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Statistical Report on Payment Card Fraud

No. 2/2012

MINISTERO DELL'ECONOMIA E DELLE FINANZE

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MINISTRY OF ECONOMY AND FINANCE
DEPARTMENT OF THE TREASURY – SECTION V
CENTRAL MEANS OF PAYMENT ANTIFRAUD OFFICE

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(1 January 2011 – 31 December 2011)

INTRODUCTION

This Statistical Report on Payment Card Fraud No. 2/2012, referring to the figures for all of 2011, has been enriched to include new elements of analysis of the data collected from SIPAF (Sistema Informatizzato per la Prevenzione Amministrativa delle Frodi sulle carte di pagamento - the Electronic Payment Card Fraud Prevention System). Thanks to collaboration with the Italian Banking Association, the Report will also enjoy greater visibility outside of Italy, inasmuch as it is also to be translated into and published in English.

I would firstly like to emphasise the dedication shown to the project, which has allowed us to reach an excellent level of thematic depth of analysis of the dynamics of payment card fraud in Italy. I am convinced that the process on which we have embarked, with the full collaboration of all participants, in the analysis of the data systematically collected by SIPAF will yield highly satisfactory results for all those involved. Our excellent relationship of esteem, trust and understanding allowed us to share ideas, initiatives and concepts aimed at providing the end consumer and industry entities with an important tool aimed at better comprehending fraudulent phenomena perpetrated with payment cards. The Office's primary goal continues to be to increase the level of awareness and information among users and consumers and, most importantly, to provide incentives for the use of these cashless payment systems.

This edition also marks the inception of fruitful collaboration with the University of Molise's Information Technology Research and Teaching Centre (CADRI) and the Italian Criminology Laboratory, which we aim to develop in the future with the goal of obtaining knowledge and honing our ability to analyse the phenomena presented in the Report through a criminological approach to interpretation that is also suited to yielding solutions geared towards forecasting and/or preventing crime.

Understanding and interpreting such phenomena will allow us to obtain new interpretative elements applicable to criminal events, thus placing them within the context of the general dynamics of social change.

Despite lagging behind the other industrialised nations, Italy will achieve increasingly higher percentages of the use of cashless instruments, within the framework of a trend that, it should be emphasised, shows a percent incidence of the amount of fraudulent activity using payment cards, on an equivalent transaction basis, far below that of other European and non-European countries.

Francesco Carpenito

Director of the Central Means of Payment Antifraud Office

CHAPTER I

The Office's Activities

Within the context of its functions, the Department of the Treasury is divided into homogenous areas of activity, among which particular importance may be attached to the financial crimes prevention section (Section V).

UCAMP (Ufficio Centrale Antifrode dei Mezzi di Pagamento - the Central Means of Payment Antifraud Office) is the operational unit within the above section charged with the following tasks:

- monitoring the counterfeiting of the euro;
- preventing fraud involving the use of payment cards and consumer credit instruments; and
- training activity of a specialised nature at both the national and international levels, within its areas of responsibility.

The Office derives its origins from Regulation (EC) No. 1338/2001, which instituted the European system for protecting the euro. In this context, it acts as Italy's central office for the collection and exchange of data that permit the identification of counterfeit notes and coins through a technical description of the type of counterfeiting, as well as the conduct of a strategic analysis of the counterfeiting phenomenon with the aim of assessing its impact on the economic and financial system.

By virtue of Italian Law No. 166/2005, which instituted the Payment Card Fraud Prevention System, and the implementing regulation (Ministerial Decree No. 112/2007), the Office was attributed its current competencies in the field of the prevention, at an administrative level, of fraud involving the use of payment cards and other consumer credit instruments.

In implementation of the laws and regulations cited above, the Office was responsible for establishing the SIPAF (Sistema Informatizzato per la Prevenzione Amministrativa delle Frodi sulle carte di pagamento - the Electronic Payment Card Fraud Prevention System), which allows data and information regarding suspect merchants and failed transactions to be consulted and shared in real time. In this context, a working group with advisory functions (GIPAF – Gruppo di lavoro Interdisciplinare per la Prevenzione Amministrativa

delle Frodi sulle carte di pagamento – Interdisciplinary Working Group for the Administrative Prevention of Frauds on Payment Cards) was established. Participants in this working group include fraud experts designated by government administrations, the Bank of Italy, the Italian Banking Association, law enforcement agencies and the reporting companies.

In the payment cards area, the Office's operational strategy is characterised by creating and managing a prevention system aimed at protecting both the banking system and issuing companies, on the one hand, and citizens who place their trust in cashless payment instruments, on the other.

It will be appropriate to mention that for the euro area the Office is equipped with an electronic system known as SIRFE (Sistema Informatizzato Rilevazione Falsificazioni Euro - the Electronic Euro Anti-Counterfeiting System), which allows the remote transmission of reports documenting the seizure of notes suspected of being counterfeit.

Finally, the Office promotes and coordinates training activities at a national and international level relating in particular in relation to the counterfeiting of the euro. It has organised a number of seminars and workshops addressed to all categories involved in the currency counterfeiting phenomenon in implementation of the Community training programme named "Pericles." In addition, in 2009 the Office launched a broader training programme in collaboration with local administrations aimed at raising awareness among operators and citizens and providing information useful to prevention in the complex world of fraud.

CHAPTER II

The SIPAF System

SIPAF (Sistema Informatizzato per la Prevenzione Amministrativa delle Frodi sulle carte di pagamento - the Electronic Payment Card Fraud Prevention System) was instituted within the Ministry of Economy and Finance by virtue of Italian Law No. 166 of 17 August 2005.

The entities that contribute to the Database are designated "reporting entities". In detail, these include the companies, banks and financial intermediaries that issue payment cards and manage commercial networks for the acceptance of such cards.

The electronic Database collects:

- data identifying the points of sale and legal representatives of merchants in relation to which the right to revoke the agreement governing the acceptance of payment cards has been exercised for security reasons or due to fraudulent conduct reported to the judicial authority;
- data identifying any contracts renewing the agreement;
- data identifying transactions not recognised by the holders of the payment cards or reported by them to the judicial authority; and
- data identifying automatic teller machines (ATMs) subject to fraudulent tampering.

The SIPAF Database consists of two sections, the Data segment and the Information segment.

The Data segment is used to manage reports of events involving well-established, objective facts that have already occurred with respect to points of sale in relation to which agreements governing the acceptance of payment cards have been revoked, points of sale that have renewed such agreements, transactions not recognised by payment card holders and automatic teller machines that have been subject to tampering.

In further detail, the Data segment consists of:

- elements identifying the reporting company and the date of the report;

- elements identifying the points of sale in relation to which the right of revocation has been exercised;
- elements identifying unrecognised transactions;
- elements identifying the points of sale whose merchants have entered into contracts renewing the agreement; and
- elements identifying the automatic teller machines that have been subject to tampering.

The Information segment is used to manage reports of events involving facts that have not yet been firmly established and are subject to monitoring by the reporting entities in relation to potential suspicions of ongoing fraud.

The Information segment allows:

- suspected/presumed points of compromise to be identified;
- elements identifying points of sale subject to monitoring to be highlighted;
- points of acceptance to be identified;
- elements identifying payment cards subject to monitoring to be highlighted; and
- countries at risk of fraud to be identified.

CHAPTER III

Payment Card Transactions

3.1. Statutory profiles and economic incidence

Pursuant to art. 1, sec. II, of Italian Law No. 166 of 17 August 2005, payment cards are defined as all "those documents that are identified with credit cards, debit cards and the other cards laid down in implementing regulations".

Equipped with microchips, payment cards – among their other functions – allow their holders to be identified, purchases or withdrawals to be authorised and transaction data to be recorded without the need for access to a remote connection to the card's issuer. When a card is used, the user may be required to enter his or her personal identification number. Such cards exploit the calculation capacity of the microprocessor contained within them.

According to the prevailing legal theory, the transactional relationship between issuer and payment card holder is to be regarded as falling within the scheme typical of contracts governing the granting of bank credit, governed by art. 1842 of the Italian Civil Code, namely "*the contract whereby a bank obligates to keep a sum of money available for the other party for a given period of time or an indefinite period*".

There are two main categories of payment cards:

- debit cards: these are instruments that enable their holders – pursuant to a contractual relationship with the issuer – to undertake purchases of goods or services or withdrawals of cash, with each transaction debited to the payment account associated with the card, from merchants acting as points of acceptance for the issuer, as well as through POS terminals and automatic teller machines (ATMs);

- credit cards: these are instruments that enable their holders – pursuant to a contractual relationship with the issuer – to undertake purchases of goods or services or withdrawals of cash, with deferred payment, from all merchants acting as points of acceptance for the issuer of the card. They are issued by banks, financial intermediaries (travel and entertainment – T&E – cards) or directly by suppliers of goods and services (fidelity cards). In this latter case, cards may only be used for the payment of purchases at the issuer itself.

CARD TYPE	DEBITING OF CHARGE
Debit cards	Simultaneous
Credit cards	Deferred
Prepaid cards	In advance

The main circuits through which payment cards may be used are as follows:

- branches (traditional channel): within bank branches, payment orders are submitted in print form (or sometimes magnetic form);

- ATMs (automated teller machines): these are systems for the automatic withdrawal of cash from one's bank payment account through remotely connected "distributors" that are functional even outside the business hours of financial institutions and in locations other than the branches of the bank with which one's account is held. The most advanced ATMs also allow additional activities to be undertaken (balance consultation, list of movements, securities position, top-ups of prepaid services, top-ups of telephone credit, payment of TV annual tax, payment of fines and depositing of cash and cheques);

- the POS (point of sale) system: this term refers to devices used by merchants that allow the acceptance of payments by means of credit, debit and prepaid cards. Such devices are connected with the processing centre of the bank or group of banks that offer the service so that the associated debiting of the current account of the authorised party (in real time or on a deferred basis) and the crediting of the merchant's payment account may be authorised and executed;

- the CBI (Customer to Business Interaction) consortium: provided under ABI's coordination, this remote interbank service allows enterprises and public administrations to work with one another, through their computers, enjoying access to the services of all banks with which they have relationships;

- Internet banking (also known as home banking or online banking): the customers of financial institutions undertake banking transactions via a remote connection to their banks by means of a computer network and through specific mobile payments/phone banking portals. Customers access banking services via the (fixed-line and mobile) telephone network and, typically, the use of IVR (interactive voice response) systems and call centre operators;

- multimedia kiosks: these have been introduced into the banking system and made available at bank branches as new tools capable of providing additional services, such as inquiries regarding account balances and movements, the completion and printing of forms pertaining to major banking transactions and the obtainment of information concerning the main products available.

In the case of debit cards, payment is made via direct debit of the cardholder's current account. Consequently, the cardholder is first required to enter his or her PIN in order for the transaction request to be authorised by the issuing bank.

By contrast, in the case of credit cards, payment is deferred with respect to the transaction, and the cardholder is generally not required to enter a PIN, but rather to sign the payment receipt in a manner consistent with the signature presented on the reverse of the card. In the case of online transactions, cardholders are required to enter the security code printed on the card.

Credit cards are issued both by banks and financial intermediaries registered in the special register maintained by the Bank of Italy following the signing of a specific contract between issuer and client after a review of the applicant's solvency has been completed. Generally, the use of a credit card is limited to a maximum spending ceiling (credit limit).

Credit cards are thus instruments of payment on a deferred basis with respect to the transaction. The plastic card is required to include: the cardholder's name and signature, the identification number and the expiry date. The fundamental requirements for obtaining a credit card are being of the age of majority and possessing a payment account.

The expenses associated with the use of a credit card are generally borne by the cardholder or, in some cases, by the accepting merchant.

There are two categories of credit card, depending on the issuing entity:

- bank credit cards: these are issued by banks and specialised companies in partnership with banks; and
- non-bank credit cards: these are issued by companies other than banks.

In recent years, co-branding credit cards have enjoyed a certain degree of popularity. Such cards are issued by a banking or non-banking entity in partnership with a large retailer.

The various types of payment instruments also include corporate or company credit cards issued to company owners or employees upon a company's request. In this case, the magnetic stripe identifies card as registered to both the company and the individual to whom it has been issued. The associated debits are applied to the company's current account in order to cover both annual participation fees and the monthly expenditures undertaken by individual cardholders.

The Bank of Italy identifies three types of credit cards:

- charge credit cards, whereby the cardholder settles the expenditures undertaken via the card in a single instalment, in a monthly debit;

- revolving credit cards, whereby the cardholder repays expenditures in monthly instalments, plus interest; and
- optional credit cards, which may be used in either charge or revolving mode.

The Bank of Italy has found that charge cards are primarily used as an alternative to debit cards, whereas revolving cards represent a form of consumer credit.

At present, SIPAF records data regarding charge credit cards and debit cards.

Another type of payment card that may be identified is the prepaid or rechargeable card. This type of card is not linked by a payment account, but rather is simply topped up by the desired amount. It provides both purchase and withdrawal functionality.

Fraud involving prepaid payment cards is also recorded by SIPAF.

A transaction undertaken by means of a payment card, whether in the form of a purchase or a cash withdrawal, presupposes interaction between the following actors:

- the payment card holder;
- the participating merchant from which the cardholder undertakes the purchase or withdrawal;
- the issuer, i.e. the financial institution that issues the payment card and manages the relationship with the cardholder, guaranteeing the acquirer proper execution of payments undertaken with its cards; and
- the acquirer, i.e. the financial institution that has acquired the merchant for the acceptance of a given payment card.

Credit cards rely upon a trilateral transaction scheme (with the participation of three parties in agreement), inasmuch as the intended results cannot be achieved without the intervention of a third party that in the exchange performs the twofold task of disbursing the amount owed to the supplier and granting the holder deferred payment of the price.

This type of card is not to be confused with cards based on a bilateral configuration issued to the holder by the supplier of the goods and/or services.

The essential elements of the transaction include the cardholder's obligation to repay the issuing institution the amount of the expenditures undertaken during the period, as recorded and reported to the cardholder in an account statement (which the cardholder can pay in a single or multiple instalments, according to the plan contained in the contract associated with the issuance of the card).

Consequently, it is only with the choice of the second alternative (deferral of the payment of the price) that a card is transformed into a credit instrument. The contracts entered into between the issuer and supplier, and between the issuer and cardholder upon

issuance are independent of any credit function, inasmuch as they aim solely to govern the particular aspect of the debt to the supplier.

The issuer grants credit to the cardholder upon the debtor's expression of the desire to repay the amounts he or she owes on a instalment basis, without the need for further acceptance by the bank.

Credit cards are not credit instruments, inasmuch as, among other considerations, they do not meet the essential requirement of the transferability of the right. Precise contractual clauses specify that such cards are strictly non-transferable, inasmuch as they remain the property of the issuer and are only temporarily entrusted to the custody of the cardholder, who assumes responsibility for safekeeping.

Through the customary payment card usage procedure, by entering his or her PIN the cardholder initiates the automated transaction operation that is carried out via the POS terminal made available to merchants, so as to allow the transfer of funds from the cardholder to the seller.

There are three essential steps in this transaction procedure:

- authorisation: there is a request to authorise the charge by the merchant equipped with a POS submitted to the acquirer, which acts as a remote connection between merchants and payment schemes. The acquirer in turn requests authorisation to undertake the payment from the company that issued the card. This company may be a bank or an independent issuer. If the acquirer and issuer coincide (three-part scheme), the authorisation request is submitted directly to the issuer;

- clearing: during this phase, data concerning the transaction (the card's details, along with information about the order) is exchanged between the merchant and acquirer. The acquirer processes these and sends them to the issuer. In the three-part scheme, the data are transmitted directly to the issuer; and

- accounting settlement: the issuer debits the funds to the cardholder's current account and transfers them to the acquirer. Finally, the acquirer pays the merchant. In the three-part scheme, the transfer is undertaken directly by the issuer to the merchant.

In addition to this typical payment procedure, there is the possibility of defining transactions in offline authorisation mode, whereby the acquirer directly authorises the transactions without requesting authorisation from the issuer (e.g., Fastpay circuit).

Internet transactions may be undertaken with credit cards and prepaid cards by entering the card number and the security code printed on the card. The payment schemes (three-part or four-part) and the clearing and settlement methods are the same as in the case of

proximity payments that are undertaken where the merchant and buyer are in the same physical location at the time of the transaction.

According to the most recent data published by the Bank of Italy[1], in 2011 there were 68 payment transactions per inhabitant made with of cashless instruments, compared to the average of 182 recorded in euro area nations in 2010.

NON-CASH PAYMENT SYSTEMS

Number of transactions per capita with cashless instruments

COUNTRIES	Total	Cheques	Credit transfers	Debits	Payment card transactions
Italy - 2011	68	4.85	20.8	14.6	28.3
Euro Area - 2010	182	11.7	49.1	55.9	65.6
EU 27 - 2010	173	10	47.9	44.7	70.2

Source: ECB and Bank of Italy, 2011.

The thorough analysis conducted by the Bank of Italy draws attention to the fact that, owing to the relatively high use of cash, intensive reliance is made upon electronic devices to obtain bank notes. In 2011, there was an increase in the number of withdrawals from bank and postal ATMs (0.9%), and the average amount of such withdrawals climbed to €181 per transaction, a figure well in excess of the European average (€125 for the euro area and €109 for the EU). The number of POS transactions increased by 2.5%, and the average amount of such transactions climbed to €77.

Among the major structural changes within the retail payments market, increasing relevance may be attributed to the rise in transactions via open networks (e.g., the Internet), although the number of such transactions – 280 million in 2011 – still amounts to just 7% of transactions involving cashless instruments.

The number of transactions undertaken via the Internet with credit and prepaid cards increased by 27.6%, whereas the number of online bank transfers increased by 20.3%. An analysis conducted at a geographical level through bank reports has shown that the

[1] Bank of Italy, *2011 Annual Report,* presented on 31 May 2012, pp. 278 *et seq*.

share of payment transactions settled over the Internet is positively affected by income and education levels as well as the yield conditions offered by the current accounts.

Of extreme importance for the purposes of this analysis is the figure concerning the number of transactions per capita undertaken via payment cards in Italy, which tends to increase significantly in close connection with the improvement in the security conditions of such instruments. These conditions are measured on the basis of the degree of migration to microchip use and the share of cards frozen following controls performed to protect users. The same effect is achieved by the offering of services providing immediate notification of customers of card use (SMS alerts), thus allowing timely intervention in the event of anomalies.

According to analyses by experts and the intentions of Community governments, the use of payment cards is destined to spread further within the countries participating in the Single Euro Payments Area (SEPA), in line with the provisions of the Payment Services Directive (Directive 2007/64/EC, transposed into Italian law by Legislative Decree No. 11/2010).

In fact, the Community Directive sets three general goals:

- stimulate competition between payment service providers and national markets by introducing the right to supply payment services to the public for a new class of providers, payment institutions (such as telephone companies, large retailers, etc.), removing barriers to market entry and guaranteeing a fair competitive arena;
- establish a simple, harmonised set of rules governing disclosure requirements, obligations and rights associated with the use and supply of payment services; and
- standardise rights and obligations for both payment service providers and users, ensuring a high level of protection and safeguarding of the client.

In particular, the PSD governs:

- access to the payment services market;
- transparency of conditions for payment services; and
- requirements for the provision of payment services.

In this context, SEPA (the Single Euro Payments Area) aims to foster the harmonisation of payment systems in euro area nations by eliminating all differences between national

payments and payments within the Community in order to render them subject without distinction to common rules, with particular regard to credit transfers, direct debits, credit cards and debit cards[2].

At an operational level, the payment instruments currently involved in the objectives pursued by SEPA are:

- SEPA credit transfers – effective 1/2008;
- SEPA direct debits – effective 11/2009;
  - > SEPA core direct debits;
  - > SEPA B2B (business to business) direct debits;
- SEPA cards framework – effective 2011; and
- Single euro cash area – effective 2008.

Payments and withdrawals undertaken with cards in the SEPA area (SEPA Cards Framework) are governed by a series of general principles of reference set by the European Payments Council (EPC).

The characteristics of SEPA payments using magnetic cards are thus as follows:

- cardholders and merchants may undertake and receive payments using cards in the entire euro area according to common criteria;
- payments and withdrawals using cards are processed and managed according to uniform technical standards; and
- card issuers are able to compete with one another and offer their services throughout the euro area, rendering the card-based payment processing more competitive, reliable and efficient from a cost standpoint.

3.2. Migration to microchips

According to the Italian Banking Association, it is of fundamental importance to complete the migration process to microchip-based payment cards because microchip technology is much more secure than the magnetic band technology previously used, and thus

[2]On this subject, see Mancini M., Perassi M., "*Il nuovo quadro normativo dei servizi di pagamento*. *Prime riflessioni*," in Quaderni di ricerca giuridica, Bank of Italy, Rome, no. 63, December 2008.

contributes to minimising fraud in the event of loss, theft or counterfeiting. In addition, microchips allow a greater quantity of data to be stored than magnetic strips, leaving room for countless future implementations.

The SEPA Cards Framework (SCF) is the document that governs a series of general principles of reference set by the EPC relating to payments and withdrawals undertaken with cards in the SEPA Area. These principles represent a framework of reference for the evolution of national and international systems towards SEPA in the context of self-regulation. The SCF has imposed full migration to microchip technology of cards, POS terminals and ATMs, and the Consorzio Bancomat, in the capacity of operator of the Bancomat and Pagobancomat schemes, and inasmuch deemed SCF-compliant schemes, is required to comply with such obligations.

The most recent available data indicate that the migration to microchip technology has reached the following levels: ATMs: 95.1%, POS terminals: 97.3% and debit cards (Bancomat and Pagobancomat circuits): 96%.

CHAPTER IV

Payment Card Fraud: Criminological Profiles

SIPAF's electronic archive is capable of real-time recording of reports of fraud perpetrated through the unauthorised use of debit and credit cards, defined as:

"*any illicit use, counterfeiting or alteration of a payment card unknown to the cardholder that entails the repudiation by the cardholder of a transaction that has been debited, as well as tampering with an automatic teller machine or illicit use of POS terminals in order to be able to use a payment card fraudulently.*"

The SIPAF system distinguishes between the following types of payment card fraud:

a) Card stolen

This category envisages the theft of a payment card or its unauthorised use by a party other than the cardholder. In this case, the theft of the card may occur in various ways, including trapping the card in an ATM or physical theft of the card. The final purpose of the action always remains that of undertaking transactions to the detriment of the cardholder.

The illicit use of the card generally occurs immediately after the theft, often before the legitimate cardholder becomes aware of the theft and before the card has been ordered frozen. The theft seeks to undertake transactions for large amounts in locations near the place of acquisition.

The articles of greatest value (luxury goods, jewellery, furnishings, motor vehicles, etc.) are the preferred targets for purchase using stolen payment cards.

b) Card lost

This category refers to cases of the illicit use of payment cards found after being misplaced by the legitimate cardholders. The difference with respect to theft lies in the fact that the illicit action derives from the accidental misplacement of the card and not its voluntary theft.

From a criminological standpoint, the typical methods of action in the case of unauthorised use of a lost card are highly similar to those in the case of theft.

c) Counterfeit card

This category involves a material change to a payment card aimed at recording, transferring, cloning, altering or replacing the data contained in the card in order to permit illicit transactions either concurrently or subsequently.

In such circumstances, it is customary to use the term "plastic fraud," so as to distinguish this type of criminal conduct from fraud perpetrated "without" direct use of the payment card (card-not-present fraud).

In the context of the criminological literature, it is habitual to include a number of criminal practices in this category, including[3]:

- *physical carding*: material falsification of a payment card by creating a new false card, either in its entirety or the magnetic strip only;
- *re-encoding*: the illicit replacement of payment card data effected by adding, replacing or deleting the information contained in a card;
- *skimming*: the illicit use of electronic payment card code readers (skimmers) that allow the decryption of the data stored on the magnetic strip and the acquisition of the cardholder's personal details (e.g. name and surname, address, telephone number, card number and credit limit), enabling transactions with credit or debit cards at ATMs or POS terminals. This type of fraudulent behaviour involves tampering with such devices or, in other cases, replacing the original skimmer with another device especially installed with the specific intent or fostering the illicit acquisition of payment card data. The fraudulent acquisition of data typically takes place during the transmission of such data when a purchase is made from a merchant. In such circumstances, the skimmer is connected to the telephone line, between the telephone socket and the credit card reader, and the information acquired or transmitted through Bluetooth technology is stored on "virgin" cards or made available for manipulation for other illicit purposes at later time. In other cases, the perpetrators of such offences make use of portable skimmers that are used to "swipe" the payment card twice, once through the reader generally used by the merchant and then again through this unlawful device intended to obtain information to be used illicitly. In both cases, the theft of payment card codes

[3]On this subject, see F. Di Resta (editor), Insidie telematiche. Frodi e sicurezza, Giappichelli, Turin, 2010, pp. 157 *et seq*. and T. Malagò-M. Mignone, Le frodi con carte di credito. Rischi e limiti del commercio elettronico, Franco Angeli, Milan, 2001.

takes place on the premises of merchants or in other contexts in which cards are ordinarily used, with the result that victims of skimming quite frequently do not immediately become aware of the fraud perpetrated against them;

- *shoulder-surfing*: the acquisition of payment card secret codes through hidden miniature cameras.

The most common techniques used to "capture" secret codes include:

- placing a small skimmer over the card reader slot;
- placing a false panel above the section containing the PIN pad next to the screen, completely replacing the pad;
- placing a skimmer in the card reader used to open a door to an area that permits access to an ATM; and
- placing a skimmer next to an original card reader, with instructions to "insert your card here". This technique is not very common in Europe.

d) Card not received

This category refers to cases in which the payment card is intercepted and stolen during the period from when it is sent by the issuer until when it is received by the legitimate cardholder at his or her postal address. In fact, it is still common practice to use ordinary mail to deliver payment cards. In the criminological literature, this particular method of commission of fraud is termed "boxing".

e) Fraudulent use of code associated with issued card

This category refers to the use of the secret code associated with a card, following its illicit acquisition in various ways, without any material action affecting the magnetic card.

This specific category does not include cases of unauthorised use of payment cards over the Internet, which are recorded separately.

In fact, an increasing number of economic and financial transactions do not require the physical presence of the cardholder and are undertaken via telephone or fax.

