 - Origin of fraud: lost & stolen cards // Confirms the Observatory analysis & conclusions
 - Fraud rate between proximity payments and cash withdrawals