The various criminal practices that allow the secret codes associated with payment cards to be "captured" without any direct material action affecting the magnetic card, include:

- *sniffing:* the interception of data that pass through a remote network through software programmes capable of analysing and storing the content of the packets that are exchanged during communication between two network

entities ("packet-sniffing"). Some authors refer to sniffing using the different term "eavesdropping";

- *key-logging:* interception of data entered via a computer keyboard in real time, and thus before any cryptographic systems can be activated. Both hardware and software systems are used to permit codes to be "captured." However, the unlawful access to the computer system required in the case of tampering with hardware makes criminal conduct of this kind more complex and less frequent. By contrast, it is a much more common practice to transmit key-logging software that allows for simultaneous remote attacks against a very large number of computers. Where the intercepted data are attributable not to the use of computer keyboards but codes typed via ATM monitors, the specific term used is "*screen-grabbing*";

- *man-in-the-middle:* the rerouting of data transmitted through two hosts connected to the same network to a third host that illicitly intercepts the flow of information, thus acquiring and analysing all network traffic, including secret payment card codes;

- *social-engineering:* the fraudulent acquisition of payment card information exploiting the legitimate cardholder's good faith, desire to be helpful and ingenuity. In many cases, the perpetrator of the fraud contacts the victim directly, pretending to be a bank employee and requesting the secret code associated with the payment card in order to allow the computer system to be updated or to solve a non-existent technical problem;

- *phishing:* fraudulent acquisition of credit card data through false electronic mail messages addressed to the legitimate cardholder with the aim of causing him or her directly to reveal the codes for the use of the payment instrument. Where the perpetrator's contact with the victim takes place not through e-mail but rather telephone SMS text messages, the specific term is "*smishing*" (*SMS phishing*). The expression "*vishing*" (*voice phishing*) is instead used to refer to the data acquisition technique that exploits the telephone line over a VoIP channel (Voice over Internet Protocol, a digital technology that allows voice packets to be sent over the Internet or an intranet, extranet or VPN), thanks to which it is easier for perpetrators to disguise their caller IDs, thus misleading the victim into believing that they are calling from a telephone number that actually belongs to the company that issued the payment card;

- *trashing:* the acquisition of payment card data by selecting information obtainable from the waste discarded by individuals or merchants (purchase receipts, accounting documentation, receipts from banking tellers or counters, etc.), in some cases processed with the aim of special computer software allowing the victim's full profile to be reconstructed;

- *illegal conduct by employees of banks, issuers or merchants*: the dissemination of confidential data concerning payment cards by persons who, owing to their professional activities, enjoy free access to such data ("insiders"); and

- *mathematical carding*: although very rate in practice, criminal science contemplates the possibility that payment card details may be reproduced illicitly through sophisticated computer programmes that allow the reproduction of the algorithms used to assign PIN codes;

f) Card used with false identity

This category refers to cases in which a cardholder's personal information is fraudulently used to access an account in the cardholder's name or to open such an account in other to obtain other payment cards ("*identity theft*"). The following two main schemes are found to apply in this type of fraud:

- a debit card or a credit card is used to undertake unauthorised purchases by fraudulently assuming the legitimate cardholder's identity, either via the Internet or on the premises of merchants; and

- the theft of the identity of a payment card holder is used to obtain a new payment card or the disbursal of cash advances to procure additional benefits by using the card, for example, to authorise the debiting of payments;

This category may be considered to include cases of what is known as "*account take-over*", which is regarded to occur when payment card data are acquired following fraud perpetrated against the issuer, which the perpetrator contacts, initially giving notice of a false change of residence. Thereafter, the perpetrator reports the theft or loss of the card to the issuer and requests that a new card be sent to the false address.

In legislative action that is also destined to have an indirect impact on the repression of payment card fraud, Legislative Decree No. 64 of 11 April 2011, amending Legislative Decree No. 141/2010, was introduced. It created an effective "public system of prevention, on an administrative level, of fraud in the consumer credit sector, with specific reference to identity theft".

The new legislative framework envisages a twofold definition of identity theft, understood as:

- total impersonation: total concealment of one's identity by means of unauthorised use of data relating to another party's identity and income. Impersonation may pertain to the unauthorised use of data relating to either a living party (as generally occurs in the case of payment card fraud) or a decreased party; and

- partial impersonation: partial concealment of one's identity by means of combined use of data relating to one's own identity and unauthorised use of data relating to another party.

g) Fraudulent use of card on the Internet

This specific type of behaviour takes account of the specific context of the Internet in which illicit use of payment cards frequently occurs.

Where the merchant is not involved in tampering with the device, the record of the method of perpetration of the fraud is entered into the information segment of the SIPAF Archive.

By contrast, where there is found to be connivance on the part of the business owner in tampering with the POS terminal, the criminal conduct is recorded in the SIPAF Archive in the form of a detail record in the "revoked points of sale" data segment concerning merchants whose licences to receive payments by means of POS terminal have been revoked.

In further detail, reporting entities are asked to specify the grounds for revocation, which may pertain to:

- generic security reasons;
- participation by the merchant in activities that the reporting company regards as suspect on the basis of the audits, controls or inquiries conducted;
- designation of the point of sale as a "suspected point of compromise" on the basis of the audits, controls or inquiries conducted by the reporting company. Points of compromise (PoCs) refer to ATMs and POS terminals at which cards that are then found to have been cloned are used during a given period of time. A point of sale is regarded as a "suspected point of compromise" when a single issuer has notified the reporting company that at least three payment cards issued by that same issuer have been fraudulently used in the two months following a regular transaction conducted at that point of sale, although the legitimate cardholders were in material possession of their cards on the date of execution of the fraudulent transactions; and
- receipt of notification from other companies that issue or manage payment circuits regarding negligence or wilful breach by the merchant of the provisions governing the acceptance of cards for payment.

At the moment the service is provided, the merchant is required to comply with certain principles of integrity and diligence that ensure that the contract of exchange between the parties involved is fulfilled. In the case of payments by credit card, mere presentation of a card is not sufficient to undertake a transaction;

rather, it remains contingent upon certain conditions that the merchant is required to verify:

- the card may only be used during the period of validity printed on the card itself (in any event, if a card has expired the POS terminal will not allow the payment transaction to be completed);
- revocation of the card; and
- the signature signed by the cardholder to the receipt that records the payment must match the signature presented on the credit card.

Failure to comply with these prescriptions is expressly sanctioned by contractual provisions in cases in which the participating merchant has accepted cards that he/sheought to have recognised as being invalid.

The advent of normal POS terminals has allowed merchants to conduct automatic controls of cards not to be accepted.

Disqualification of a point of sale thus occurs when it is found that serious causes of fraud have been committed involving the use of the PIN code for a card by disloyal personnel tampering with the POS terminal. Such conduct authorises the banks or companies that manage the POS terminals to request the suspension or termination of the agreement with the merchant that permits electronic payments to be undertaken using cashless payment instruments.

CHAPTER V

Payment Card Fraud: Criminal Profiles

The illicit use of credit cards or payment cards is liable to criminal prosecution and punished under Italian law pursuant to art. 55, par. 9, of Legislative Decree No. 231 of 21 November 2007, which stands in legal continuity ([4]) with the repealed art. 12 of Law Decree No. 143 of 3 May 1991, enacted, with amendments, by Law No. 197 of 5 July 1991.

In particular, art. 55, par. 9, of Legislative Decree No. 231/2007 distinguishes three different types of criminally liable behaviour, attributable to an action taken by a person who, in order to derive profit from such action for himself or others:

a) makes unauthorised use – inasmuch as he is not the legitimate holder – of a credit card or payment card, or any other similar document that enables the withdrawal of cash or the purchase of goods or services;

b) counterfeits or alters a credit card or payment card, or any other similar document that enables the withdrawal of cash or the purchase of goods or services; or

c) possesses, transfers or acquires such cards or documents of illicit provenance, or that have otherwise been counterfeited or altered, or payment orders generated with such cards or documents.

The foregoing offences are punished with incarceration for one to five years and a fine of €310 to €1,550.

The categories of payment card fraud defined by criminal law thus bear different connotations in their typical forms.

[4]Criminal Court of Cassation, Section II, 29 May 2009, no. 24527.

The unauthorised use of a payment card refers to the conduct of a person who, inasmuch as he not the card's legitimate holder, makes illicit use of the card to secure a profit for himself or others, after having fraudulently come into possession of the card. The criminal statute punishes the mere use of a payment card, with the specific intent of securing profit for oneself or others[5], regardless of whether the criminal result desired by the agent is effectively achieved[6]. The offence is thus consummated when illegal use is made of the payment card at its functional destination (purchase of goods, withdrawal from an ATM, etc.).

Legal doctrine is in agreement that such criminal conduct may also be ascribed to a person who, following the termination of his contractual relationship with an issuer, no longer has any standing to make legitimate use of a payment card not returned to the issuer. In this regard, there is a tendency to hold that the use of a card is also to be regarded as unauthorised when the prescriptions and conditions of use of the payment instrument established by the issuer or distributor have been violated[7].

In case law, there is also agreement that the cardholder has valid standing to make use of a card if and only if the contractual relationship that resulted in the granting of the card and authorised the use of that card is still in effect. Consequently, if the issuer of a card has revoked the card, the person to whom the card had been issued is deprived of the status of cardholder, and thus of the ensuing right to use the card as soon as he becomes aware that the card has been revoked[8]. Therefore, in this case as well, further use of the card constitutes commission of the offence punished under art. 55, par. 9, of Legislative Decree No. 231/2007.

This interpretation advanced by case law attaches considerable importance to the dysfunction of the contractual relationship that binds the holder of the document to the manager of the service, with the consequence that criminal liability also results from the actions of a person who makes use of an electronic card with fraudulent intent, in an awareness that the card has been suspended, has expired, or has been revoked by the issuer. The title that constitutes justification in the eyes of penal law is not that of a formal nature resulting from the registration or mere possession of the document, but rather is of a substantial, actual nature. It is understood that, in such a case, it must be

[5] Criminal Court of Cassation, Section V, 15 June 2000, no. 8950.

[6] Criminal Court of Cassation, Section I, 8 March 2006, no. 11937.

[7] In this respect, refer to the still entirely valid observations of Corrias Lucente G., "*I reati in materia di carte di credito nella legge 5 luglio 1991, n. 197*," in Diritto dell'Informazione e dell'Informatica, no. 3, 1991, note 2, p. 763.

[8] Criminal Court of Cassation, Section I, 9 April 2003, no. 19530.

determined, from a subjective standpoint, that the perpetrator was fully aware of cancellation or revocation of his authorisation to use the electronic document[9].

The use of a lost payment card obtained in violation of art. 927 of the Italian Civil Code, which imposes an obligation to return the lost property to its owner or deliver it to the mayor, constitutes commission of the offence concerned.

The counterfeiting of an electronic card is regarded as having been committed when the perpetrator unlawfully creates a new magnetic trip (*cloning* or *physical carding*) to be used to undertake commercial transactions or withdrawals from ATMs.

By contrast, the alteration of a payment card is regarded as having been committed when the perpetrator manipulates an original card of which he has come into possession, modifying the registration or the data stored on the magnetic strip in order to gain access to the services enabled by the transaction instrument.

Given the absence from the statute of the parenthetic clause "*inasmuch as he is not the cardholder*" present in the first part of art. 55, par. 9, of Legislative Decree No. 231/2007, the typical act of counterfeiting or altering a payment card may also be considered to have been committed when the person responsible for such manipulation is the legitimate holder of the card. The prerequisite of specific intent circumscribes the scope of application of the statute to conduct of a more dangerous nature, inasmuch as it is inspired by the aim of using a counterfeit or altered card at a later time.

In the lawmakers' intentions, the acts of illicitly possessing, transferring or obtaining payment cards include all possible manners of transfer of cards and documents, whether with or without remuneration. The criminalisation of illicit possession of a payment card is aimed at shifting forward the threshold of criminality of the criminal act to a moment prior and preliminary to the use of the card as a payment instrument.

The aim pursued by lawmakers in the penal regime laid down in art. 55, par. 9, of Legislative Decree No. 231/2007 is to safeguard the legal interest in the public faith, property and trust that arises from the use of cashless payment instruments, and therefore of credit cards and similar documents, which must meet the requirements of authenticity, security and reliability.

From this standpoint, the incriminating provision is not inherently aimed at punishing the dysfunction of the contractual relationship; rather, it is more specifically intended to

[9]Criminal Court of Cassation, Section V, 28 November 1997, no. 1456.

ensure that cards are used, directly or indirectly, only by their legitimate holders, and that such documents are not counterfeited or altered[10].

It is not always easy to distinguish between the relationship existing between the perpetration of fraud in the use of payment cards punishable under art. 55, par. 9, of Legislative Decree No. 231/2007 from the other offences envisaged within the Italian penal system. In this regard, it is necessary to give due consideration to the profiles of speciality that, pursuant to art. 15 of the Italian Penal Code, distinguish individual incriminating provisions from that particular case of fraud, so as to use the criteria established by case law to identify the concrete nature of the offence concerned.

Consequently, it is believed that the receipt of a credit or payment card, or any other similar document that enables the withdrawal of cash or the purchase of goods or services originating in a criminal offence, may more properly be regarded as constituting the offence of receipt of stolen property punishable under art. 648 of the Italian Penal Code, whereas the receipt of the foregoing documents of "illicit provenance" is to be considered as falling under the incriminating prevision of art. 55, par. 9, of Legislative Decree No. 231/2007 "*if the their provenance is not attributable to a major criminal offence, but rather a civil or administrative tort or minor criminal offence*[11]".

By contrast, in principle, the conduct of fraud proper, punishable under art. 640 of the Italian Penal Code, is to be considered subsumed into the offence of unauthorised use of payment cards, owing precisely to the principle of speciality, given that the adoption of trickery and deception that distinguishes the offence of fraud proper is in fact "*one of the possible methods whereby unauthorised use is made of a credit card*.[12]" On the other hand, as authoritatively reiterated by the United Sections of Italy's Supreme Court, the unauthorised use of payment cards subsumes the offence of fraud proper "*given the greater severity of the penalty and the anticipation of the threshold of criminality, regardless of the procurement of a profit and the occurrence of damages*[13]".

[10]Criminal Court of Cassation, Section V, 14 July 1994, no. 9780.

[11]Criminal Court of Cassation, Section VI, 16 July 2009, no. 35930. Similarly, Criminal Court of Cassation, United Sections, 28 March 2001, no. 22902.

[12]Criminal Court of Cassation, Section V, 12 December 2005, no. 6695. Contrast with Criminal Court of Cassation, Section I, 23 April 2004, no. 26300.

[13]Criminal Court of Cassation, United Sections, 28 March 2001, no. 22902.

By contrast, the following offences may be committed concurrently with the unauthorised use of a credit card, and therefore are liable to independent prosecution[14]:

- impersonation (art. 494 of the Italian Penal Code);
- unauthorised access to a computer or telecommunications system (art. 615-*ter* of the Italian Penal Code);
- unauthorised possession or distribution of access codes for computer or telecommunications systems (art. 615-*quater* of the Italian Penal Code);
- installation of devices intended to intercept telegraphic and telephonic communications (art. 617-*bis* of the Italian Penal Code);
- interception of computer communications or telecommunications (art. 617-*quater* of the Italian Penal Code);
- installation of devices intended to intercept computer communications and telecommunications (art. 617-*quinquies* of the Italian Penal Code); and
- computer fraud (art. 640-*ter* of the Italian Penal Code).

[14]Criminal Court of Cassation, Section V, 19 December 2003, no. 2672; Criminal Court of Cassation, Section II, 9 November 2007, no. 45207, Criminal Court of Cassation, Section V, 6 June 2003, no. 24816; on the independent commission of computer fraud, see Criminal Court of Cassation, Section II, 6 May 2011, no. 17748.

CHAPTER VI

Statistical Section

6.1. Unrecognised transactions

The value of unrecognised transactions has been compared to the total transaction value[15]. The result indicates the frequency (incidence) or non-recognition per each euro spent (transacted). The results are presented in Table 1. In 2011, the incidence stood at 0.0196%, down by 13.6% compared to 2010.

Unrecognised transactions

Cards issued in Italy

	1H 2010	2H 2010	1H 2010	2H 2011	2010	2011	% chg.
value	0,0246%	0,0209%	0,0228%	0,0166%	0,0227%	0,0196%	-13,6%
number	0,0138%	0,0142%	0,0147%	0,0096%	0,0140%	0,0121%	-14,0%

Table 1. Unrecognised transactions – half-yearly and annual figures – percent incidence with respect to total transaction volumes

In addition to the value, it is also useful to consider the number of transactions. In this case, the incidence indicates the frequency of unrecognised transactions. In 2011, the incidence by number stood at 0.0121%, approximately 40% less than by value. This means that the average value (in euro) of unrecognised transactions exceeds the average value of overall transactions by more than 60%[16]. The incidence by number observed in 2011 was down by 14% compared to 2010, as in the case of incidence by value. This

[15] The number and value of unrecognised transactions refer only to cards issued in Italy as on record in the SIPAF Archive, and resulting from elaboration of detailed information. The number and value of total transactions (recognised and unrecognised) have been supplied by the Bank of Italy at the levels of aggregation presented in the Report.

[16] The ratio of incidence by value to incidence by number is equal to the ratio of the average value of a single unrecognised transaction to the average value of a single transaction (recognised and unrecognised).

implies that the decrease in incidence by value is due to the change in the incidence by number and not a change in the average amount of unrecognised transactions with respect to the average amount of total transactions. At the half-yearly level, there was a significant decline in the last half-year in incidence by number, which fell from a range of fluctuation within the interval 0.014%-0.015% to 0.010%.

Unrecognised transactions

Cards issued in Italy

a – Value – Percent change compared to previous period

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Tot.
2010		-9,2%	14,9%	-8,3%	2,8%	-2,9%	-7,1%	-1,3%	23,6%	24,6%	-21,6%	11,8%	
2011	-21,9%	30,0%	13,5%	-19,4%	-7,7%	-18,7%	-5,6%	0,0%	6,4%	-1,6%	-16,3%	-7,4%	-11,8%

b – Number – Percent change compared to previous period

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Tot.
2010		-8,5%	4,3%	-18,1%	11,3%	-15,0%	-6,3%	-11,9%	26,4%	38,1%	-23,4%	14,8%	
2011	-26,5%	23,6%	18,7%	-14,7%	3,0%	-21,9%	4,0%	-8,9%	0,7%	0,2%	-7,7%	6,1%	-11,1%

c – Average value of a single transaction (euro)

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Tot.
2010	224	226	205	183	198	174	175	156	160	177	173	178	185
2011	168	159	167	176	197	189	208	190	179	183	202	231	184

Table 2. Unrecognised transactions – monthly figures – percent changes compared to the previous month and average transaction value (euro)

The monthly change in unrecognised transactions is illustrated in Table 2 and Figures 1-3. At an annual level, it may be observed that there was a decline in the absolute level of the value of unrecognised transactions of approximately 12% (2011 compared to 2010), approximately two percentage points less than that observed by incidence (Table 1). This was due to an increase of approximately two percentage points in the value of total transactions.

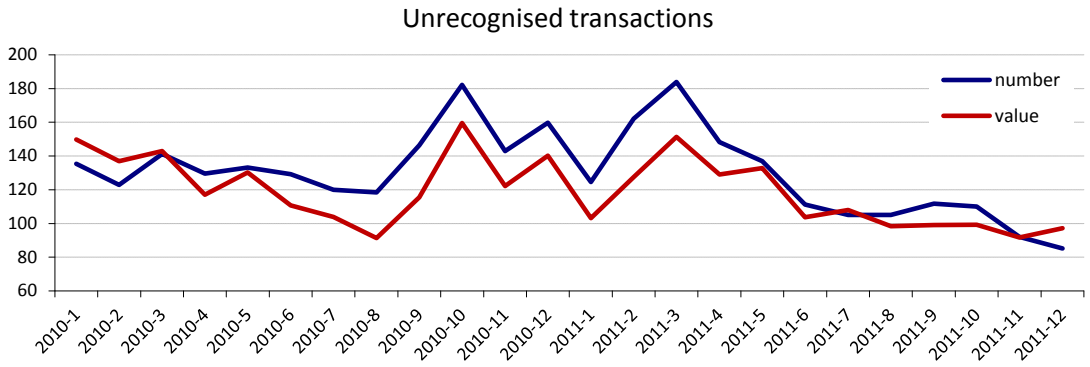


Figure 1. Unrecognised transactions – monthly figures – index number (2009-1=100)

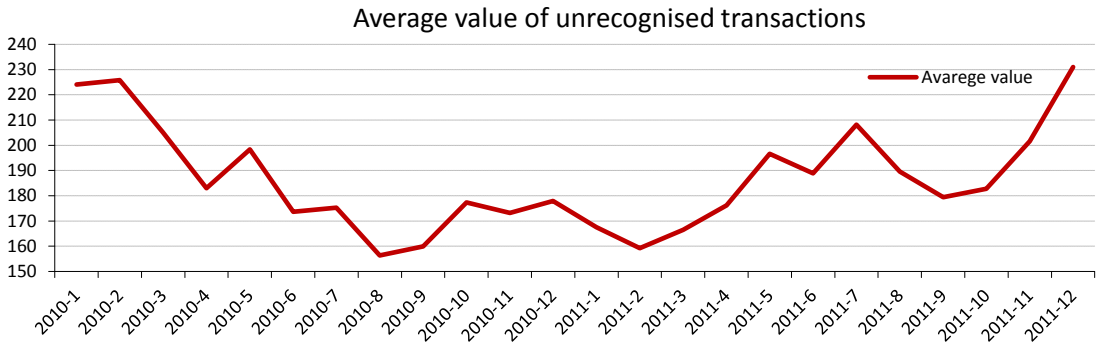


Figure 2. Unrecognised transactions – monthly figures – average value (euro)

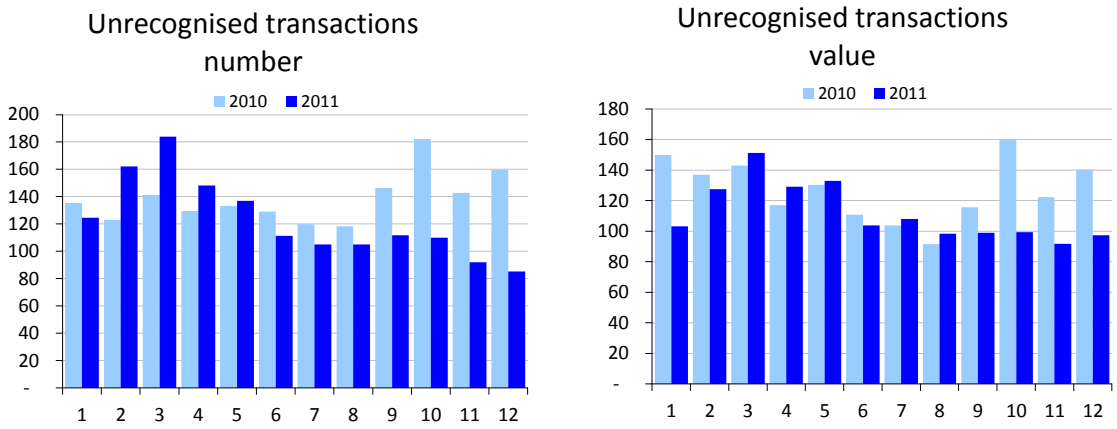


Figure 3. Unrecognised transactions – monthly figures – index number (2009-1=100)

Figure 1 presents an illustration of the evolution of the index (base = January 2009) concerning the number (blue line) and value (red line) of unrecognised transactions. Whenever the red line is above the blue line, the average value of unrecognised transactions exceeds its initial value[17] (January 2009, €203). Essentially, this occurs not only in July 2011, but also in early 2010 and late 2011. Confirmation of this trend may be observed in Figure 2 and Table 2c, which illustrates that performance of the average value of unrecognised transactions in euro. In August 2010, unrecognised transactions reach a low by value, induced by a local low in the number of unrecognised transactions, and, most importantly, an absolute low in the average value of unrecognised transactions, which reaches €156 in that month. The highest levels of unrecognised transactions by value (slightly above the initial level) are recorded in October 2010 and March 2011, caused primarily by the high levels of the number of unrecognised transactions, which in those months are up by more than 80% compared to January 2009. After the high observed in March 2011, there is a gradual, constant decline in the level of unrecognised transactions caused by the downtrend in the number of unrecognised transactions. The decline in financial value levels would have been slightly greater if it had not been offset by a recovery in the average amounts of unrecognised transactions. In fact, these climbed back to over €230 at year-end after having declined to €160 in early 2011.
In Figure 3, monthly values are presented so as to facilitate a comparison with the previous 12 months. The bar charts do not show the presence of a clear seasonality.

[17] An index expresses a trend. If the trend by financial value of unrecognised transactions is greater (lesser) than that of the trend by number, it means that the relationship between the average value of unrecognised transactions and the average value of total transactions has increased (decreased). When there is a change in the trend by financial value of unrecognised transactions induced by a change in the relationship between average values, one may speak of the "*amount effect*".

Unrecognised transactions by type

Cards issued in Italy

a – Value	1H 2009 total = 100				2009 total = 100		
	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011	% chg.
Counterfeit card	56,4	60,8	55,9	33,6	53,8	41,1	-23,6%
Card not received	3,5	1,9	1,4	1,5	2,4	1,3	-45,7%
Card stolen	9,6	9,3	9,8	9,8	8,7	9,0	3,5%
Card lost	20,8	9,2	7,4	5,4	13,7	5,9	-57,3%
Card used with false identity	0,2	0,2	0,2	0,2	0,2	0,2	10,6%
Fraudulent use of code associated with issued	3,0	4,2	4,5	3,2	3,3	3,6	8,3%
Fraudulent use of card on the Internet	11,3	11,8	20,1	25,1	10,6	20,8	95,6%
Total	**104,7**	**97,4**	**99,4**	**78,9**	**92,7**	**81,8**	**-11,8%**

b – Number	1H 2009 total = 100				2009 total = 100		
	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011	% chg.
Counterfeit card	56,5	76,8	71,9	40,9	61,5	52,0	-15,3%
Card not received	1,9	1,6	1,7	1,9	1,6	1,7	1,0%
Card stolen	8,2	9,0	9,2	7,7	7,9	7,8	-1,8%
Card lost	26,4	14,8	12,7	7,3	19,0	9,2	-51,4%
Card used with false identity	0,1	0,2	0,1	0,3	0,2	0,2	12,4%
Fraudulent use of code associated with issued	3,7	5,6	6,3	3,7	4,3	4,6	7,2%
Fraudulent use of card on the Internet	14,7	14,4	20,2	24,2	13,5	20,5	52,1%
Total	**111,5**	**122,6**	**122,2**	**85,9**	**108,0**	**96,0**	**-11,1%**

Table 3. Unrecognised transactions by type – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

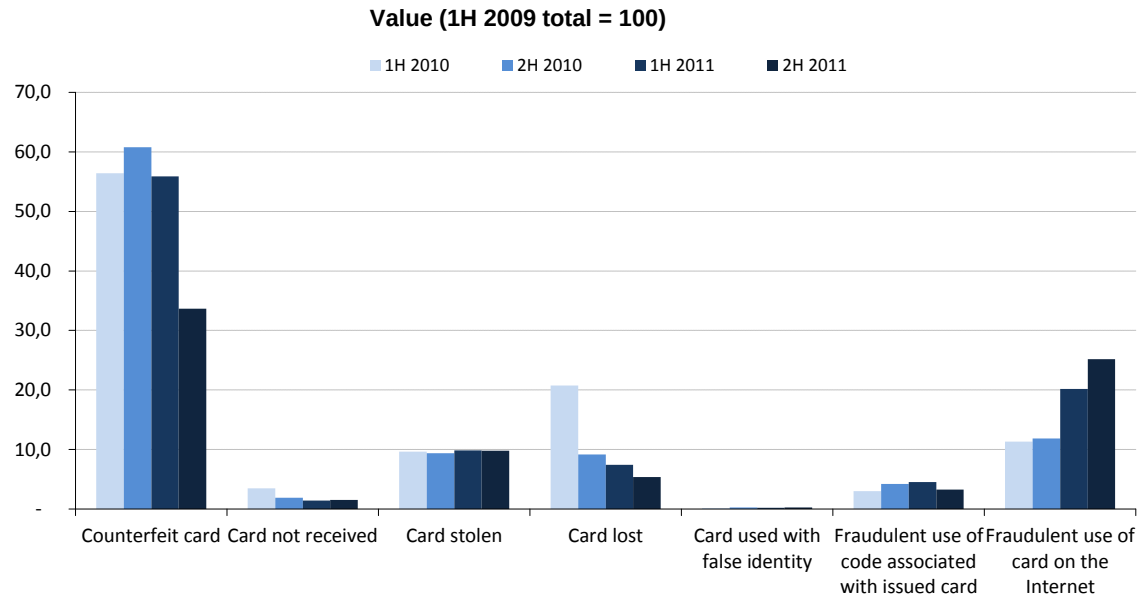


Figure 4. Unrecognised transactions by type – half-yearly figures (1H 2009 total = 100)

Table 3 presents the half-yearly and annual trend in unrecognised transactions, by number and value, with respect to each type of unrecognised transaction. The half-yearly figures are presented in relation to the total value observed in the first half of 2009[18] (see also Figure 4). During the four half-years observed, the type *Counterfeit card* constitutes the primary type of unrecognised transaction. Its weight by value tends to contract owing chiefly to a reduction in the average value of unrecognised transactions. In fact, a reduction in value of 24% at an annual level corresponds to a decrease in number of just 15%. *Fraudulent use of card on the Internet*, *Card stolen* and *Card lost* follow by order of weight in 2011. In further detail, the type *Lost card* has declined constantly, from 20.8 in the first half of 2010 to 5.4 in the second half of 2010, approximately ¼ of its initial level[19]. The volume by financial value of *Fraudulent use of card on the Internet* rose from 11-12 in the first two half-yearly periods to 20-25 in the following two half-yearly periods, caused in part by the increase in the number of events and in part by the increase in the average number of unrecognised transactions. The share of unrecognised transactions classified to the *Stolen card* category remained stable at approximately 10%. The remaining types show weights that remained stably beneath 4-5%.

Figure 5 and Figure 6 present the percentage composition of unrecognised transactions by type considered above for 2010 and 2011, respectively. In the transition from 2010 to 2011, an increase in the diversification of distribution by type of the value of unrecognised transactions may be observed. The weight of the type *Card lost* decreased by half, that of *Counterfeit card* declined by eight percentage points and that of *Fraudulent use on the Internet* increased to one-fourth of the total volume.

[18] In this manner, the total amount thus expresses an index number based on the first half of 2009, whereas the specific amount by type represents the quantity of the index number attributable to each specific type. For example, in the first half of 2010 (Table A), the total amount of transactions by value was 104.7 (of which 56.4 was attributable to the type *Counterfeit card*), indicating that the total amount for the first half of 2010 increased by 4.7% compared to the total amount for the first half of 2009 (and that the type *Counterfeit card* accounted for 53.9% of 104.7=56.4/104.7).

[19] It should be noted that such values refer to the total amount observed in the first half of 2009 (see also the previous note).

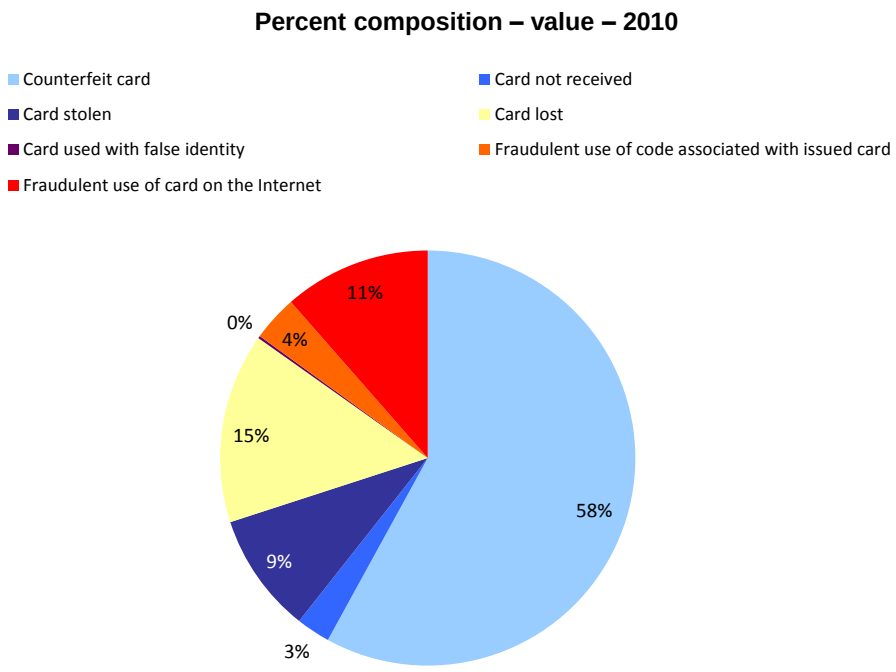


Figure 5. Unrecognised transactions by type – 2010 – percent composition

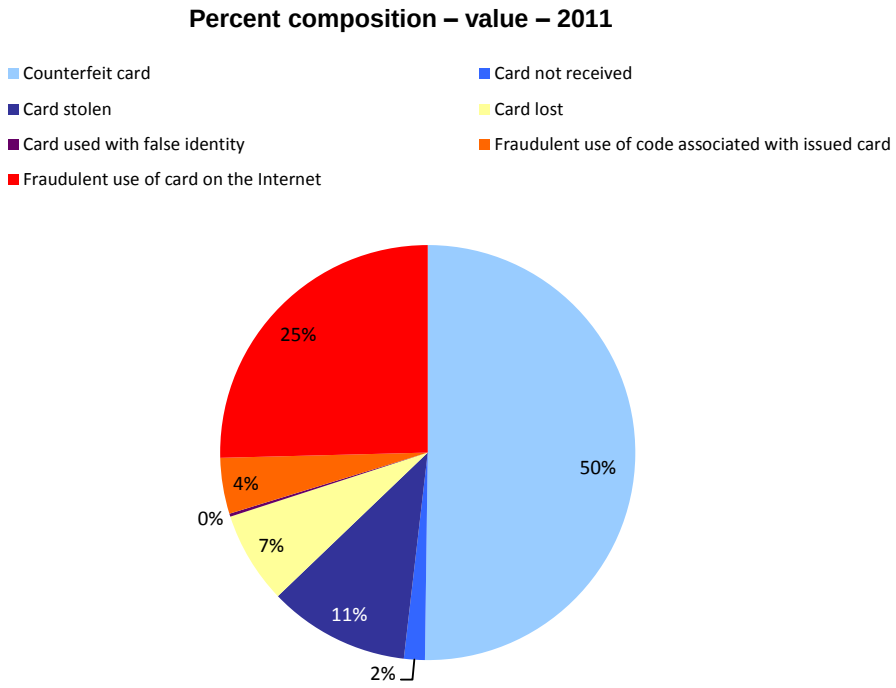


Figure 6. Unrecognised transactions by type – 2011 – percent composition

Criminological note (*)

Unrecognised transactions by type
Cards issued in Italy

a – Value	1H 2009 total = 100				2009 total = 100		
	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011	% chg.
Technological methods	67,7	72,6	76,0	58,8	64,4	61,8	-4,0%
Non-technological methods	37,0	24,8	23,4	20,1	28,3	19,9	-29,6%
Total	**104,7**	**97,4**	**99,4**	**78,9**	**92,7**	**81,8**	**-11,8%**

b – Number	1H 2009 total = 100				2009 total = 100		
	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011	% chg.
Technological methods	71,2	91,2	92,1	65,1	74,9	72,5	-3,2%
Non-technological methods	40,3	31,3	30,1	20,8	33,0	23,5	-28,9%
Total	**111,5**	**122,6**	**122,2**	**85,9**	**108,0**	**96,0**	**-11,1%**

Table 4. Unrecognised transactions by type (technological vs. non-technological) – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

The figures for unrecognised transactions indicate increased use of technological methods by criminals. This is due both to the increasingly widespread use of electronic payment systems and the lesser criminal exposure for the perpetrator of the offence.

In addition, in the transition from 2010 to 2011, the weight of the type *Card lost* decreased by half, that of *Counterfeit card* declined by eight percentage points and that of *Fraudulent use on the Internet* increased to one-fourth of the total volume.

In this regard, it should be emphasised that the ability to reconstruct the consumer's individual behaviour through a sort of virtual identikit allows accurate identification of the consumption preferences of the active population that undertakes purchases or transactions of any kind on the Internet. The acquisition of a user profile capable of detailing each individual's modes of commercial consumption makes it simpler and more effective to adopt techniques aimed at identifying and developing strategies to circumvent the obstacles presented by organised crime networks.

There is also a need for regulation of the Internet capable of ensuring a balance between civil liberties and security protection. Indeed, there can be no doubt that the interplay between the right to privacy and the right to safeguard the common interest in protecting personal property may complicate the work of the authorities responsible for this field of legal regulation.

In Italy, traditional mafia-style criminal organisations have yet to make a significant entry into cyberspace in order to exploit it as a source of profits. Yet there is a tendency to do so: easy, extensive profits are possible, the risks of being discovered are smaller and the penalties are less severe, all of which make cyber-crime highly attractive.

At the European level, a change is occurring with the creation of the European Cyber Centre within Europol, set to become operational on 1 January 2013.

(*) University of Molise – Information Technology Research and Teaching Centre (CADRI) and the Italian Criminology Laboratory.

Unrecognised transactions by channel

Cards issued in Italy

a – Value of transactions

	1H 2010	2H 2010	1H 2010	2H 2010	2010	2010	% chg.
POS Terminals	0,0296%	0,0215%	0,0187%	0,0159%	0,0254%	0,0172%	-32%
Internet	0,1433%	0,1423%	0,2177%	0,2598%	0,1428%	0,2390%	67%
Withdrawals	0,0161%	0,0163%	0,0181%	0,0079%	0,0162%	0,0128%	-21%
Total	**0,0246%**	**0,0209%**	**0,0228%**	**0,0166%**	**0,0227%**	**0,0196%**	**-14%**

b – Number of transactions

	1H 2010	2H 2010	1H 2010	2H 2010	2010	2010	% chg.
POS Terminals	0,0107%	0,0103%	0,0082%	0,0061%	0,0105%	0,0071%	-32%
Internet	0,0894%	0,0796%	0,1193%	0,1089%	0,0844%	0,1139%	35%
Withdrawals	0,0147%	0,0173%	0,0188%	0,0086%	0,0161%	0,0135%	-16%
Total	**0,0138%**	**0,0142%**	**0,0147%**	**0,0096%**	**0,0140%**	**0,0121%**	**-14%**

c – Average value of a single transaction (euro)

	1H 2010	2H 2010	1H 2010	2H 2010	2010	2010	% chg.
POS Terminals	220	169	175	202	194	187	-3%
Internet	160	176	179	219	168	199	19%
Withdrawals	194	171	172	170	181	171	-6%
Total	**202**	**171**	**175**	**197**	**185**	**184**	**-1%**

d – Relationship of average value of unrecognised transactions and total transactions

	1H 2010	2H 2010	1H 2010	2H 2010	2010	2010
POS Terminals	2,78	2,10	2,27	2,60	2,43	2,42
Internet	1,60	1,79	1,82	2,39	1,69	2,10
Withdrawals	1,10	0,94	0,97	0,92	1,01	0,95
Total	**1,78**	**1,47**	**1,55**	**1,73**	**1,61**	**1,62**

Table 5. Unrecognised transactions by channel – half-yearly and annual figures – percent incidence of total transactions, average value of unrecognised transactions (euro) and multiple of total value

Incidences by transaction channel are illustrated in Table 5 and Figures 7-8. In 2010, the transaction channel with the greatest incidence (by number) of non-recognition was via the Internet (0.0844%). It was followed by *Withdrawals* and *POS Terminal* transactions, at considerably lower incidences (0.0161% and 0.0105%, respectively). The latter account for nearly the total incidence (0.0140%) and not much less, due to offsetting effect with the high incidence levels of Internet transactions, inasmuch as total Internet transactions (recognised and unrecognised) are limited in weight, as explained below. By value, unrecognised transactions via the Internet present an incidence of 0.1428% and show an average transaction volume of 1.7 times greater than that of total transactions on the Internet (Table 5d) and do not differ significantly from the general level (1.6). In other words, the high incidence of the unrecognised transaction value is due to the high incidence of unrecognised transaction (the number effect) rather than the average transaction value (the amount effect). The opposite situation applies to transactions via POS terminals: their incidence with respect to total transactions is 0.0105%, below the general level, whereas their incidence with respect to total value is 0.0254%, above the general level (0.0227%). In fact, the relationship between average unrecognised amount

and total average amount is 2.4 for POS transactions. For POS transactions, the level of incidence, measured in terms of financial value, is due to the amount effect and not the number effect. These values, observed for 2010, differ from those presented for the same period in the previous edition of the Statistical Report[20] owing to the reclassification of unrecognised transactions by channel. In further detail, a portion of unrecognised transactions via POS terminals have now been reclassified to the *Withdrawals* category, and a minor portion has also been reclassified to the *Internet* category. This reclassification has not distorted the variability of the profile of incidences by transaction channel.

The annual trend shows an increase in the incidence of unrecognised transactions on the *Internet* (due both to the number effect and amount effect) and a decline in those of *POS Terminals* and *Withdrawals* (essentially due to the number effect alone for both). The increase in the incidence of the phenomenon (in terms of financial value) on the *Internet* is quite considerable (+67%), to the extent that in 2011 this incidence is 12 times the total (0.24% vs. 0.02%). The annual decline in the *POS* phenomenon also appears significant, not so much due to the level of the decrease as to the weight assumed by this payment channel in relation to the other two examined here.

[20]Ministry of Economy and Finance – Department of the Treasury (2011), *Statistical Report on Payment Card Fraud*, No. 1.

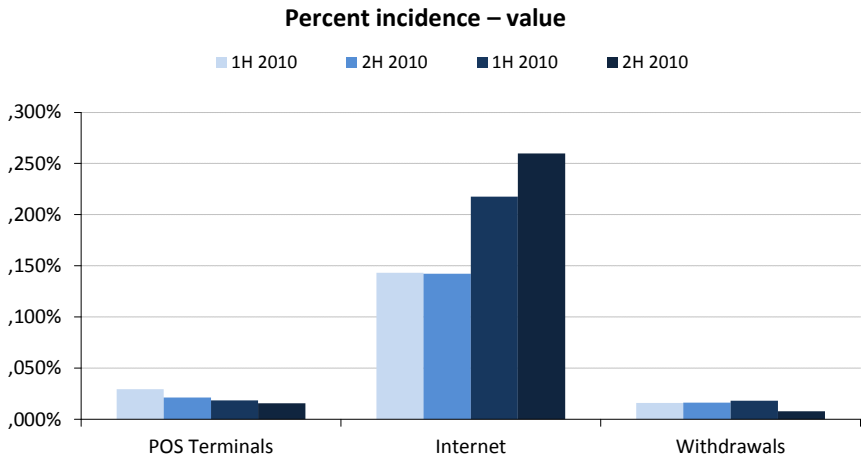


Figure 7. Value of unrecognised transactions by channel – half-yearly figures – percent incidence with respect to total transaction volumes

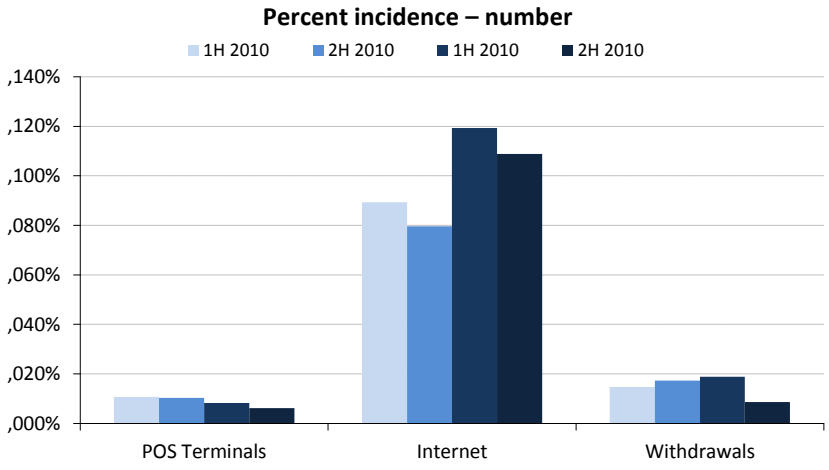


Figure 8. Number of unrecognised transactions by channel – half-yearly figures – percent incidence with respect to total transaction volumes

Table 6 presents an illustration of transactions by value and number in relation to the corresponding level observed in the first half of 2009 on the basis of the channel of unrecognised transaction. As mentioned above, the *Internet* channel does not show a dominant weight, as was instead the case for incidences. In fact, despite its growth, in the second half of 2011 it accounts for approximately one-third of the total observed in the first half of 2009, although this weight is still sufficient to render this channel more important than *Withdrawals*.

In absolute terms (and not by incidence), the reclassification applied to a set of cases in 2010 reduced (compared to the previously published figure) the financial value of unrecognised transactions via *POS Terminals* by approximately one-fourth and increased that of *Withdrawals* by approximately two-thirds.

Unrecognised transactions by channel

Cards issued in Italy

a - Valore	**1H 2009 total = 100**				**2009 total = 100**		
	1H 2010	2H 2010	1H 2010	2H 2010	2010	2010	% chg.
POS Terminals	55,8	43,8	35,3	32,6	45,7	31,1	-31,8%
Internet	12,0	12,3	21,1	25,7	11,1	21,4	93,1%
Withdrawals	37,0	41,3	43,0	20,6	35,9	29,2	-18,8%
Total	**104,7**	**97,4**	**99,4**	**78,9**	**92,7**	**81,8**	**-11,8%**

b - Numero	**1H 2009 total = 100**				**2009 total = 100**		
	1H 2010	2H 2010	1H 2010	2H 2010	2010	2010	% chg.
POS Terminals	54,5	55,7	43,2	34,6	50,9	35,9	-29,4%
Internet	16,1	15,0	25,3	25,2	14,3	23,3	62,8%
Withdrawals	41,0	51,9	53,7	26,1	42,8	36,8	-14,1%
Total	**111,5**	**122,6**	**122,2**	**85,9**	**108,0**	**96,0**	**-11,1%**

Table 6. Unrecognised transactions by channel – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

Unrecognised transactions by geographical area

Cards issued in Italy

a – Value	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
Italy	50,8	30,6	33,3	30,9	37,3	29,4	-21,2%
Abroad	53,9	66,8	66,1	48,0	55,4	52,3	-5,5%
Total	**104,7**	**97,4**	**99,4**	**78,9**	**92,7**	**81,8**	**-11,8%**

b - Number	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
Italy	49,8	37,2	38,3	31,0	40,1	31,9	-20,4%
Abroad	61,7	85,4	84,0	54,9	67,9	64,1	-5,6%
Total	**111,5**	**122,6**	**122,2**	**85,9**	**108,0**	**96,0**	**-11,1%**

c – Average value of a single transaction (euro)

	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	% chg.
Italy	219,0	176,8	186,7	214,2	201,0	199,0	-1,0%
Abroad	187,6	168,1	169,1	187,8	176,3	176,5	0,1%
Total	**201,7**	**170,7**	**185,5**	**184,0**	**185,5**	**184,0**	**-0,8%**

Table 7. Unrecognised transactions by geographical area – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100) and average transaction value (euro)

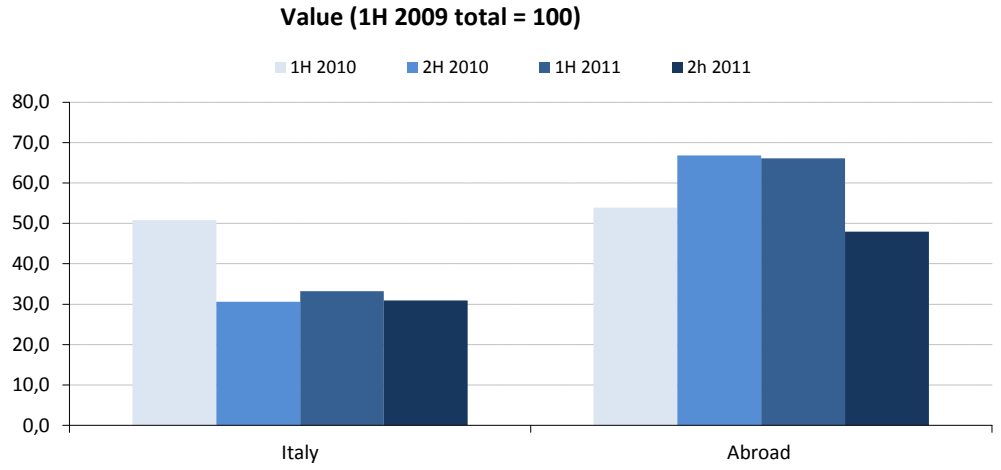


Figure 9. Value of unrecognised transactions by geographical area – half-yearly figures (Total 1H 2009 = 100)

The analysis of unrecognised transactions by geographical area (Italy vs. abroad), in terms of levels observed in the first half of 2009, is presented in Table 7 and Figure 9. Figures 10 and 11 examine the percentage compositions.

Of the total financial value of unrecognised transactions, in 2010 the international component exceeded the national component: 60% compared to 40% (Figure 10). The difference increases slightly if the number of transactions is considered (Table 7b): 63% compared to 37%[21]. This is because the average value of an unrecognised international transaction in euro was slightly lower than at the national level[22].

The 12% decline in the financial value of unrecognised transactions in the transition from 2010 to 2011 (initially illustrated in Table 2) is here presented from the standpoint of Italy vs. abroad. As may be remarked, one-third of that decline is attributable to the decrease in transactions abroad and two-thirds to the decrease in transactions in Italy, in which the phase of decline essentially occurred in the transition from the first to the second half of 2010. These trends seem to be caused primarily by the number effect, meaning that essentially the same tendencies may also be observed in terms of number (Table 7b).

[21]The value of transactions has been measured in terms of euro. Transactions undertaken in a currency other than the euro have been converted according to the exchange rate observed on the same date of the transaction.

[22]This does not necessarily imply that the same relationship applies to recognised transactions.

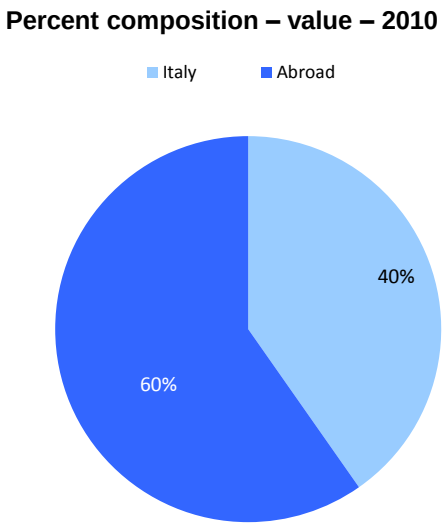


Figure 10. Value of unrecognised transactions by geographical area – 2010 – percent composition

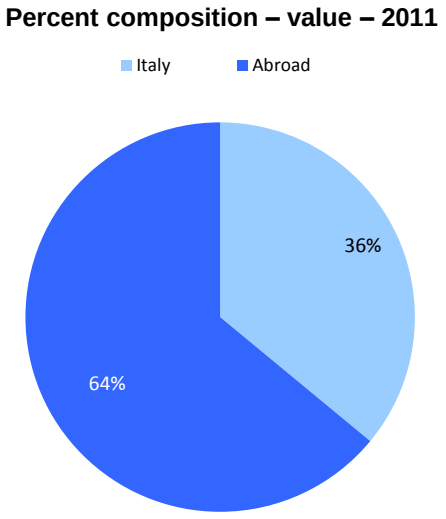


Figure 11. Value of unrecognised transactions by geographical area – 2011 – percent composition

Unrecognised transactions by channel – Italy

Cards issued in Italy

a - Value	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
POS Terminals	55,8	36,2	38,9	35,1	43,0	34,6	-19,5%
Internet	7,2	6,8	13,3	17,7	6,5	14,5	122,0%
Withdrawals	46,9	23,3	19,8	14,1	32,8	15,8	-51,8%
Total	**109,9**	**66,2**	**72,0**	**66,9**	**82,4**	**65,0**	**-21,2%**

b - Number	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
POS Terminals	56,6	59,3	52,1	41,9	54,1	43,8	-18,9%
Internet	11,4	9,3	24,2	21,1	9,7	21,1	118,5%
Withdrawals	54,1	22,7	17,7	13,0	35,8	14,3	-60,1%
Total	**122,2**	**91,3**	**93,9**	**76,0**	**99,6**	**79,3**	**-20,4%**

c – Average value of a single transaction (euro)

	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	% chg.
POS Terminals	240,2	148,4	181,9	204,1	193,2	191,8	-0,7%
Internet	153,2	177,5	134,3	203,8	164,1	166,7	1,6%
Withdrawals	210,9	250,6	272,7	263,3	222,6	268,7	20,7%
Total	**219,0**	**176,8**	**201,0**	**214,2**	**201,0**	**199,0**	**-1,0%**

Table 8. Unrecognised domestic transactions by channel – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100) and average transaction value (euro)

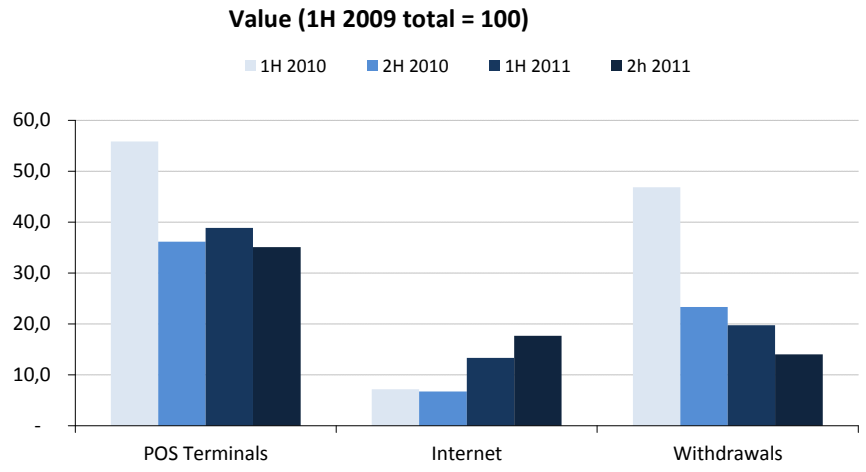


Figure 12. Value of unrecognised domestic transactions by channel – half-yearly figures (1H 2009 total = 100)

In Table 8 and Figures 12-14, attention is focused on unrecognised domestic transactions. In further detail, trends are reviewed by transaction channel (POS Terminals, Internet and Withdrawals) and percent composition for the years 2010 and 2011. Among unrecognised transactions, in 2010 the financial value of transactions undertaken via *POS Terminals* had a weight of 43% compared to the first half of 2009 (54% in terms of number). These are followed by *Withdrawals* at 33% (36% in terms of number) and *Internet transactions* (7% by value, 10% by number)[23]. The latter present an average value (euro) lower than that of total unrecognised transactions. The half-yearly trend shows that the decline in values, where present, occurred primarily in the transition from the first to the second half of 2010. The trends show the same sign as those observed in the general case (Table 6), yet have a different degree of intensity. For Italy, the decline in the financial values of *POS* transactions was more moderate, whereas that for *Withdrawals* was more accentuated; the increase in *Internet* values is more extensive and depends essentially on the number effect.

A review of the change in 2011 compared to 2010 in terms of shares (Figures 13 and 14) shows that the *Internet* channel nearly tripled by value, to the detriment of the *Withdrawals* channel.

[23]It is worth recalling that these values differ from those published in the previous edition of the Report owing to the reclassification of unrecognised transactions via POS terminals.

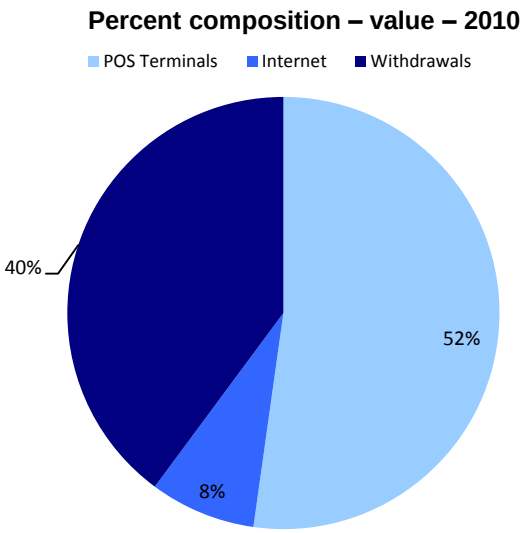


Figure 13. Value of unrecognised domestic transactions by channel – 2010 – percent composition

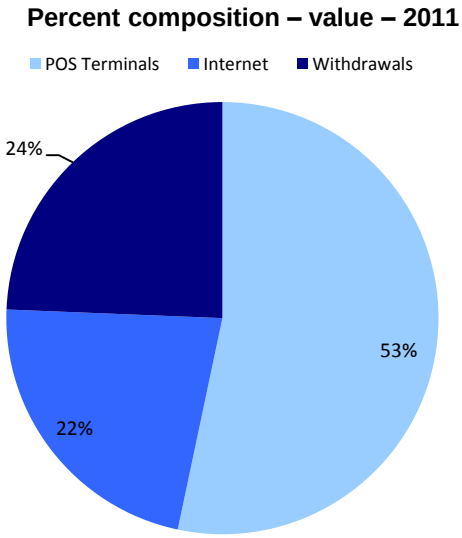


Figure 14. Value of unrecognised domestic transactions by channel – 2011 – percent composition

Unrecognised transactions by channel – abroad

Cards issued in Italy

a - Value	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
POS Terminals	55,7	50,4	32,2	30,4	47,9	28,3	-41,0%
Internet	16,1	17,0	27,7	32,5	14,9	27,2	82,6%
Withdrawals	28,5	56,8	62,9	26,2	38,5	40,3	4,5%
Total	**100,2**	**124,2**	**122,9**	**89,2**	**101,3**	**95,7**	**-5,5%**

b - Number	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
POS Terminals	53,1	53,3	37,1	29,6	48,7	30,5	-37,2%
Internet	19,3	18,9	26,2	28,0	17,4	24,8	42,0%
Withdrawals	31,9	72,0	78,5	35,1	47,5	52,0	9,3%
Total	**104,2**	**144,1**	**141,8**	**92,7**	**113,6**	**107,3**	**-5,6%**

c – Average value of a single transaction (euro)							
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	% chg.
POS Terminals	204,8	184,4	169,0	200,5	194,6	183,0	-6,0%
Internet	162,5	175,4	206,9	226,8	168,9	217,2	28,6%
Withdrawals	174,3	154,0	156,5	145,9	160,3	153,2	-4,4%
Total	**187,6**	**168,1**	**176,3**	**187,8**	**176,3**	**176,5**	**0,1%**

Table 9. Unrecognised international transactions by channel – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100) and average transaction value (euro)

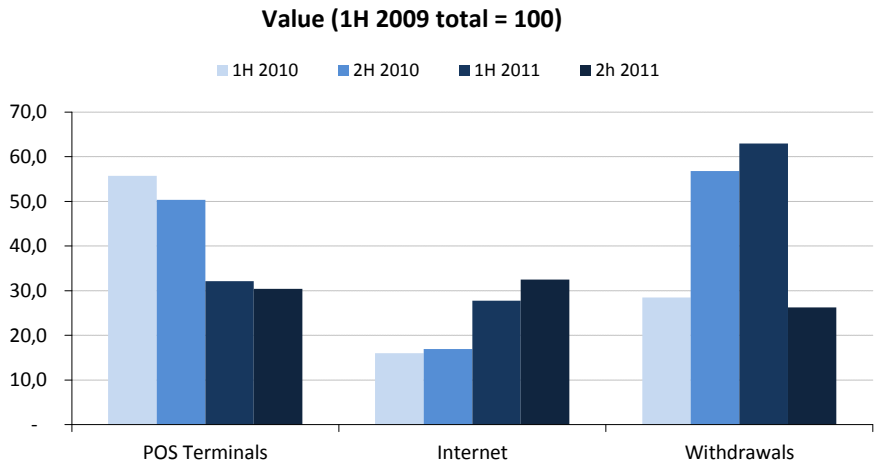


Figure 15. Value of unrecognised international transactions by channel – half-yearly figures (1H 2009 total = 100)

The focus on unrecognised international transactions is shown in Table 9 and Figure 15 and, in terms of percent composition, Figures 16 and 17. During 2010, in this case as well, POS transactions accounted for the greatest weight in the unrecognised category: 43% and 47% (Figure 16) by number and value, respectively. The lesser weight of the former is attributable to the greater average amount than for total transactions abroad (195 compared to 176). However, the weight of the POS channel in the *Abroad* category (47%, Figure 16) is less than that for Italy (52%, Figure 13); however, considering that the total financial weight of the *Abroad* category is greater than that of the domestic category (60% compared to 40%, Figure 10), absolute levels via the POS channel are more concentrated in the *Abroad* category than in the domestic category. In this case as well, the level of the financial value of Internet transactions in 2010 is the lowest of the three channels contemplated, although it accounts for a higher proportion within the *Abroad* category (15% compared to 8%)[24].

Annual trends for the POS and Internet channels show the same sign as those observed in the general case (domestic and abroad, Table 6), yet have a different degree of intensity. The decline in POS values was more accentuated, whereas the growth of the Internet channel was more moderate. There was an opposite trend in Withdrawals: growth of 4.5% compared to a decline of 19% in the general scenario. The annual trend shows that the lack of change in the average value (+0.1%) is the result of the offsetting of the significant growth of amounts via the Internet channel (+29%) and the decrease in amounts via the channels POS Terminals (-6%) and Withdrawals (-4%).

A review of percent compositions in the two general geographical areas (Figures 13 and 14, Figures 16 and 17) shows that financial values, during the transition from 2010 to 2011, registered an increase in the Internet fraud phenomenon, to the detriment of the Withdrawals channel, within Italy, and to the detriment of the POS Terminal channel, abroad.

[24] It is worth recalling that these values differ from those published in the previous edition of the Report owing to the reclassification of unrecognised transactions via POS terminals.

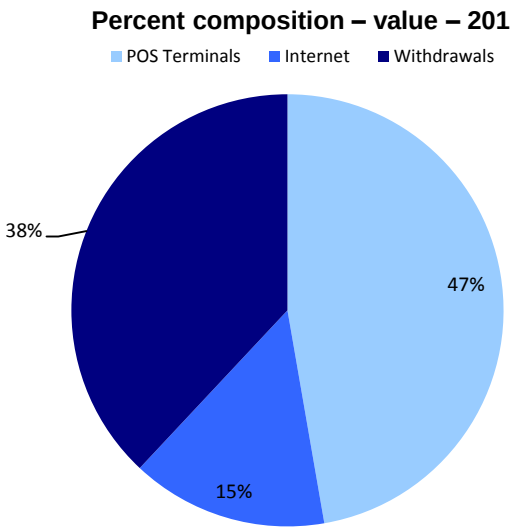


Figure 16. Unrecognised international transactions by channel – 2010 – percent composition

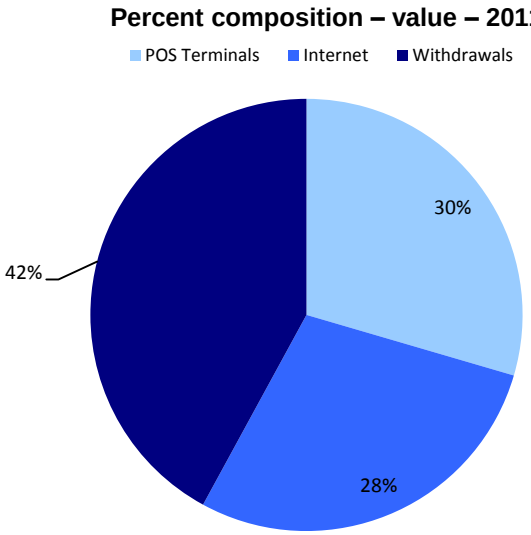


Figure 17. Unrecognised international transactions by channel – 2011 – percent composition

Unrecognised transactions by via POS terminal – abroad

Cards issued in Italy

Value of transactions	1H 2009 total = 100				2009 total = 100	
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
United Kingdom	20,6	14,9	24,7	23,7	18,3	25,0
United States of Ameri	21,9	33,1	19,3	18,9	28,4	19,7
France	8,7	8,3	6,3	6,3	8,8	6,5
Germany	4,6	3,1	5,7	6,0	4,0	6,0
Ireland	3,2	3,8	5,0	6,5	3,6	6,0
Russia	1,1	1,5	3,3	3,5	1,3	3,5
Spain	4,4	2,7	2,8	3,6	3,6	3,3
Luxembourg	0,4	0,6	1,1	1,8	0,5	1,5
Holland	0,6	1,0	0,9	1,0	0,8	1,0
Sweden	0,4	0,4	0,4	1,4	0,4	0,9
Brazil	0,8	0,6	0,6	1,0	0,7	0,9
Singapore	0,3	0,0	0,1	1,5	0,2	0,8
South Africa	0,8	0,9	0,7	0,7	0,9	0,7
India	0,4	1,6	1,1	0,3	1,0	0,7
China	0,5	0,8	0,4	0,8	0,7	0,7
Australia	2,5	2,1	0,5	0,6	2,4	0,6
Switzerland	0,5	0,5	0,5	0,7	0,5	0,6
Austria	0,8	0,6	0,6	0,5	0,7	0,6
Canada	2,6	1,5	0,6	0,3	2,1	0,5
Cyprus	0,2	0,2	0,4	0,3	0,2	0,4
Malta	0,8	0,3	0,3	0,4	0,6	0,4
Mexico	1,7	0,7	0,4	0,3	1,3	0,4
Latvia	0,1	0,2	0,6	0,1	0,1	0,4
Greece	0,7	0,6	0,2	0,5	0,7	0,3
Belgium	0,3	0,1	0,2	0,4	0,2	0,3
United Arab Emirates	0,7	0,2	0,4	0,2	0,5	0,3
Gibraltar	0,1	0,1	0,2	0,4	0,1	0,3
Turkey	0,7	0,3	0,2	0,4	0,5	0,3
Argentina	0,8	1,4	0,3	0,2	1,1	0,3
Hong Kong	0,3	0,2	0,2	0,3	0,2	0,2
Israel	0,3	0,7	0,2	0,2	0,5	0,2
Chile	0,1	0,0	0,4	0,1	0,1	0,2
Kenya	0,1	0,1	0,2	0,2	0,1	0,2
Saudi Arabia	2,7	1,1	0,2	0,1	1,9	0,2
Lebanon	0,3	0,1	0,2	0,2	0,2	0,2
Azerbaijan	0,0	0,0	0,0	0,3	0,0	0,2
Iceland	0,3	0,3	0,3	0,1	0,3	0,2
Slovakia	0,3	0,1	0,2	0,1	0,2	0,1
Czech Republic	0,1	0,0	0,2	0,0	0,1	0,1
Ukraine	0,2	0,0	0,2	0,1	0,1	0,1
Poland	0,2	0,5	0,1	0,1	0,3	0,1
Mauritius	0,0	0,2	0,1	0,1	0,1	0,1
Monaco	0,0	0,0	0,2	0,0	0,0	0,1
Portugal	0,2	0,3	0,1	0,1	0,3	0,1
Romania	1,1	2,2	0,1	0,1	1,7	0,1
Venezuela	0,3	0,2	0,1	0,1	0,3	0,1
Hungary	0,2	0,1	0,0	0,2	0,2	0,1
Panama	0,5	0,8	0,1	0,1	0,7	0,1
Philippines	0,1	0,2	0,0	0,2	0,1	0,1
Finland	0,2	0,1	0,1	0,1	0,2	0,1
Namibia	0,1	0,1	0,1	0,1	0,1	0,1
Andorra	0,0	0,0	0,1	0,0	0,0	0,1
Slovenia	1,0	0,2	0,1	0,1	0,6	0,1
Indonesia	0,0	0,0	0,0	0,2	0,0	0,1

Table 10. Value of unrecognised transactions via POS terminal by country – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

In relation to 2010, as mentioned above, approximately 50% of the financial value of unrecognised transactions refers to transactions via POS terminals[25]. Of these, 42% was domestic; the percentage in terms of transaction value for other countries is presented in Table 10. In relation to 2011, half of the value is concentrated, in not highly dissimilar parts, in two countries: the United Kingdom (25.0) and the United States (19.7). They are followed, at markedly lower, but essentially equal levels, by France, Germany and Ireland (in the range of 6.0-6.5). All remaining countries fall below 4%. In the previous year, the United Kingdom presented a lower level and the United States a higher level, with the result that their positions in the rankings were reversed. Germany and Ireland presented, with respect to France, lower levels than those observable in 2011. The composition of unrecognised transactions via POS terminals is presented on a geographical map by value (Figure 18) and number (Figure 19).

Figure 20 presents, for each country, an illustration of the difference between the 2011 and 2010 levels, expressed in terms of the total for the first half of 2009. At the top, in red, are the countries with increases in unrecognised transactions; at the bottom, in blue, those with decreases. At the top, the countries are presented in descending order by size of increase; at the bottom, the countries are presented in ascending order by size of decrease.

Figure 21 presents, for each country, an illustration of changes in half-yearly levels (expressed in terms of the total for the first half of 2009). During the two-year period under review, there are four half-years and thus three half-yearly changes. The most recent changes are those presented in the darkest colour. The order is the same as that adopted in the previous figure. Positive changes are to the right of the vertical axis, whereas negative changes are to the left. The countries with bars both to the left and the right have had both positive and negative changes and thus do not present a constant uptrend or downtrend. Countries presenting a bar characterised by few colours show movements concentrated in specific half-yearly periods only.

[25] It is worth recalling that these values differ from those published in the previous edition of the Report owing to the reclassification of unrecognised transactions via POS terminals.

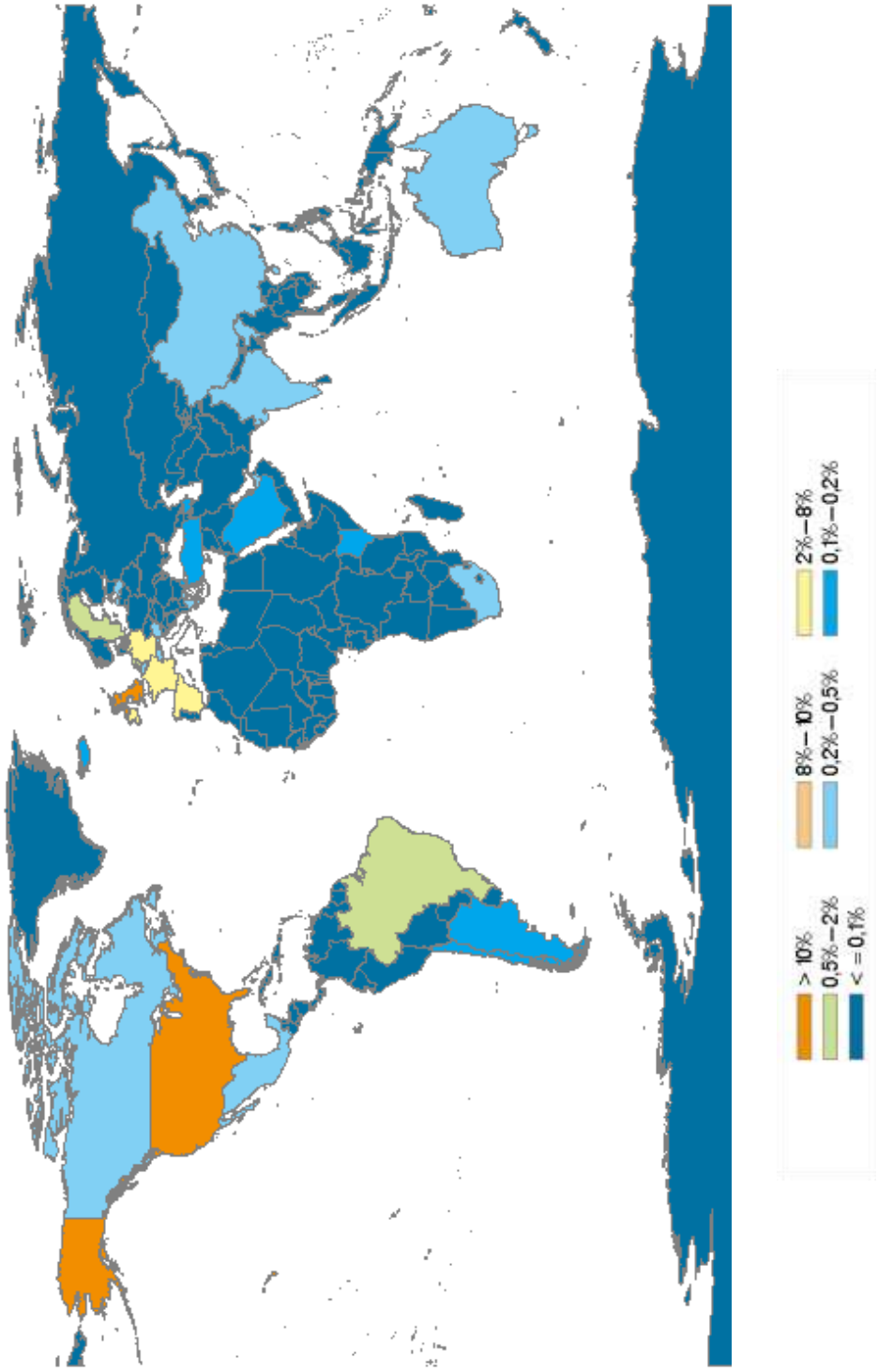


Figure 18. Value of unrecognised transactions via POS terminal by channel – 2010 – percent composition

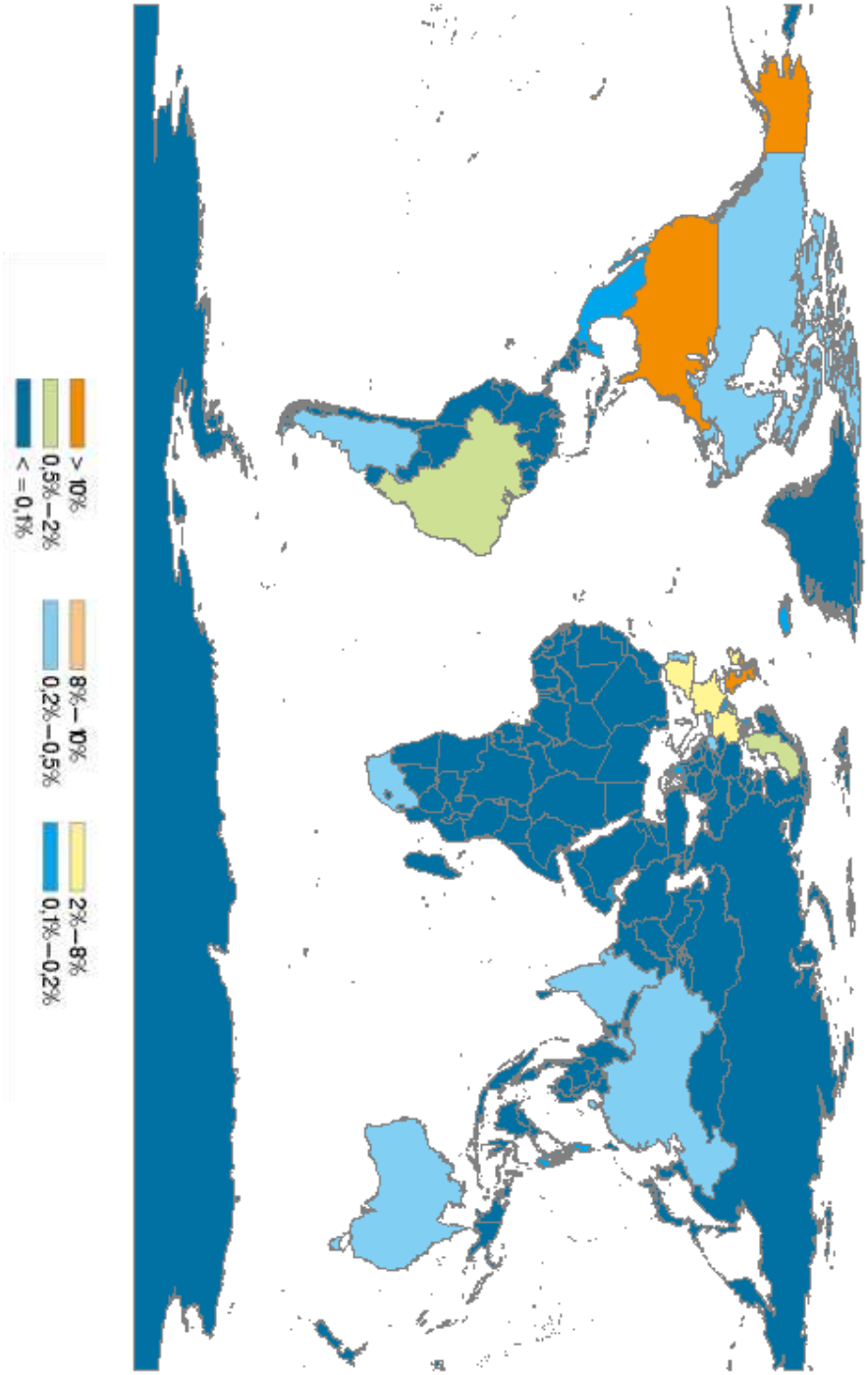


Figure 19. Number of unrecognised transactions via POS terminal by country – 2011 – percent composition

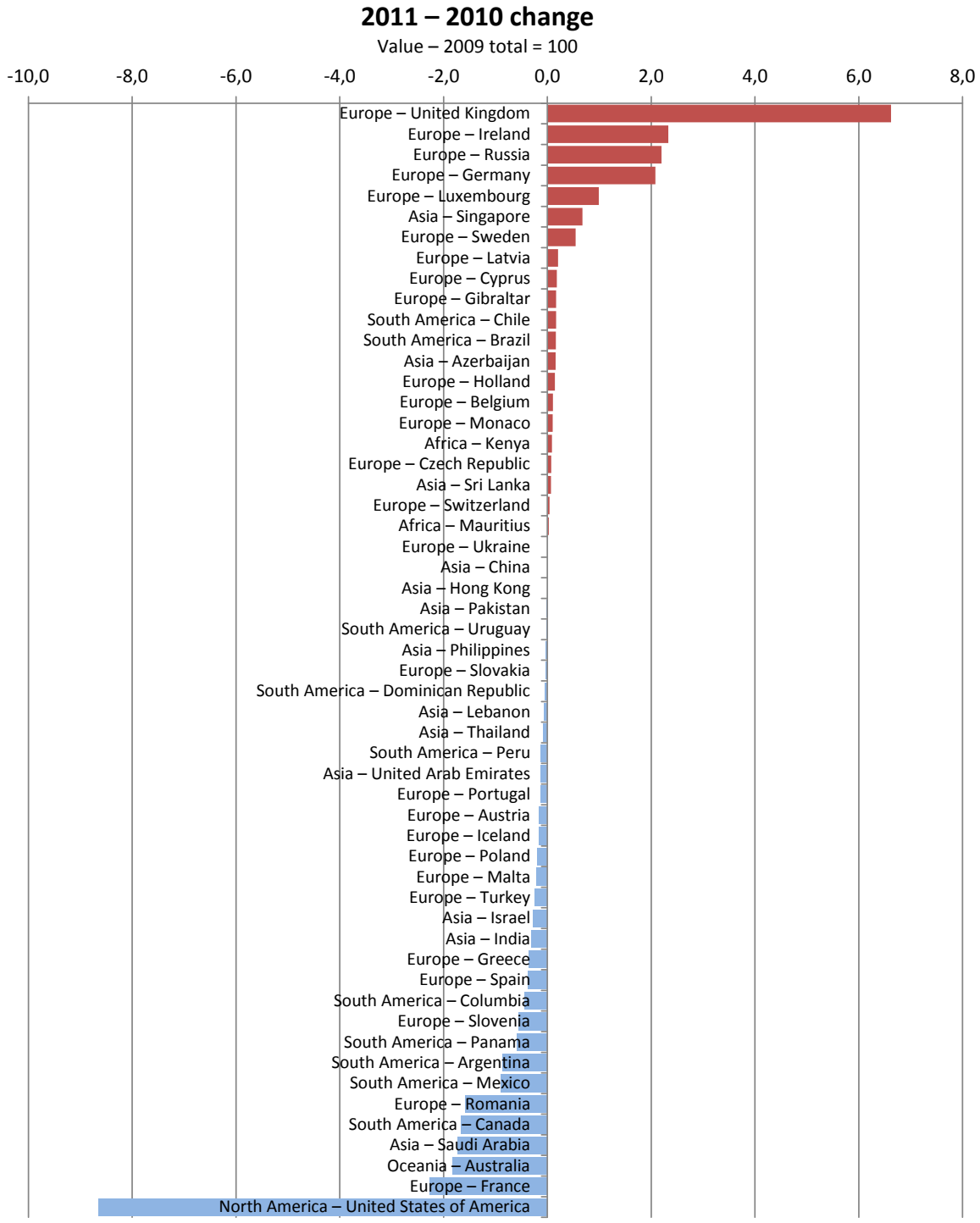


Figure 20. Value of unrecognised transactions via POS terminal by country – annual change (2009 total = 100)

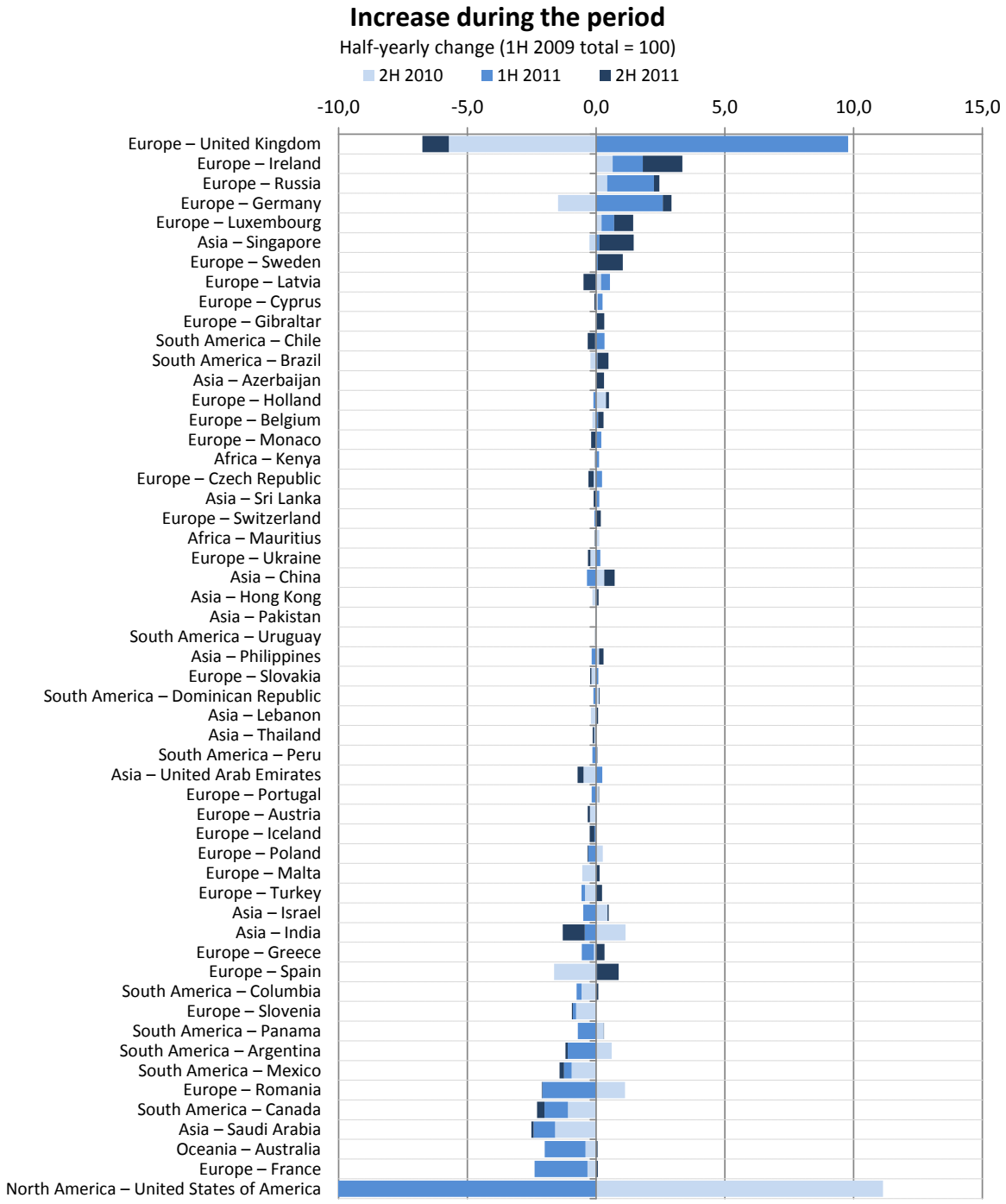


Figure 21. Value of unrecognised transactions via POS terminal by country – half-yearly change (1H 2009 total = 100)

Unrecognised transactions via POS terminal and the Internet – Product or service categories

Cards issued in Italy

Value of transactions	1H 2009 total = 100				2009 total = 100	
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
General Retail and Wholesale	46,1	33,1	28,5	31,8	34,4	26,2
Leisure Activities	6,6	6,7	12,9	15,2	5,8	12,2
Travel - Air/Rail/Road	8,0	6,3	8,6	8,2	6,2	7,3
Financial Services	12,8	7,4	7,8	5,5	8,8	5,8
Telecommunication Services	5,7	5,2	8,8	3,9	4,8	5,5
Professional Services	5,0	8,2	4,3	7,4	5,7	5,1
Computer Equipment & Services	3,6	3,2	4,9	5,2	3,0	4,4
Mail Order / Direct Selling	3,7	4,1	2,1	3,4	3,4	2,4
Restuarants and Bars	2,7	2,8	1,4	1,6	2,4	1,3
Automotive Fuel	2,9	3,7	1,8	1,2	2,9	1,3
Auto rental	1,3	1,2	1,3	1,7	1,1	1,3
Hotels and accomodation	2,1	1,5	1,1	1,8	1,6	1,3
Print and advertising	0,8	0,8	1,1	1,2	0,7	1,0
Medical Supplies and Services	1,4	1,7	1,2	0,8	1,3	0,8
Cash	0,8	0,4	0,8	1,0	0,5	0,8
Miscellaneous Industrial/Commercial Supplies	1,2	0,4	0,9	0,9	0,7	0,8
Freight and Storage	1,0	0,9	0,8	0,5	0,8	0,6
Vehicles, servicing and spares	0,7	0,5	0,6	0,4	0,5	0,4
Personal Services	0,1	0,2	0,4	0,3	0,2	0,3
Books and Periodicals	0,4	0,6	0,3	0,4	0,4	0,3
Catering and Catering Supplies	1,0	0,6	0,3	0,4	0,7	0,3
Utilities and Non Automotive Fuel	0,1	0,1	0,2	0,4	0,1	0,3
Office Stationery, equipment and supplies	0,4	0,4	0,4	0,2	0,3	0,2
Statutory Bodies	0,5	0,3	0,3	0,2	0,3	0,2
Building Services	0,2	0,1	0,1	0,2	0,1	0,1
Clubs/Associations/Organisations	0,6	0,4	0,2	0,1	0,4	0,1
Estate and garden Services	0,2	0,0	0,2	0,1	0,1	0,1
Building Materials	0,2	0,1	0,1	0,1	0,1	0,1
Mail and Courier Services	0,1	0,0	0,1	0,1	0,1	0,1
Training and Educational	0,1	0,1	0,1	0,1	0,0	0,1
Business Clothing and Footwear	0,0	0,0	0,0	0,0	0,0	0,0
Cleaning Services and Supplies	0,0	0,0	0,0	0,0	0,0	0,0
Total	110,1	91,1	91,4	94,4	87,4	80,6

Table 11. Value of unrecognised transactions via POS terminal and Internet by product or service category – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

Unrecognised transactions via POS terminal and the Internet – Product or service categories

Cards issued in Italy

Number of transactions	1H 2009 total = 100				2009 total = 100	
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
General Retail and Wholesale	31,4	29,9	22,2	23,8	27,0	20,3
Telecommunication Services	7,0	8,2	22,8	8,1	6,7	13,6
Travel - Air/Rail/Road	12,7	11,5	15,7	14,5	10,7	13,3
Leisure Activities	7,4	10,0	11,1	17,6	7,7	12,7
Mail Order / Direct Selling	6,2	5,6	6,1	5,3	5,2	5,0
Automotive Fuel	7,1	14,9	7,4	3,6	9,7	4,9
Financial Services	16,3	7,5	5,6	4,8	10,5	4,6
Professional Services	7,5	11,3	5,1	4,7	8,3	4,3
Computer Equipment & Services	3,6	3,1	3,6	3,4	3,0	3,1
Print and advertising	2,8	1,3	2,2	2,8	1,8	2,2
Restuarants and Bars	2,8	4,1	2,3	2,1	3,0	1,9
Medical Supplies and Services	1,3	1,7	1,4	0,9	1,3	1,0
Freight and Storage	1,3	1,3	1,2	1,0	1,1	1,0
Auto rental	1,0	1,2	0,9	1,0	1,0	0,9
Hotels and accomodation	1,9	1,0	0,7	0,9	1,3	0,7
Miscellaneous Industrial/Commercial Supplies	1,4	0,5	0,8	0,7	0,8	0,7
Personal Services	0,2	0,5	0,8	0,6	0,3	0,6
Clubs/Associations/Organisations	0,8	0,7	0,6	0,5	0,7	0,5
Business Clothing and Footwear	0,0	0,0	0,0	0,0	0,0	0,0
Catering and Catering Supplies	1,2	0,7	0,4	0,5	0,8	0,4
Vehicles, servicing and spares	0,4	0,4	0,5	0,3	0,4	0,3
Cash	0,9	0,3	0,4	0,4	0,5	0,3
Books and Periodicals	0,3	0,5	0,3	0,4	0,4	0,3
Statutory Bodies	0,5	0,5	0,4	0,1	0,5	0,2
Office Stationery, equipment and supplies	0,3	0,4	0,3	0,1	0,3	0,2
Utilities and Non Automotive Fuel	0,2	0,1	0,2	0,2	0,1	0,2
Building Services	0,2	0,1	0,2	0,1	0,1	0,1
Estate and garden Services	0,1	0,1	0,1	0,1	0,1	0,1
Training and Educational	0,1	0,0	0,1	0,1	0,1	0,1
Mail and Courier Services	0,1	0,1	0,0	0,0	0,1	0,0
Building Materials	0,1	0,0	0,1	0,0	0,1	0,0
Cleaning Services and Supplies	0,0	0,0	0,0	0,1	0,0	0,0
Total	117,1	117,3	113,6	98,8	103,4	93,7

Table 12. Number of unrecognised transactions via POS terminal and the Internet by product or service category – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

In Table 11 and Figure 22, the financial value of unrecognised transactions via POS terminals and the Internet (61% of 2010 total unrecognised transactions, Table 6) is broken down by product or service category. The values observed in both the past four half-yearly periods and the past two years are illustrated. In 2010, the category *General Retail and Wholesale* accounted for nearly 40% of unrecognised transactions, despite a significant decline in such transactions in the transition from the first to the second half of 2010. The values of the category *Leisure Activities* are constantly on the rise, with the category ranking in second place (at 16% of the total) in the final half-yearly period of observation. Other significant categories, on the basis of 2011 financial volumes (expressed in 2009 terms) are: *Travel*, *Financial Services*, *Telecommunication Services*, *Professional Services* and *Computer Equipment & Services*.

As in the previous case, Table 12 and Figure 23 present breakdowns by product or service category. However, in this case, they are measured not in terms of the value, but rather in terms of number of transactions. As may be noted, the distributions assume different forms from the preceding cases. From this standpoint, the average amount factor plays an important part, inasmuch as each product or service category is characterised (with respect to recognised and unrecognised transactions) by its own specific average amount. Selecting certain categories of products or services when fraud is committed entails a focus of specific average amount ranges. It is from this perspective of analysis that one may identify the significance of *Telecommunication Services*, which present significant volumes of unrecognised transactions, with a modest average amount, compared to the more significant categories.

Figure 24 presents, for each category, an illustration of the difference between the 2011 and 2010 levels, expressed in terms of the total level for the first half of 2009. At the top, in red, are the categories with increases in the value of unrecognised transactions; at the bottom, in blue, those with decreases. At the top, the countries are presented in descending order by amount of increase; at the bottom, the countries are presented in ascending order by amount of decrease. The figure on the left refers to values, and that on the right to numbers. The two figures presented on the sides show that there is also an amount effect on the performance over time of the distribution of unrecognised transactions by product or service category.

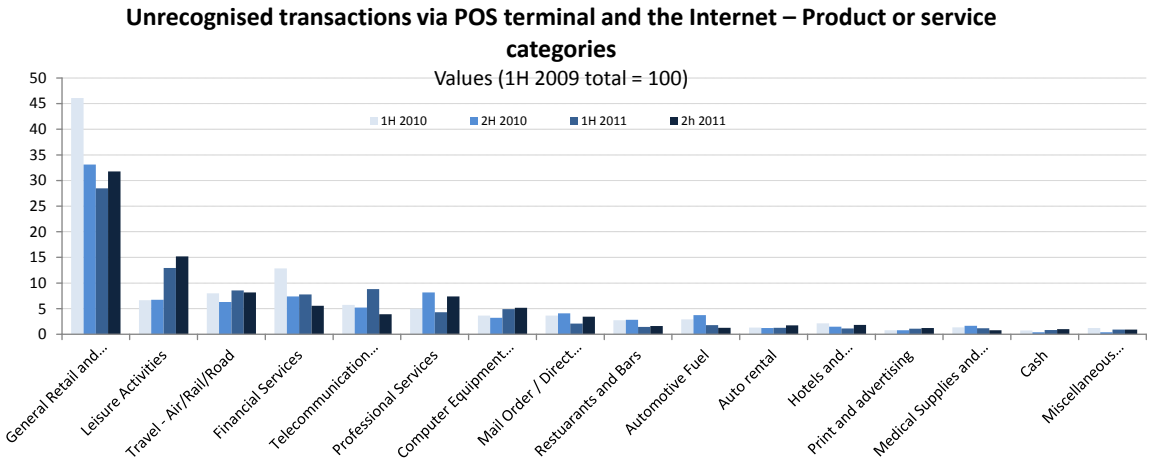


Figure 22. Value of unrecognised transactions via POS terminal and Internet by product or service category – half-yearly figures (1H 2009 total = 100)

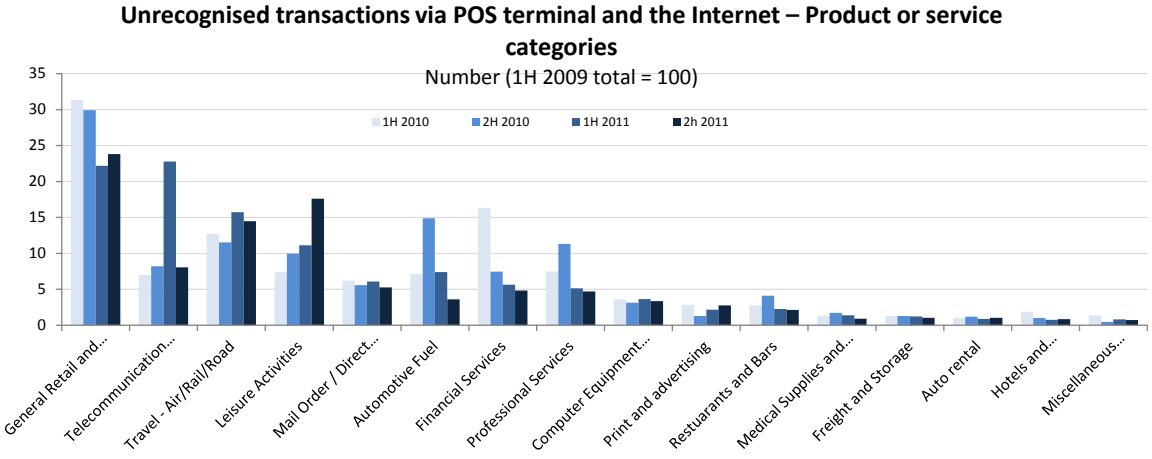
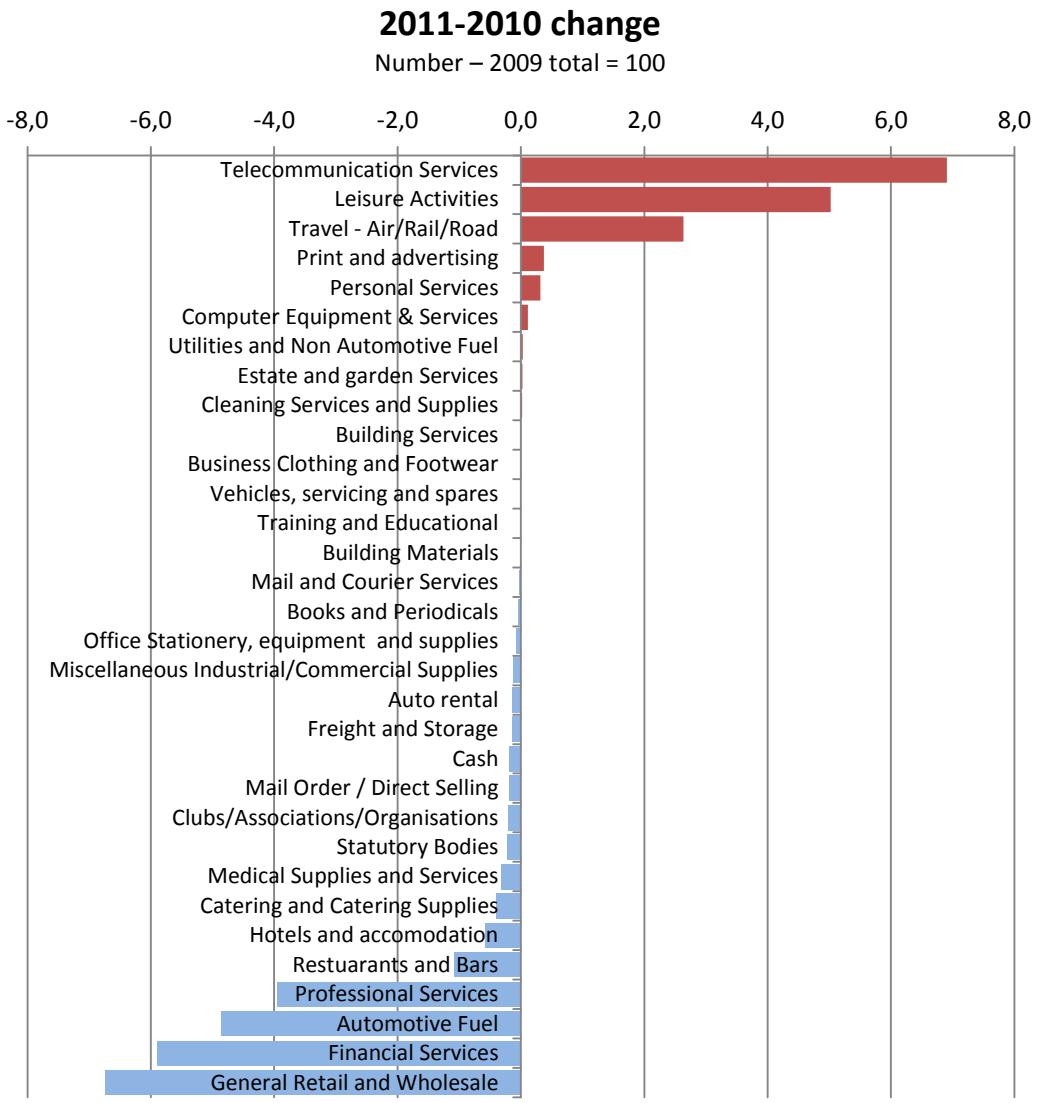


Figure 23. Number of unrecognised transactions via POS terminal and Internet by product or service category – half-yearly figures (1H 2009 total = 100)


2011-2010 change
Number – 2009 total = 100
-8,0
-6,0
-4,0
-2,0
0,0
2,0
4,0
6,0
8,0
Telecommunication Services
Leisure Activities
Travel - Air/Rail/Road
Print and advertising
Personal Services
Computer Equipment & Services
Utilities and Non Automotive Fuel
Estate and garden Services
Cleaning Services and Supplies
Building Services
Business Clothing and Footwear
Vehicles, servicing and spares
Training and Educational
Building Materials
Mail and Courier Services
Books and Periodicals
Office Stationery, equipment and supplies
Miscellaneous Industrial/Commercial Supplies
Auto rental
Freight and Storage
Cash
Mail Order / Direct Selling
Clubs/Associations/Organisations
Statutory Bodies
Medical Supplies and Services
Catering and Catering Supplies
Hotels and accomodation
Restuarants and Bars
Professional Services
Automotive Fuel
Financial Services
General Retail and Wholesale

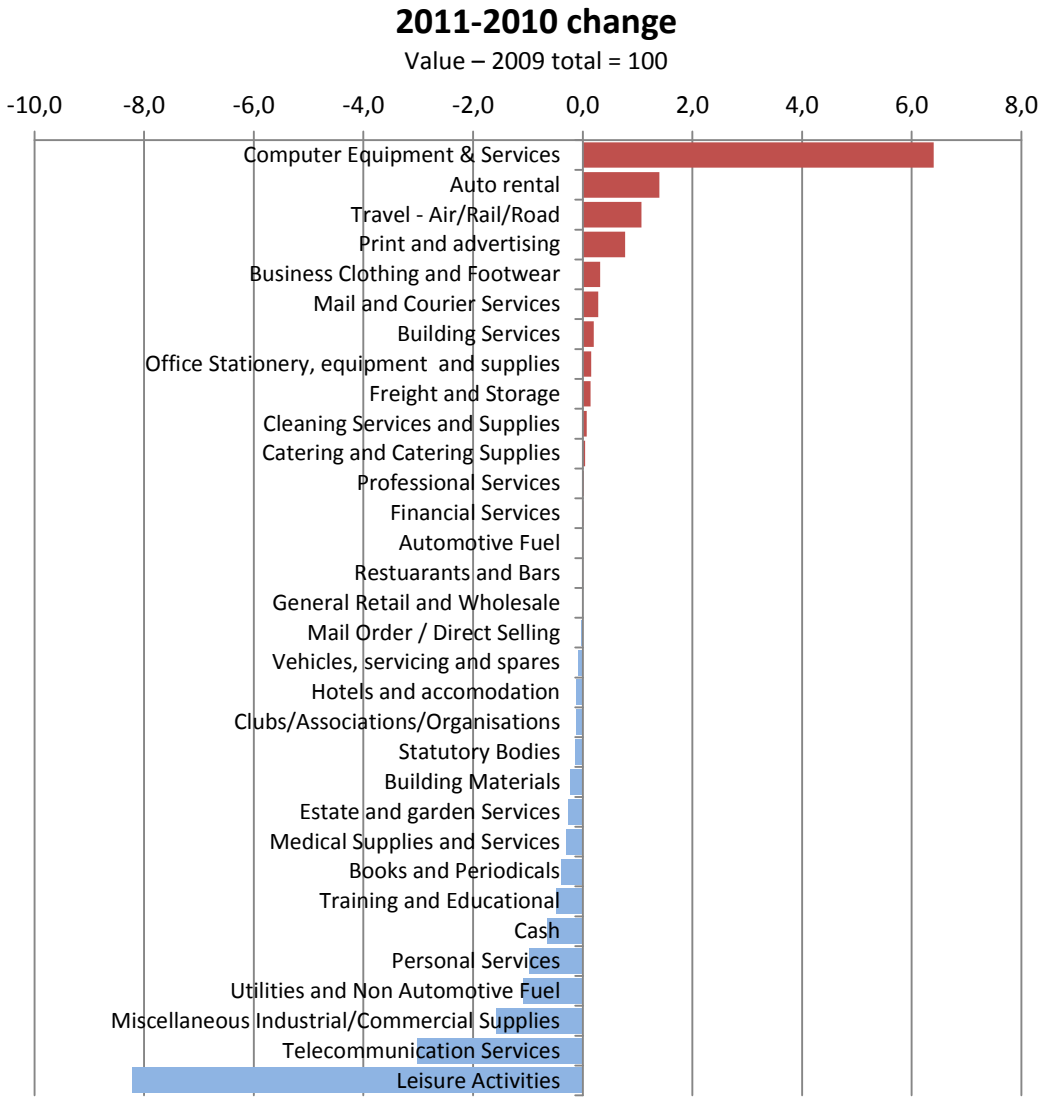


Figure 24. Value (bottom) and number (top) of unrecognised transactions via POS terminal and Internet by product or service category – annual change (2009 total = 100)

Unrecognised transactions via POS terminal – Product or service categories

Cards issued in Italy

Value of transactions	**1H 2009 total = 100**				**2009 total = 100**	
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
General Retail and Wholesale	46,0	32,0	24,5	24,5	35,7	22,4
Financial Services	13,5	7,7	7,8	5,6	9,7	6,1
Telecommunication Services	4,4	4,3	6,0	2,7	3,9	4,0
Travel - Air/Rail/Road	5,4	4,3	4,4	3,7	4,4	3,7
Leisure Activities	4,9	4,2	3,8	4,1	4,2	3,6
Professional Services	3,0	4,9	2,0	3,1	3,6	2,3
Computer Equipment & Services	3,2	2,4	2,2	2,1	2,5	2,0
Automotive Fuel	2,7	3,6	1,8	1,3	2,9	1,4
Restuarants and Bars	2,7	2,7	1,5	1,6	2,5	1,4
Auto rental	1,2	0,9	1,1	1,5	0,9	1,2
Hotels and accomodation	1,7	1,0	0,9	1,5	1,2	1,1
Mail Order / Direct Selling	2,4	3,2	1,0	1,0	2,5	0,9
Medical Supplies and Services	1,3	1,8	1,2	0,8	1,4	0,9
Miscellaneous Industrial/Commercial Supplies	1,1	0,2	0,3	0,6	0,6	0,4
Vehicles, servicing and spares	0,8	0,5	0,5	0,4	0,6	0,4
Print and advertising	0,7	0,6	0,4	0,4	0,6	0,4
Freight and Storage	0,9	0,8	0,6	0,3	0,8	0,4
Cash	0,2	0,3	0,4	0,3	0,2	0,3
Catering and Catering Supplies	1,0	0,5	0,3	0,3	0,7	0,3
Books and Periodicals	0,3	0,5	0,2	0,3	0,4	0,3
Office Stationery, equipment and supplies	0,4	0,5	0,4	0,1	0,4	0,2
Utilities and Non Automotive Fuel	0,1	0,1	0,2	0,4	0,1	0,2
Personal Services	0,1	0,1	0,1	0,2	0,1	0,2
Building Services	0,2	0,1	0,1	0,1	0,1	0,1
Estate and garden Services	0,1	0,0	0,2	0,1	0,1	0,1
Building Materials	0,2	0,1	0,1	0,1	0,1	0,1
Statutory Bodies	0,1	0,1	0,1	0,1	0,1	0,1
Mail and Courier Services	0,1	0,0	0,1	0,0	0,1	0,1
Clubs/Associations/Organisations	0,2	0,3	0,0	0,0	0,2	0,0
Training and Educational	0,0	0,1	0,0	0,0	0,0	0,0
Business Clothing and Footwear	0,0	0,0	0,0	0,0	0,0	0,0
Cleaning Services and Supplies	0,0	0,0	0,0	0,0	0,0	0,0
Total	98,9	77,7	62,4	57,7	80,8	54,9

Table 13. Value of unrecognised transactions via POS terminal by product or service category – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

Table 13 and Figure 25 present the breakdown by product or service category of the financial value of unrecognised transactions, specifically those undertaken via POS terminals (approximately 50% of total unrecognised transactions in 2010), observed over the last four available half-yearly periods and in the last two years[26]. The distribution observed in 2010 does not appear highly dissimilar from that previously observed, given the high influence of the POS terminal channel on the POS terminal and Internet

[26] At the annual, total level, the trend diverges slightly from that presented in Table 6 owing to the presence of missing in the rankings by product or service category.

aggregate (80% in 2010). In 2010, the category *General Retail and Wholesale* accounted for 44% of unrecognised transactions, despite a significant decline in such transactions in the transition from the first to the second half of 2010, a decline that also may be seen in the transition from the second half of 2010 to the first half of 2011. The values of the category *Financial Services* are constantly on the decline. However, in the second half of the year, it continued to rank as the second-most important category (at 10% of the total). Other significant categories, on the basis of 2010 financial volumes (expressed in 2009 terms) are: *Travel*, *Leisure Activities*, *Telecommunication Services* and *Professional Services*.

From a trend standpoint, it may be remarked that there is a significant difference compared to the previously conducted analysis of the *POS Terminals* and *Internet* aggregate. In this context, we essentially have a general reduction for all categories in the transition from 2010 to 2011. Figure 26 presents an illustration of the categories that contributed most to this decline, measured here in terms of financial value. This figure presents the difference between the 2011 and 2010 levels, expressed in terms of the total level for the first half of 2009. At the top, in red, are the categories with increases in the value of unrecognised transactions; at the bottom, in blue, those with decreases. At the top, the countries are presented in descending order by size of increase; at the bottom, the countries are presented in ascending order by size of decrease.

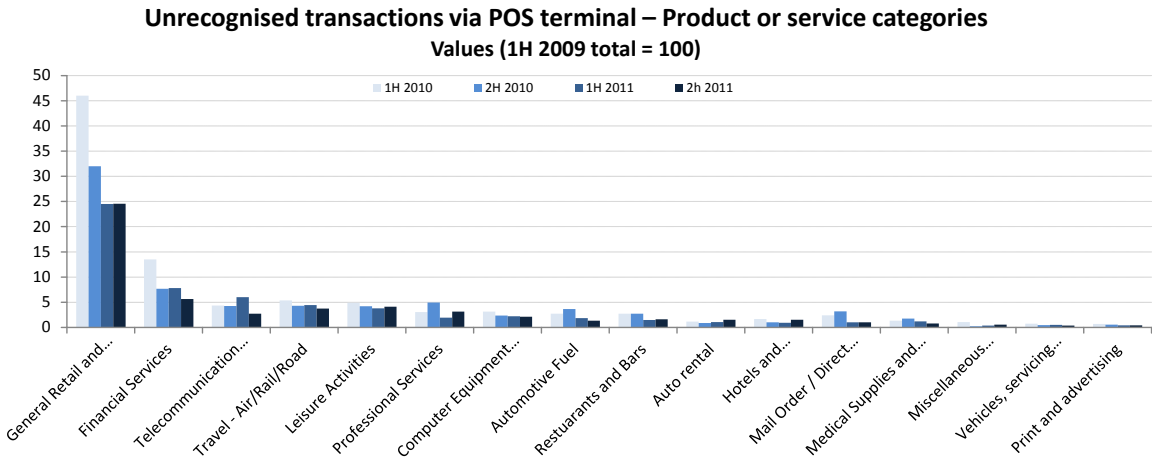


Figure 25. Value of unrecognised transactions via POS terminal by product or service category – half-yearly figures (1H 2009 total = 100)

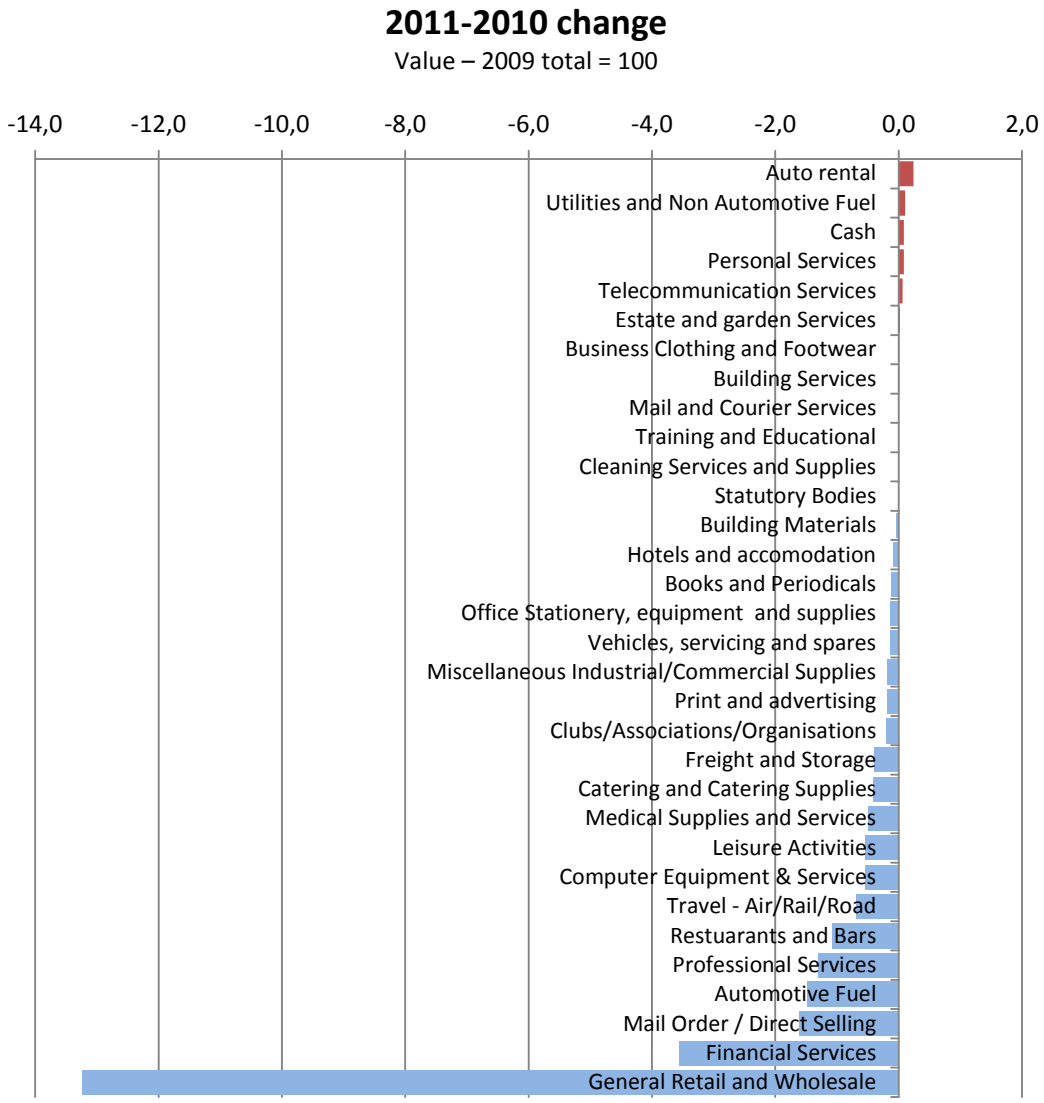


Figure 26. Value of unrecognised transactions via POS terminal by product or service category – annual change (2009 total = 100)

Unrecognised transactions via the Internet – Product or service categories

Cards issued in Italy

Value of transactions	1H 2009 total = 100				2009 total = 100	
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
Leisure Activities	26,0	34,2	114,1	137,8	16,7	69,7
General Retail and Wholesale	47,0	45,7	72,4	112,1	25,7	51,1
Travel - Air/Rail/Road	36,7	28,6	54,2	57,5	18,1	30,9
Professional Services	26,6	44,3	30,3	54,5	19,6	23,5
Computer Equipment & Services	9,1	12,8	35,0	39,0	6,0	20,5
Telecommunication Services	20,9	16,1	39,9	17,1	10,2	15,8
Mail Order / Direct Selling	17,7	14,3	13,7	30,2	8,8	12,1
Print and advertising	1,8	3,2	8,4	9,9	1,4	5,1
Cash	7,0	2,1	5,9	9,1	2,5	4,1
Financial Services	5,6	4,1	7,3	4,7	2,7	3,3
Miscellaneous Industrial/Commercial Supplies	3,0	2,1	7,1	4,6	1,4	3,2
Hotels and accomodation	7,2	6,6	3,4	5,1	3,8	2,4
Freight and Storage	1,6	2,3	3,7	3,7	1,1	2,0
Auto rental	2,9	4,7	3,4	3,9	2,1	2,0
Personal Services	1,0	1,9	3,6	1,5	0,8	1,4
Statutory Bodies	4,6	2,1	2,7	1,2	1,9	1,1
Clubs/Associations/Organisations	4,0	1,7	1,4	0,9	1,6	0,6
Restuarants and Bars	2,6	4,1	1,0	1,3	1,9	0,6
Vehicles, servicing and spares	0,4	0,6	1,1	1,1	0,3	0,6
Books and Periodicals	0,7	2,1	0,8	1,1	0,8	0,5
Utilities and Non Automotive Fuel	0,0	0,2	0,8	0,9	0,1	0,5
Catering and Catering Supplies	1,0	1,1	0,4	1,0	0,6	0,4
Medical Supplies and Services	1,7	0,7	0,6	0,6	0,7	0,3
Automotive Fuel	4,5	4,7	0,9	0,3	2,6	0,3
Building Services	0,1	0,0	0,2	0,8	0,0	0,3
Training and Educational	0,4	0,1	0,3	0,4	0,1	0,2
Office Stationery, equipment and supplies	0,2	0,1	0,3	0,3	0,1	0,2
Estate and garden Services	0,5	0,0	0,3	0,2	0,1	0,2
Building Materials	0,2	0,0	0,1	0,2	0,1	0,1
Mail and Courier Services	0,2	0,2	0,0	0,2	0,1	0,1
Cleaning Services and Supplies	0,0	0,1	0,0	0,1	0,0	0,0
Business Clothing and Footwear	0,0	0,0	0,0	0,1	0,0	0,0
Total	235,0	240,6	413,3	501,3	131,6	253,1

Table 14. Value of unrecognised transactions via the Internet by product or service category – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

Table 14 and Figure 27 present the breakdown by product or service category of the financial value of unrecognised transactions, specifically those undertaken via the *Internet* (in 2010, approximately 12% of total unrecognised transactions and 19% of the *POS Terminals* and *Internet* aggregate), observed over the last four available half-yearly periods and in the last two years[27]. The distribution observed in 2010 is quite dissimilar from that previously observed, at least in regards to the most influential categories. In this spending channel, the values are not polarised as in the *POS Terminal* channel. In

[27] At the total, annual level, the trend diverges slightly from that illustrated in Table 6 owing to the presence of missing items in the rankings by product or service category.

2010, the category *General Retail and Wholesale* accounted for just 20% of unrecognised transactions, and the other significant categories (*Travel*, *Leisure Activities* and *Professional Services*) assume levels that are not highly dissimilar. From a trend standpoint, it may be remarked that there is a significant difference compared to the previously conducted analysis of the *POS Terminals* aggregate. In this context, we essentially have a general reduction for all categories in the transition from 2010 to 2011. The categories that contributed most to this increase, here measured in terms of financial value, are presented in Figure 28[28]. The annual trend is quite important for *Leisure Activities*, which in 2011 ranked in first place at 28%.

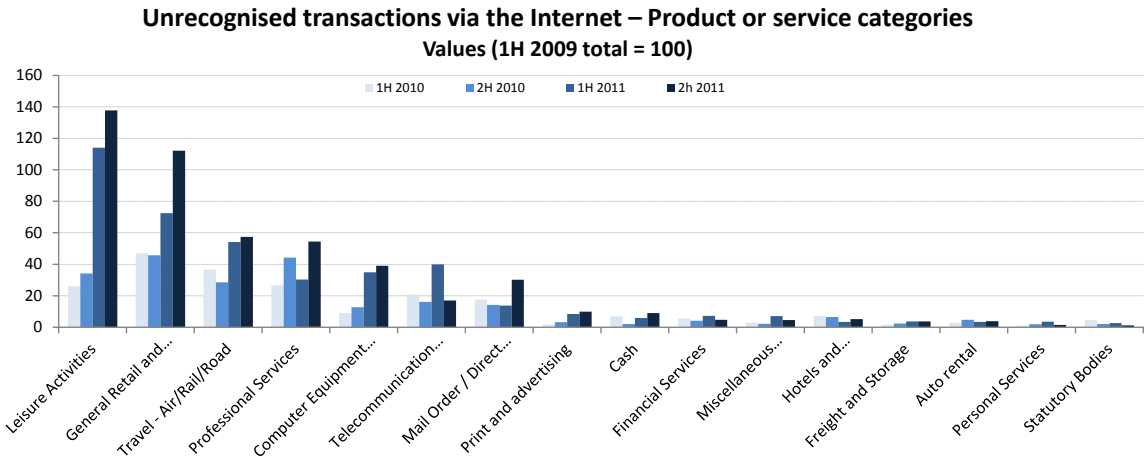


Figure 27. Value of unrecognised transactions via the Internet by product or service category – half-yearly figures (1H 2009 total = 100)

[28] This figure presents the difference between the 2011 and 2010 levels, expressed in terms of the total level for the first half of 2009. At the top, in red, are the categories with increases in the value of unrecognised transactions; at the bottom, in blue, those with decreases. At the top, the countries are presented in descending order by size of increase; at the bottom, the countries are presented in ascending order by size of decrease.

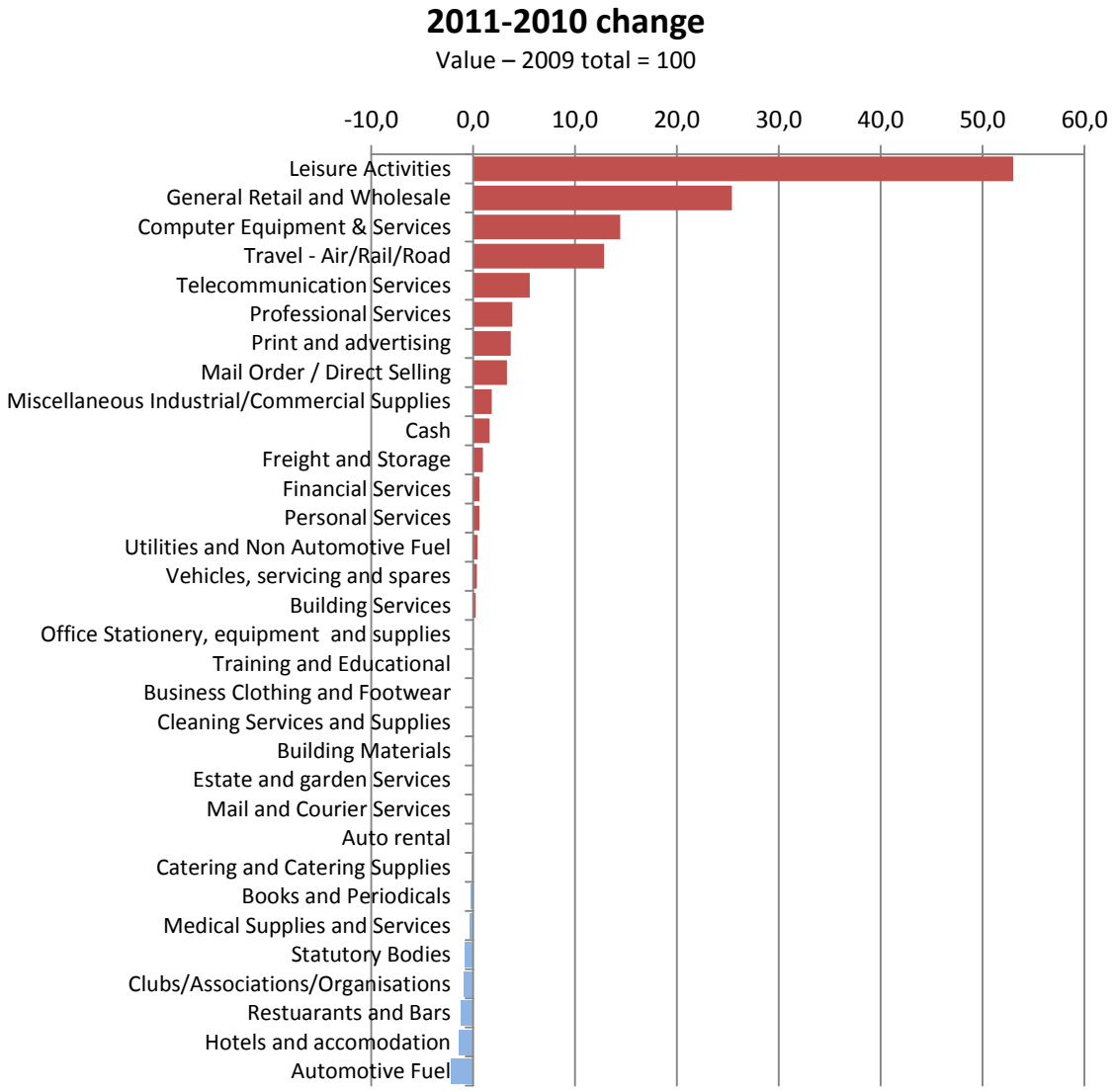


Figure 28. Value of unrecognised transactions via the Internet by product or service category – annual change (2009 total = 100)

Unrecognised withdrawal transactions by geographical area

Cards issued in Italy

a – Value of transactions

	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	% chg.
Italy	0,0095%	0,0043%	0,0039%	0,0025%	0,0067%	0,0032%	-53%
Abroad	2,7086%	3,9470%	5,6956%	1,7531%	3,4242%	3,4273%	0%
Total	**0,0161%**	**0,0163%**	**0,0181%**	**0,0079%**	**0,0162%**	**0,0128%**	**-21%**

b – Number of transactions

	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	% chg.
Italy	0,0079%	0,0031%	0,0025%	0,0017%	0,0054%	0,0021%	-61%
Abroad	2,5201%	4,2474%	5,9645%	1,9963%	3,5089%	3,6949%	5%
Total	**0,0147%**	**0,0173%**	**0,0188%**	**0,0086%**	**0,0161%**	**0,0135%**	**-16%**

c – Average value of a single transaction (euro)

	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	% chg.
Italy	211	251	273	263	223	269	21%
Abroad	174	154	156	146	160	153	-4%
Total	**194**	**171**	**172**	**170**	**181**	**171**	**-6%**

d – Relationship between average value of unrecognised transactions and total transactions

	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
Italy	1,19	1,37	1,53	1,43	1,24	1,48
Abroad	1,07	0,93	0,95	0,88	0,98	0,93
Total	**1,10**	**0,94**	**0,97**	**0,92**	**1,01**	**0,95**

Table 15. Unrecognised withdrawal transactions by geographical area – half-yearly and annual figures – percent incidence on total transactions, average value of unrecognised transaction (euro) and multiple of total value

The second channel, by weight, in the composition of the value of unrecognised transactions, is, as illustrated above, withdrawals (39%, Table 6). An analysis of the incidences by geographical area of unrecognised transactions on total transactions is presented in Table 15, Figure 29 (value) and Figure 30 (number). The incidence of the value of withdrawals varies by geographical area. In relation to 2010, the international figure far exceeds the domestic figure: 3.424% compared to 0.007%. There are similar differences in terms of number (Table 15b) and, indeed, the difference observed in terms of value is entirely explained by the number effect and not the amount effect (at the aggregate level, the ratio of the average value of unrecognised withdrawal transactions to the total average value is 1.24 for Italy, 0.98 for abroad and 1.01 for total transactions, respectively). The annual change shows a clear tendency towards a decrease in the incidences of withdrawals in Italy and a stability of such incidences at the international level. The decline of incidences within Italy was seen primarily in the transition from the first to the second half of 2010.

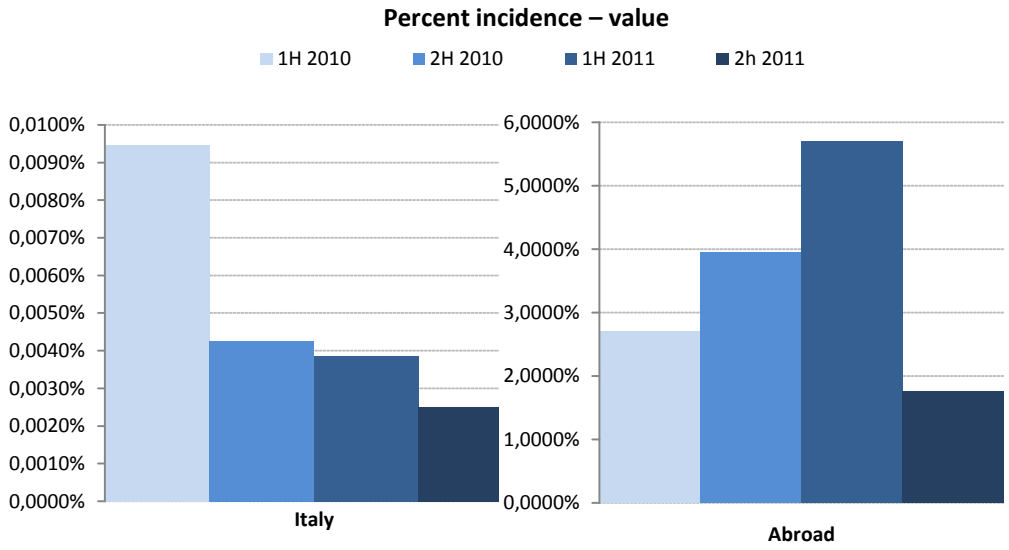


Figure 29. Value of unrecognised withdrawal transactions by geographical area – half-yearly figures – percent incidence with respect to total transaction volumes

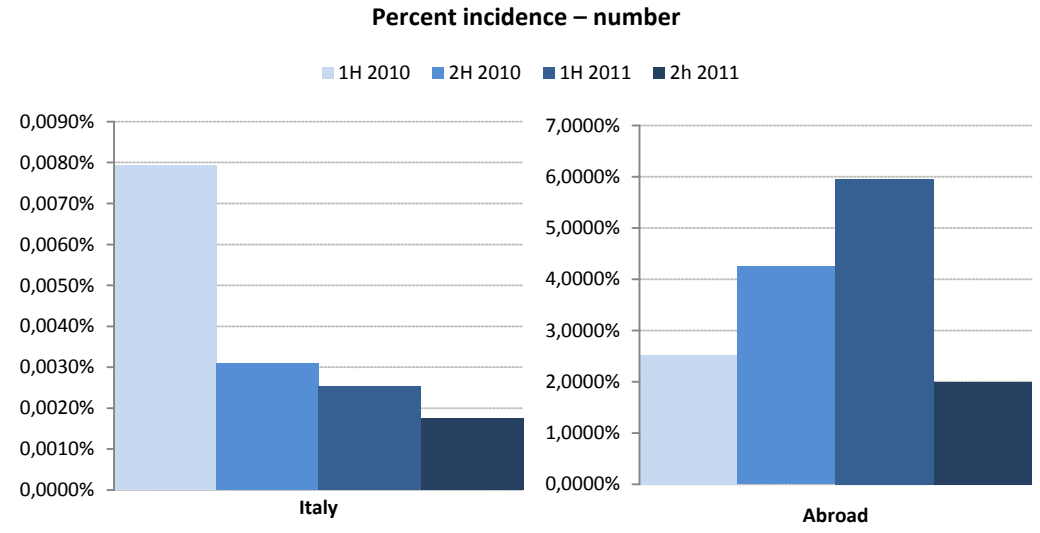


Figure 30. Number of unrecognised withdrawal transactions by geographical area – half-yearly figures – percent incidence with respect to total transaction volumes

Unrecognised withdrawal transactions by geographical area

Cards issued in Italy

a - Value	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
North-west	100,0	45,1	29,7	16,2	58,1	18,4	-68,4%
North-east	27,6	6,8	4,9	5,4	13,8	4,1	-69,9%
Centre	29,8	10,6	7,3	7,3	16,2	5,9	-63,8%
South	4,3	6,4	4,2	3,2	4,3	2,9	-31,5%
Islands	1,2	1,1	1,1	0,7	0,9	0,8	-15,9%
Total	**162,9**	**69,9**	**47,2**	**32,9**	**93,3**	**32,1**	**-65,6%**

b - Number	1H 2009 total = 100				2009 total = 100		% chg.
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	
North-west	133,7	46,7	26,7	15,8	69,6	16,4	-76,5%
North-east	31,4	6,5	4,6	5,0	14,6	3,7	-74,8%
Centre	30,6	10,4	7,0	6,9	15,8	5,4	-66,0%
South	4,6	6,8	3,7	3,1	4,4	2,6	-40,6%
Islands	1,1	0,9	1,1	1,0	0,8	0,8	1,6%
Total	**201,5**	**71,4**	**42,9**	**31,9**	**105,3**	**28,9**	**-72,6%**

c – Average value of a single transaction (euro)							
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011	% chg.
North-west	186,3	240,6	277,6	255,9	200,4	269,5	34,5%
North-east	218,7	259,7	269,2	270,0	225,7	269,6	19,4%
Centre	242,6	253,0	259,4	263,1	245,2	261,2	6,5%
South	234,4	234,1	284,2	253,4	234,3	270,0	15,3%
Islands	259,8	284,7	265,6	181,7	271,2	224,6	-17,2%
Total	**201,4**	**244,1**	**274,0**	**257,1**	**212,6**	**266,8**	**25,5%**

Table 16. Unrecognised withdrawal transactions by geographical area – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100) and average transaction value (euro)

Table 16 and Figure 32 present an examination of unrecognised withdrawal transactions conducted in a domestic context at the level of geographical breakdown[29]. In 2010, 62% of the financial value of unrecognised withdrawal transactions was concentrated in the North-west, followed by the Centre (17%) and North-east (15%)[30]. The remaining areas fall below 5% (Figure 32). The average transaction value does not show significant variability: from €271 in the Islands to €200 in the North-west.

The annual change shows a significant decline in levels. In 2011, the financial values of unrecognised withdrawal transactions came to one-third of the level observed in 2010. The decline was seen across all areas, although the most significant contribution is from the Centre and North areas. By contrast, the average amounts increased everywhere, although with varying degrees of intensity, except in the Islands, where they decreased (although they began at higher levels than in the other areas).

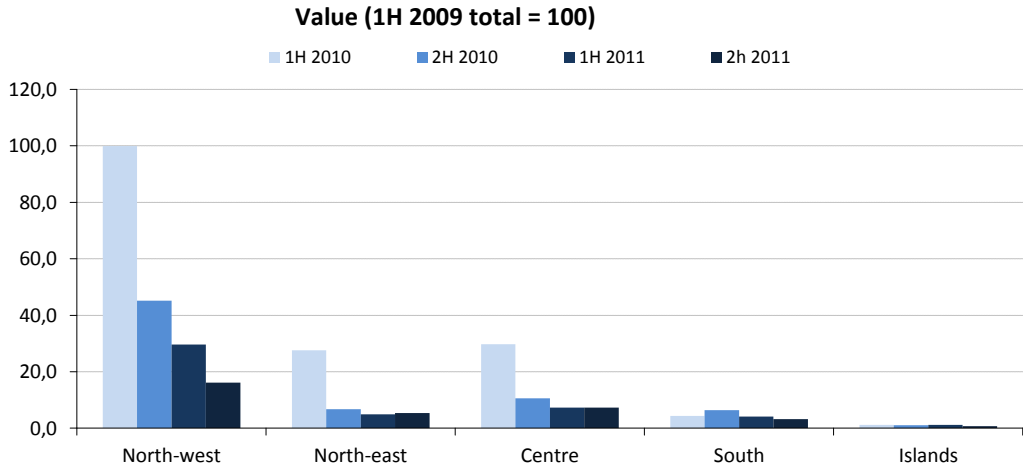
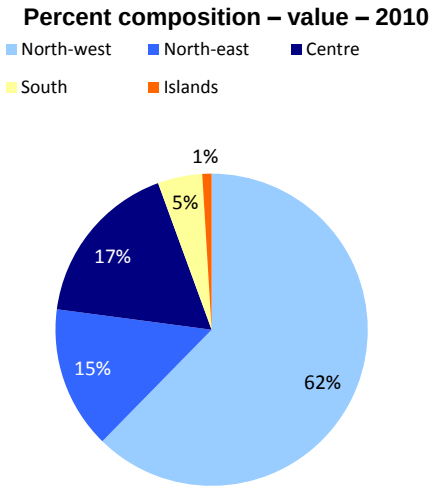


Figure 31. Value of unrecognised withdrawal transactions by geographical area – half-yearly figures (1H 2009 total = 100)

[29] At the total, annual level, the trend diverges slightly from that presented in Table 15 owing to the presence of missing items in the rankings by geographical area.

[30] It is worth recalling that these values differ from those published in the previous edition of the Report owing to the reclassification of unrecognised transactions via POS terminals.



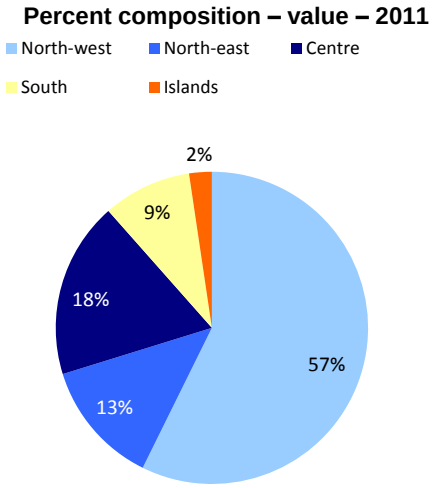


Figure 32. Value of unrecognised withdrawal transactions by geographical area – 2010 and 2011 – percent composition

Unrecognised withdrawal transactions by region

Cards issued in Italy

a - Value	1H 2009 total = 100				2009 total = 100	
	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
Lombardy	50,1	24,5	20,7	11,4	29,9	12,9
Piedmont	41,9	18,6	6,5	3,7	24,2	4,1
Lazio	22,6	7,9	4,4	4,4	12,2	3,5
Emilia Romagna	17,0	3,7	2,3	3,1	8,3	2,1
Veneto	8,8	2,8	2,4	2,0	4,7	1,8
Tuscany	6,1	2,1	2,1	2,1	3,3	1,7
Campania	2,4	1,8	3,2	2,0	1,7	2,1
Liguria	7,8	1,6	2,5	1,0	3,8	1,4
Marche	0,7	0,4	0,5	0,7	0,4	0,5
Abruzzo	0,9	0,6	0,2	0,4	0,6	0,3
Sicily	0,9	0,7	1,0	0,5	0,6	0,6
Puglia	0,5	1,9	0,5	0,3	0,9	0,3
Umbria	0,4	0,2	0,3	0,2	0,3	0,2
Calabria	0,5	2,0	0,1	0,3	1,0	0,2
Friuli-Venezia Giulia	0,4	0,1	0,1	0,2	0,2	0,1
Trentino-Alto Adige	1,5	0,1	0,1	0,2	0,6	0,1
Sardinia	0,3	0,4	0,1	0,3	0,3	0,1
Molise	0,1	0,1	0,1	0,1	0,1	0,1
Basilicata	0,1	0,0	0,0	0,0	0,0	0,0
Valle d'Aosta/Vallée d'Aoste	0,1	0,5	0,0	0,0	0,2	0,0
Total	**162,9**	**69,9**	**47,2**	**32,9**	**93,3**	**32,1**

Table 17. Value of unrecognised withdrawal transactions by region – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

Table 17 presents an analysis of the distribution of the value of unrecognised transactions at the regional level[31]. In 2010, the weight of the North-west was due to the two main regions to a slightly different extent: Piedmont (26%) and Lombardy (32%)[32]. They are followed by Lazio and Emilia Romagna, with a weight between 9% and 13%. Below 5%, but above 2%, we find Liguria, Tuscany and Veneto. The remaining regions, except for Campania, fall below 1% (Table 17). The transition to 2011 saw a widespread decline in nearly all regions. Campania is the only region that ran counter to the trend, with a significant increase (nearly 30%), making it one of the top five regions.

[31] At the total, annual level, the trend diverges slightly from that presented in Table 15 owing to missing items in the rankings by region.

[32] The weight of a region is obtained by comparing the specific amount for the region to the total amount. See also the note to Table 3.

6.2. Compromised ATMs

This section illustrates the data on tampering with ATMs as a function of the variables time, place and modus operandi.

Cases of ATM tampering per month

a – Index number (2009 1 = 100) **(2009=100)**

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Total
2010	63	158	192	162	157	153	160	97	128	225	157	97	94
2011	147	201	202	136	81	42	61	56	55	52	64	57	62

b – Percent composition

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Total
2010	4%	9%	11%	9%	9%	9%	9%	6%	7%	13%	9%	6%	100%
2011	13%	17%	18%	12%	7%	4%	5%	5%	5%	4%	6%	5%	100%

c – Percent changes compared to previous period

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Total
2010		152%	21%	-16%	-3%	-3%	4%	-39%	33%	75%	-30%	-39%	
2011	52%	37%	1%	-33%	-40%	-49%	46%	-7%	-2%	-6%	24%	-11%	-34%

Table 18. Cases of ATM tampering – monthly and annual figures – index number, composition and percent change

Distribution by month is presented in Table 18, Figure 33 and Figure 34. Yearly, the phenomenon, interpreted in absolute terms, has declined significantly (-34%). The annual decline occurred in the months of April, May and June 2011. Since then, the values have not risen significantly. For both 2010 and 2011, the months of August and December present the lowest concentrations of tampering cases. Local highs occurred in March of both years. However, as seen in Figure 34, there is not a clear seasonal phenomenon.

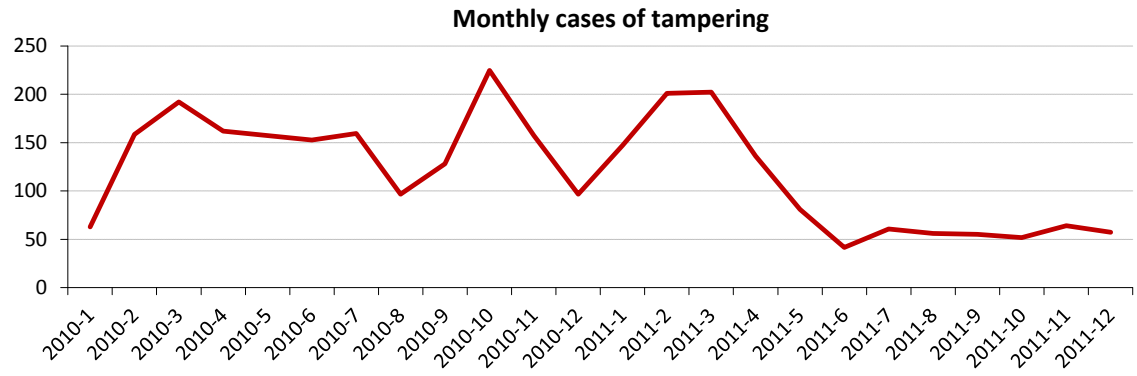


Figure 33. Cases of ATM tampering – monthly figures – index number (2009-1=100)

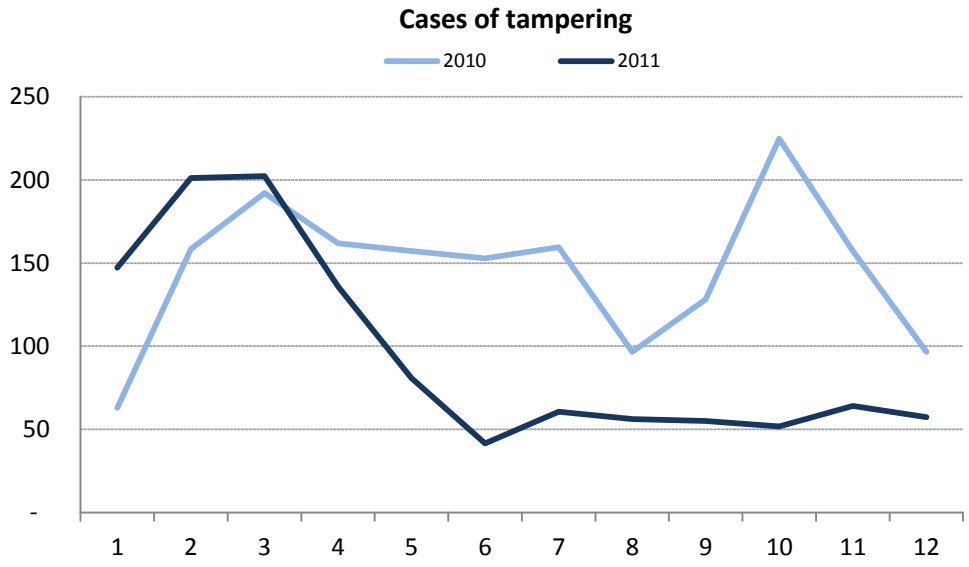


Figure 34. Cases of ATM tampering – monthly figures – index number (2009-1=100)

Cases of ATM tampering by type

Among the types of tampering, *Skimmer installation* is the main category (Table 19, Figure 35), although it continued to decline in incidence, from 69% in the first half of the year to 50% in the second half of the year. The *Skimmer installation* type also declined constantly in absolute terms (from 61.3 to 17.6), thus representing the decisive cause of the downtrend signalled at the beginning of the paragraph (-34% in the 2010-2011 transition). *Tampering with card reader* presents a composition that fluctuates within the range 11%-22%. The increase was significant for the category *Other types*, which in both halves of 2011 showed compositions with values nearly twice those of the first half of 2010.

Cases of ATM tampering by type

	1H 2009 total = 100				2009 total = 100		% chg.
Number	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011	
Skimmer installation	61,3	44,0	30,7	17,6	56,3	25,8	-54,1%
Tampering with card reader for access to the internal premises where an ATM is located	10,5	13,3	18,0	3,7	12,7	11,6	-8,6%
Other	17,5	29,8	32,9	13,5	25,3	24,8	-1,9%
Total	**89,3**	**87,1**	**81,6**	**34,8**	**94,4**	**62,3**	**-34,0%**

Percent composition	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011
Skimmer installation	69%	51%	38%	50%	60%	41%
Tampering with card reader for access to the internal premises where an ATM is located	12%	15%	22%	11%	13%	19%
Other	20%	34%	40%	39%	27%	40%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 19. Cases of ATM tampering by type – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

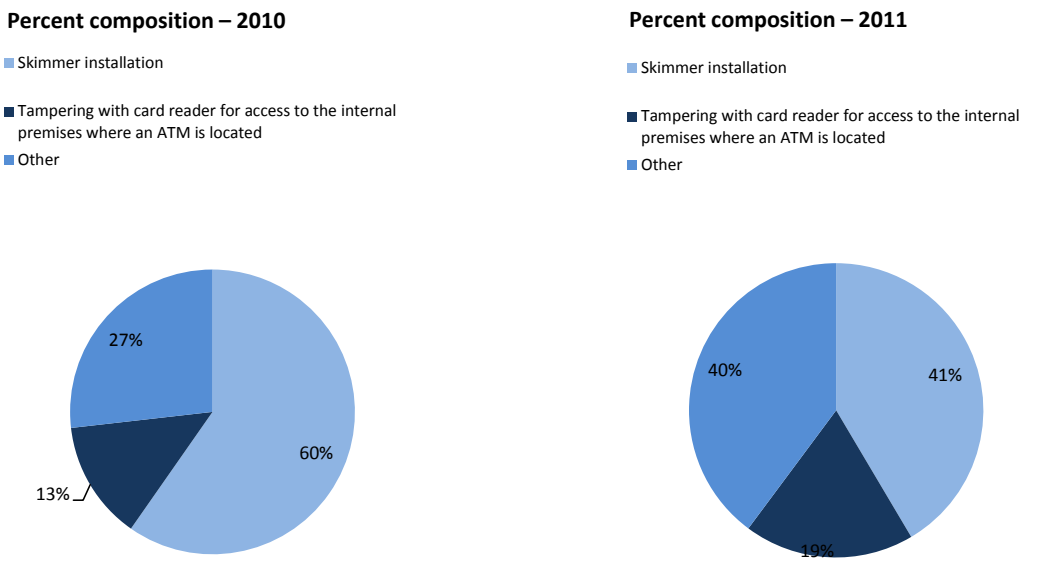


Figure 35. Cases of ATM tampering by type – 2010 and 2011 – percent composition

PIN capture methods

Table 20 and Figure 36 illustrate the data concerning the composition of cases of tampering observed in the period 2010-2011 as a function of PIN capture methods[33,34]. The use of *Miniature video cameras* represents the most frequent method of capture in each of the half-years observed (in the second half of 2010, it occupied this position along with the *Overlaid keyboard* method). The frequency of this method is declining in relative terms (composition), and especially in absolute terms (expressed in terms of the total for the first half of 2009)[35]. In the transition from 2010 to 2011, there was a decrease of over 50%. There was an increase in the values of the weights of the *Overlaid keyboard* method in the transition from the first to the second half of 2010 and, at the annual level, the weights of the other methods were stationary.

[33]The series of values concerning the method *Remote video or still picture camera* has been revised here with respect to that published in the previous edition of this Report.

[34]The total values do not correspond with those illustrate in the previous rankings (by type) owing to the increased presence of missing items in the classification by PIN capture methods.

[35]See also the note to Table 3.

PIN capture methods

	1H 2009 total = 100				2009 total = 100		% chg.
Number	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011	
Other	1,9	4,1	0,4	3,4	3,2	2,0	0%
Miniature video camera	67,4	27,2	33,3	10,3	51,1	23,6	-54%
Overlaid keyboard	11,6	27,3	22,1	9,4	21,1	17,0	-19%
Remote video or still picture camera	1,1	0,2	0,2	0,4	0,7	0,3	-19%
Total	**82,0**	**58,8**	**56,0**	**23,4**	**76,1**	**42,9**	**-57%**

Percent composition	1H 2010	2H 2010	1H 2011	2H 2011	2010	2011
Other	2%	7%	1%	14%	4%	5%
Miniature video camera	82%	46%	60%	44%	67%	55%
Overlaid keyboard	14%	46%	39%	40%	28%	40%
Remote video or still picture camera	1%	0%	0%	2%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 20. Cases of ATM tampering by type – half-yearly figures (1H 2009 total = 100) and annual figures (2009 total = 100)

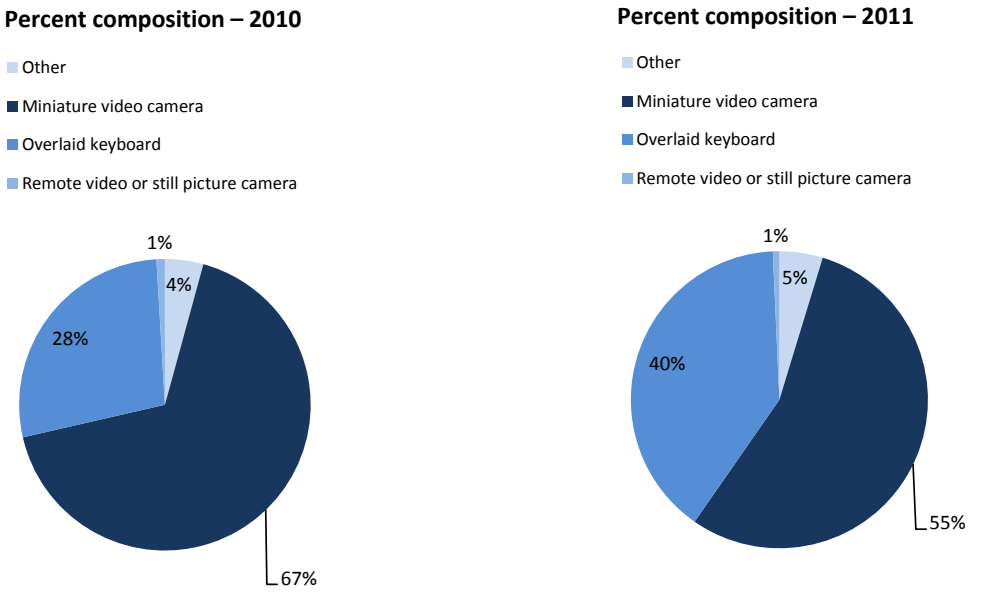


Figure 36. Cases of tampering with ATMs by PIN capture method – 2009 and 2010 – percent composition

Criminological note (*)

The data observed indicate that there has been a significant increase in the use of remote techniques among criminal modus operandi.

Such a situation ensures greater ease for the perpetrator, inasmuch as he or she does not need to operate in public places often monitored by surveillance systems placed in the perimeter areas and immediate vicinity of banks.

In reference to the methods of acquiring information entered by customers, there is evidence that the constant evolution of video-acquisition technologies, which are increasingly available at very low cost, allows even non-professionals to engage in criminal actions.

The risks associated with the acquisition of information entered by customers may be reduced significantly by implementing "biometric identification" systems based on recognition of an individual's unique characteristics. The main benefits of the use of such systems are:

- convenience: biometrical identification eliminates the need to use keyboards or cards and to memorise passwords; and
- security: biometric identification eliminates the risk of unauthorised access through borrowed or counterfeit keys (or cards) and compromised passwords.

In the popular wisdom, biometrical data are almost always associated with a perception of high security.
Finally, consider the very significant contribution offered by technological theories to the repression of certain types of crimes. Thorough observation of the physical spaces that are the theatre of criminal actions has allowed new dissuasion techniques to be prepared and has even resulted in a significant reduction in successful attempts.

(*) University of Molise – Information Technology Research and Teaching Centre (CADRI) and the Italian Criminology Laboratory.

Cases of ATM tampering by geographical area

Half-yearly tampering rate (cases of tampering observed in 180 days compared to average number of ATMs operational dur

	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
North-west	1,97%	2,25%	2,06%	1,02%	2,08%	1,44%
North-east	1,01%	0,99%	0,80%	0,55%	0,96%	0,55%
Centre	2,73%	2,49%	2,10%	0,93%	2,57%	1,42%
South	1,51%	0,74%	1,91%	0,53%	0,98%	0,82%
Islands	0,63%	0,77%	0,84%	0,83%	0,49%	0,64%
Total	1,51%	1,49%	1,40%	0,59%	1,50%	0,99%

Table 21. Cases of ATM tampering by geographical area – half-yearly and annual figures – half-yearly tampering rate

Table 21 and Figure 37 present the half-yearly tampering rates in relation to the geographical breakdown into five areas. Rates are calculated as the ratio of the number of cases of tampering observed in a period of 180 days to the average number of ATMs operational during that same period[36]. In the specific rate for each area, events (cases of tampering) and operational ATMs refer to that same area. In relation to a given period of time, the rate expresses the frequency with which a generic ATM is tampered with. Comparisons between these rates may generally only be made when the period of time underlying the index is of the same length, and thus the observed rate during a year may be compared with the observed rate during a half-year only if calculated in relation to an equal period of time. In this analysis, a period of 180 days has been chosen as the reference period. In relation to 2010, the values for the half-yearly rate observed in the first half of the year, the second half of the year and the entire year present essentially the same values: 1.51%, 1.49% and 1.50%, respectively. This implies that tampering frequency levels (for a period of 180 days) remained unchanged at approximately 1.5% and that the annual frequency (for a period of 360 days) was approximately 3%. The intra-annual performance in 2011 was entirely different. In the first half of the year, levels were in line with the preceding half-yearly periods, whereas in the second there was a general decline that was especially accentuated for the South and irrelevant for the Islands. In relation to 2010, the highest tampering rates are present in the Centre (2.6%) and North-west (2.1%). The remaining areas present rates below the national average (1.5%), and, in particular, below 1%. Figure 38 presents an illustration of the percent

[36] The number of ATMs that have been tampered with is as recorded in the SIPAF Archive, on the basis of detailed information. The number of operational ATMs (compromised and uncompromised) was supplied by the Bank of Italy at the same levels of aggregation presented in the Report.

composition of cases of tampering observed in 2010. The events observed in the North-west and Centre account for nearly 80% of the total.

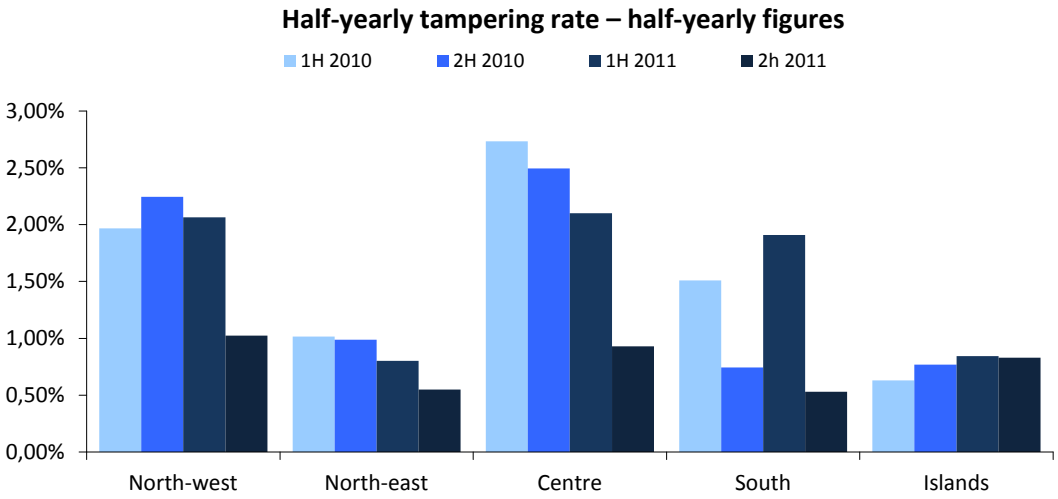


Figure 37. Cases of ATM tampering by geographical area – half-yearly figures – half-yearly tampering rate

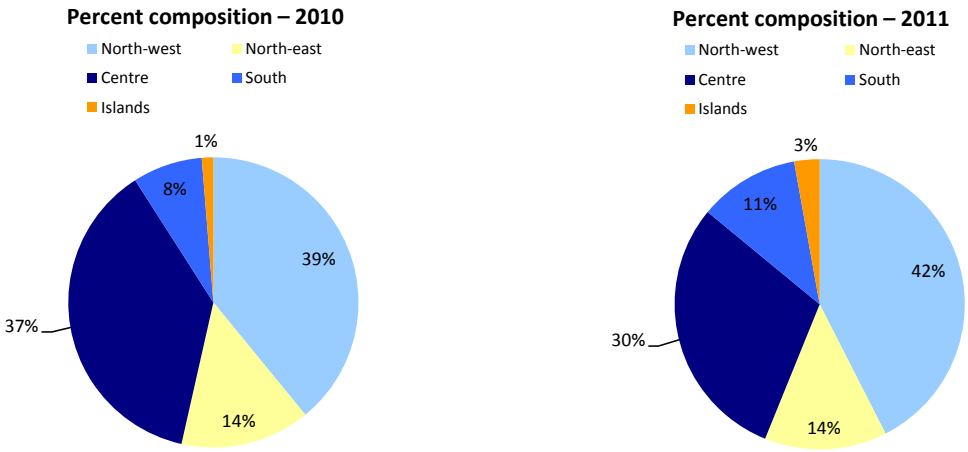


Figure 38. Cases of tampering with ATMs by geographical area – 2010 and 2011 – percent composition

Cases of ATM tampering by region

Half-yearly tampering rate (cases of tampering observed in 180 days compared to average number of ATMs operational during

Region	1H 2010	2H 2010	1H 2011	2h 2011	2010	2011
Piedmont	3,02%	2,80%	1,93%	1,03%	2,91%	1,25%
Valle d'Aosta/Vallée d'Aoste	0,00%	3,27%	0,00%	0,00%	1,50%	0,00%
Lombardy	1,46%	1,95%	2,19%	0,98%	1,70%	1,54%
Trentino-Alto Adige	0,67%	0,70%	0,99%	0,00%	0,69%	0,49%
Veneto	0,77%	0,64%	0,91%	0,36%	0,70%	0,59%
Friuli-Venezia Giulia	0,14%	0,00%	0,57%	0,00%	0,07%	0,29%
Liguria	2,10%	2,36%	1,67%	1,36%	2,01%	1,42%
Emilia Romagna	1,49%	1,47%	0,67%	0,79%	1,43%	0,59%
Tuscany	2,03%	1,64%	1,74%	0,93%	1,78%	1,24%
Umbria	1,11%	1,67%	0,52%	0,00%	1,27%	0,26%
Marche	1,59%	0,96%	0,70%	1,09%	1,27%	0,79%
Lazio	3,85%	3,90%	3,16%	0,88%	3,87%	2,01%
Abruzzo	2,93%	1,12%	1,03%	0,59%	1,99%	0,65%
Molise						
Campania	1,50%	0,69%	2,56%	0,25%	1,05%	1,38%
Puglia	0,34%	0,66%	0,71%	0,75%	0,41%	0,43%
Basilicata	0,00%	0,34%	0,00%	0,77%	0,17%	0,38%
Calabria	0,00%	0,00%	1,62%	0,62%	0,00%	0,47%
Sicily	0,56%	0,77%	0,84%	1,00%	0,49%	0,74%
Sardinia	1,23%	0,00%	0,00%	0,28%	0,55%	0,14%
Total	**1,51%**	**1,49%**	**1,40%**	**0,59%**	**1,50%**	**0,99%**

Table 22. Cases of ATM tampering by region – half-yearly and annual figures – half-yearly tampering rate

In 2010, at the regional level (Table 22), the highest tampering rates were seen in Lazio (3.9%), Piedmont (2.9%), Abruzzo and Liguria (2%). Tuscany, Lombardy and Valle d'Aosta were below 2% but above the national average. All three regions that constitute the North-West present significant tampering rates. The rates examined during the half-yearly periods of observation did not remain at all stable. The rate for Valle d'Aosta only took on a significant value in the second half of 2010[37]. The rates for Tuscany gradually fell by nearly one-half. In the fourth half-year of observation, Lazio fell to values equal to one-fourth of those of the first two half-yearly periods (and Piedmont to one-third). These trends are illustrated on the regional map in Figures 39 and 40.

[37] This region presents a reduced geographical extent and consequently a limited number of ATMs potentially subject to attack. The appearance/disappearance of the phenomenon on one or more of these ATMs rapidly and significantly activates/de-activates the values of the indicator illustrated here.

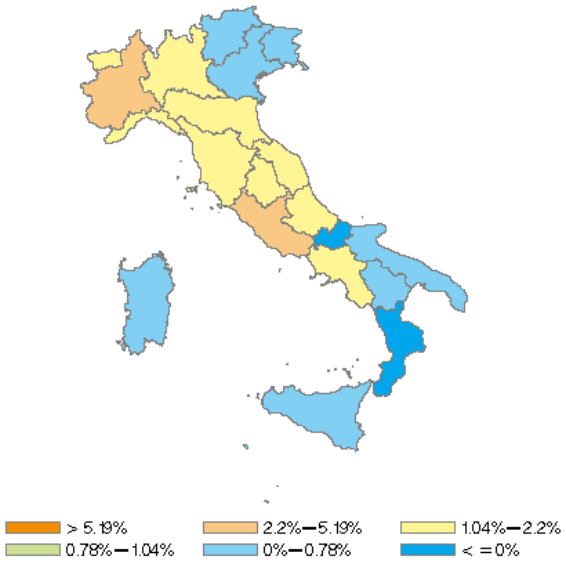


Figure 39. Cases of ATM tampering by region – 2010 – half-yearly tampering rate

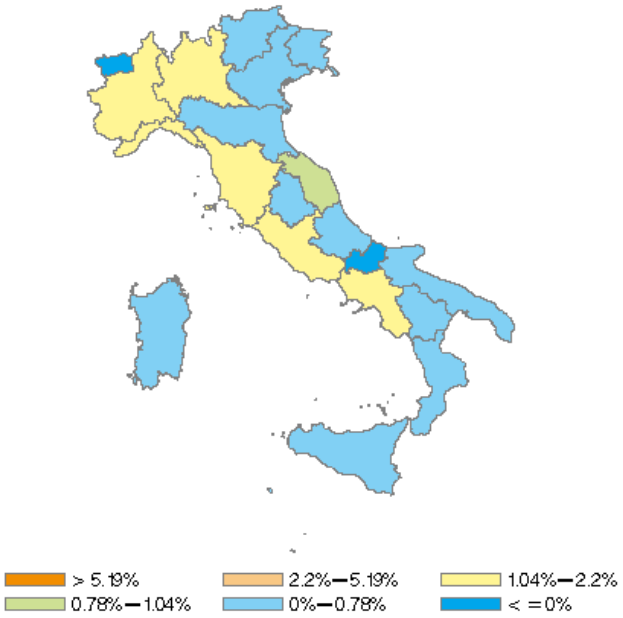


Figure 40. Cases of ATM tampering by region – 2011 – half-yearly tampering rate

Criminological note (*)

The analysis of the data indicates a gradual reduction in cases of ATMs tampering throughout Italy, owing both to the heightened intrinsic security of ATMs and to more incisive, highly organised monitoring of the premises where they are installed.

The presence of a low tampering rate in areas of Southern Italy historically characterised by the presence of forms of mafia-style organised crime would seem to support the hypothesis of greater control of the territory exercised by the foregoing forms of criminality and, more generally, control of the circulation of money.

(*) University of Molise – Information Technology Research and Teaching Centre (CADRI) and the Italian Criminology Laboratory.

6.3. Revoked merchant agreements

The phenomenon of revoked merchant agreements presented an increase of 19% in 2011 compared to 2010. During 2010, the monthly value fluctuated in the range 20-50 (Table 23 and Figure 41). Then, in 2011, it fluctuated within a range of higher values (43-64) until September, after which, in October, it began to fall dramatically and unexpectedly (zero revocations in December 2011). There do not appear to be any seasonal phenomena at a monthly level[38].

Merchant agreement revocations

a – Index number (2009 1 = 100) **(2009=100)**

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Total
2010	38	47	36	29	39	39	45	21	34	46	42	34	56
2011	57	45	62	49	61	43	64	49	55	23	27	0	67

b – Percent composition – 2009

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Total
2010	8%	10%	8%	6%	9%	9%	10%	5%	8%	10%	9%	7%	100%
2011	11%	8%	12%	9%	11%	8%	12%	9%	10%	4%	5%	0%	100%

c – Percent changes compared to previous month

Year / Month	1	2	3	4	5	6	7	8	9	10	11	12	Total
2010		25%	-25%	-18%	33%	0%	15%	-53%	61%	34%	-9%	-20%	
2011	68%	-21%	39%	-20%	23%	-30%	49%	-23%	12%	-59%	18%	-99%	19%

Table 23. Merchant agreement revocations – monthly figures – index number, composition and percent change

[38] The value of the index number for December 2010 differs from that published in the previous version of the Report owing to the submission of data after the date of publication of the Report.

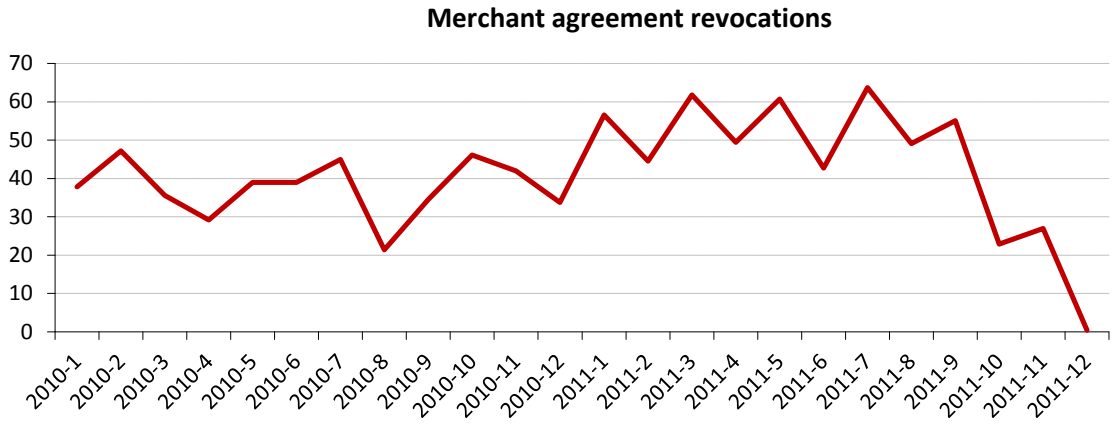


Figure 41. Merchant agreement revocations – monthly figures – index number (2009-1=100)

Merchant revocations by reason

	2009 total = 100	
	2010	2011
Participation by merchant in activities that the reporting company regards as suspect on the basis of the audits, controls or inquiries it has conductedeffettuati	31,1	25,4
Generic security reasons	25,2	41,3
Total	**56,2**	**66,7**

Table 24. Merchant agreement revocations by reason – 2010 and 2011 (2009 total = 100)

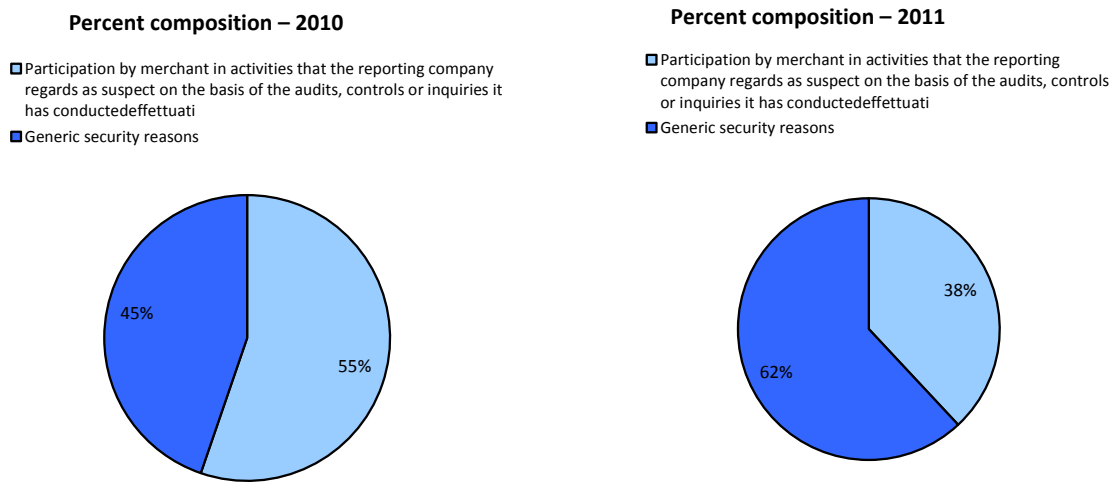


Figure 42. Merchant agreement revocations by justification – 2010 and 2011 – percent composition

Table 24 illustrates the distribution of merchant agreement revocations by justification. As may be noted (Figure 42), in 2010 the two categories did not present highly dissimilar weights, whereas in 2011 the category *Generic security reasons* (62%) prevailed significantly over the other. This was the category that resulted in the increase in revocations witnessed in the transition from 2010 to 2011.

Merchant agreement revocations by geographical area

	2010		2011	
	%	% inc.	%	% inc.
North-west	28%	0,09%	21%	0,08%
North-east	13%	0,04%	9%	0,04%
Centre	19%	0,06%	23%	0,10%
South	30%	0,13%	27%	0,17%
Islands	11%	0,08%	20%	0,21%
Total	**100%**	**0,08%**	**100%**	**0,10%**

Table 25. Merchant agreement revocations by geographical area – 2010 and 2011 – breakdown of total revocations and percent incidence on total merchant agreements

The geographical distribution of merchant agreement revocations is presented in Table 25, according to a geographical division into five areas. Table 25 shows both the percent frequency (incidence) of revocations compared to total revocations of active merchants and the percent composition compared to total revoked merchant agreements[39]. The first indicator describes the frequency, or the probability, according to which, over the period of one year, a merchant agreement was revoked for each active merchant agreement during the period (see Figure 43). High (low) incidences do not necessarily correspond to high (low) revocation volumes; rather, revocation volumes also depend on the stock of active merchant agrements. This information is presented in the percent composition, which constitutes the other indicator outlined in the table and shown in Figure 44. In 2010, the geographical area with the highest incidence of merchant agreeement revocations was the South (0.13%), followed, in order of incidence, by the North-west and Islands (0.09%-0.08%). The North-west was the area with the lowest incidence: 0.04%, equal to one-half of the national average (0.08%). The South is also the area with the greatest critical issues in terms of composition: 30% of total merchant agreements revocations are concentrated in this area. The Islands, while presenting incidences in excess of those of the Centre and North-east, were below these areas in terms of volume. In the comparison between the figures for 2010 and 2011 (Figure 43), it may be observed that incidence levels either essentially remained unchanged (in the North) or increased by approximately 70% (Centre) to more than 160% (the Islands). In absolute terms (expressed in terms of the 2009 total), there was a general decline in volumes in the areas of the North and a significant increase in the Centre and Islands. The changes

[39]The number of revoked agreements is derived from the SIPAF Archive, on the basis of detailed information. The number of active agreements has been supplied by the Bank of Italy at the levels of aggregation presented in the Report.

resulted in new weights for the Islands and North-west, whereas those of the other areas remained essentially stable. The concentration of merchant agreement revocations in the North (North-east and North-west) was on the decline, but on the rise in the other areas.

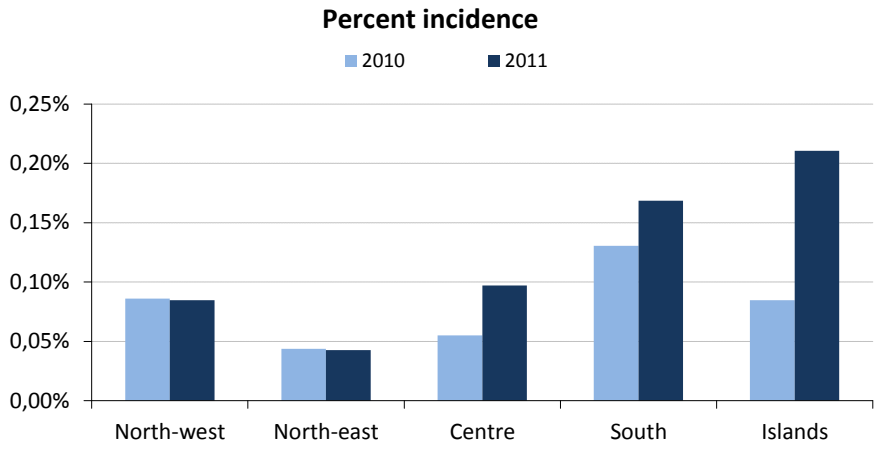


Figure 43. Merchant agreement revocations by geographical area – 2009 and 2010 – percent incidence on total merchant agreement

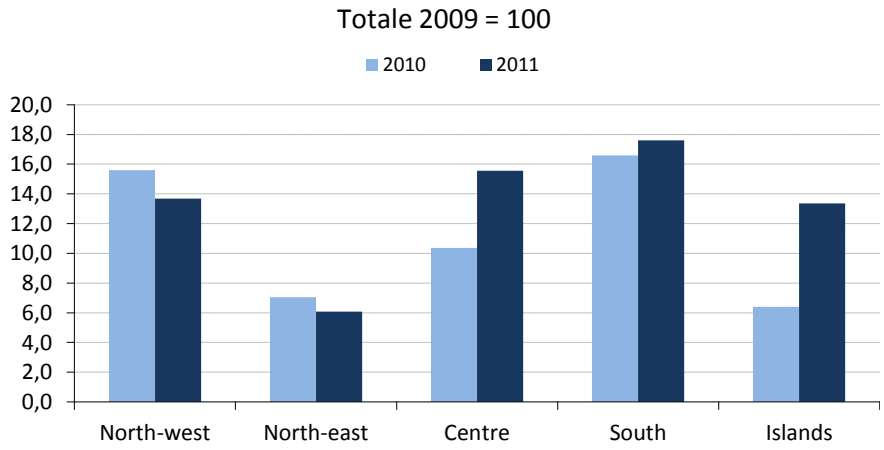


Figure 44. Merchant agreement revocations by geographical area – 2009 and 2010 (2009 total = 100)

Merchant agreement revocations by region

	Total 2009 = 100		% incidence	
Region	2010	2011	2010	2011
Piedmont	3,6	2,8	0,07%	0,06%
Valle d'Aosta/Vallée d'Aoste	0,0	0,0	0,00%	0,00%
Lombardy	11,5	10,2	0,00%	0,00%
Trentino-Alto Adige	0,1	0,3	0,01%	0,02%
Veneto	4,1	2,7	0,07%	0,05%
Friuli-Venezia Giulia	0,0	0,6	0,00%	0,04%
Liguria	0,5	0,7	0,02%	0,04%
Emilia Romagna	2,8	2,5	0,00%	0,00%
Tuscany	1,6	2,0	0,00%	0,00%
Umbria	0,1	0,6	0,01%	0,05%
Marche	2,7	1,7	0,11%	0,08%
Lazio	6,0	11,3	0,07%	0,15%
Abruzzo	0,9	0,7	0,05%	0,04%
Molise	0,1	0,0	0,03%	0,02%
Campania	12,0	13,4	0,25%	0,34%
Puglia	1,6	2,3	0,04%	0,08%
Basilicata	0,0	0,0	0,00%	0,01%
Calabria	2,0	1,2	0,12%	0,09%
Sicily	5,9	13,0	0,00%	0,00%
Sardinia	0,5	0,4	0,00%	0,00%
Total	**56,0**	**66,3**	**0,08%**	**0,10%**

Table 26. Merchant agreement revocations by region – 2010 and 2011 – values (2009 total=100) and percent incidence on total merchant agreement

Table 26 presents the results of a regional disaggregation of the information. It shows both percent incidences, which are displayed in a geographical map in Figure 45 and Figure 46, and absolute levels (expressed in terms of the 2009 total)[40]. In 2010, Campania was the region with the highest incidence of merchant agreement revocations at 0.25%, more than three times higher than the national average (0.08%). It should be considered that the four following regions – in descending order, Calabria, Lombardy, Marche and Sicily – have incidences of less than one-half of that of Campania: 0.10%-0.12%. These regions are the cause of the high incidence of the South and North-west areas, examined in the previous analysis of 2010. In more than one-half of the regions, incidence levels are below 0.5%. The volume of revocations observed in the South was in turn 71% concentrated in the Campania region, which accounted for one-fifth of total merchant agreement revocations in Italy (21% in 2010). Nearly equal weights were concentrated in Sicily and Lazio, although the former had an incidence 43% higher than the latter (0.10% compared to 0.07%). In general, the distribution of merchant agreement revocations by region is quite concentrated. In 2010, over 60% of merchant agreement revocations pertained to just four regions: Lombardy, Lazio, Campania and Sicily. The remaining 40% of revocations were concentrated in the remaining regions, in each of which the concentration does not exceed 7%. The weights of the regions with the greatest critical issues did not show signs of change in the transition to 2011 – in fact, Lazio and Sicily showed a two-fold increase in values. These regions that present a significant increase in levels (here expressed in terms of the 2009 total) also present a larger increase in incidences. Among the regions with non-negligible incidence in 2010 (coloured yellow), Marche was the only region to present a significant decline.

[40] See also the note to Table 3.

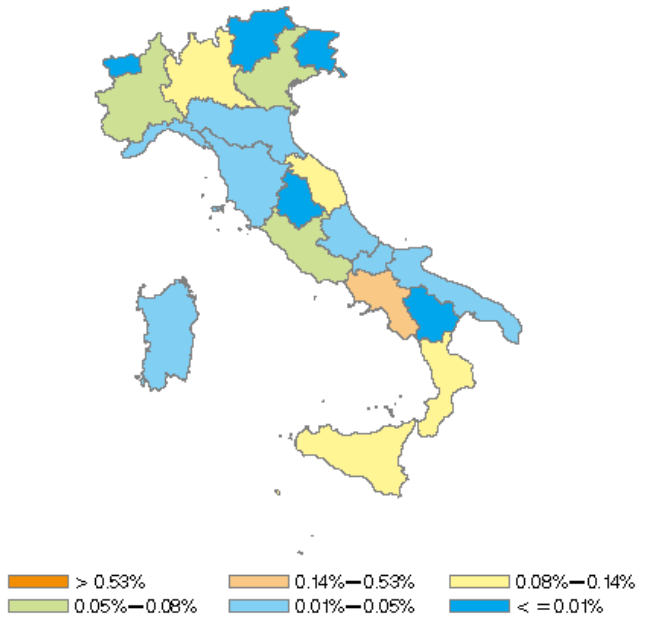


Figure 45. Merchant agreement revocations by region – 2010 – percent incidence on total merchant agreements

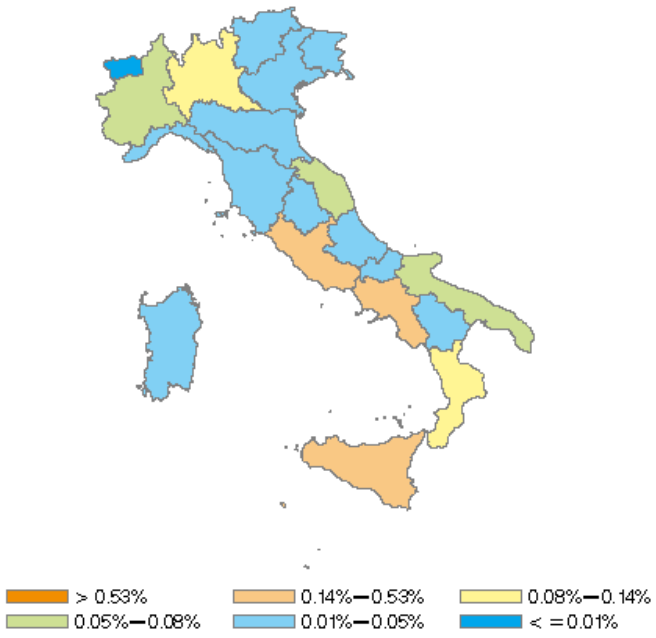


Figure 46. Merchant agreement revocations by region – 2011 – percent incidence on total merchant agreements

Criminological note (*)

The distribution of merchant agreement revocations is concentrated in regions in which there is a presence of mafia-style and camorra-style organised crime.

This circumstance is symptomatic of the presence in these areas of practices of extortion and/or usury of which participating merchants are the victims.

From the first sites specifically created for the cloning of credit cards and trading in stolen bank information, up to the most recent known cases (probably already ancient history, considering the speed at which crime evolves on the Web), in which this trade becomes managed by full-fledged criminal organisations.

The criminal organisations that have traditionally concentrated on other businesses, such as drugs, are now beginning to set up shop in cyberspace. For example, the South American cartels now use computers a great deal and can carry out highly complex digital operations. They no longer focus on credit card trafficking, but rather targeted attacks on specific objectives. On most occasions, their aim is to steal specific information or plans, while in others it is to destroy or damage computer systems.

(*) University of Molise – Information Technology Research and Teaching Centre (CADRI) and the Italian Criminology Laboratory.

CHAPTER VII

Other Countries' Experiences

At the international level, there are various entities – most of which are private – that collect and analyse data regarding payment card fraud. Among these, countries such as the **United Kingdom, France and Australia** publish annual statistics that outline the phenomenon in a detailed manner.

In order to obtain a better understanding of the dynamics of payment card fraud in Italy, it is helpful to compare the data illustrated in the previous chapter with those published by the countries cited above. However, as mentioned above in Chapter 3, the various countries have not established a common definition of fraud or the circumstances in which it may be committed.

Accordingly, in order to undertake consistent comparisons, data were compared when the phenomena identified were found to have been similarly defined and analysed.

The next section thus presents an illustration of the main statistics published by the United Kingdom, France and Australia regarding the payment card fraud phenomenon, whereas the section thereafter compares the data found to be consistent with those collected by the Office.

7.1. UNITED KINGDOM, FRANCE and AUSTRALIA

UNITED KINGDOM

The report on payment card fraud in 2011 for the United Kingdom (*Fraud the Facts 2012*) is drafted by FFA (Financial Fraud Action UK) and the UK Card Association. FFA represents financial service companies, coordinates fraud prevention measures and collaborates with the UK Card Association, a leading association that represents the payment card market and includes all major issuers of debit, credit and prepaid cards.

The report examines fraud involving payment cards issued in the United Kingdom committed in national territory and abroad in 2011.

In the United Kingdom, the losses sustained by payment cards due to fraud amounted to approximately GBP 341 million, out of total transaction volumes of GBP 559 billion.

Most cases of fraud were committed within United Kingdom territory (76%), whereas the remaining 24% were committed abroad, of which approximately one-fourth in the United States.

Domestic / international unrecognised transactions

Values in millions of GBP

	Value ($)	%
UK	261.0	76.5%
International	80.0	23.5%
Total	**341.0**	**100.0%**

Source: Prepared using data by the UK Cards Association, 2012.

Table 27. Value of unrecognised transactions by geographical area of expenditure – 2011 – percent composition

The types of fraud considered in this report are: card-not-present (when card data are used without the physical presence of the card, for example in payments via the Internet, mail or telephone), counterfeit card, card lost or stolen, card used with a false identity and card not received.

Unrecognised transactions by type
Cards issued in the UK

a – Values in millions of GBP

	2011	%
Counterfeit card	36.1	10.6%
Card not received	11.3	3.3%
Card lost or stolen	50.1	14.7%
Card not present / Card number usurped	220.9	64.8%
Card used with false identity	22.5	6.6%
Other		
Total	340.9	100.0%

Source: Prepared using data by the UK Cards Association, 2012.

Table 28. Value of unrecognised transactions by type – 2011 – percent composition

FRANCE

The data concerning France are presented in the report prepared by the "Observatoire de la Sécurité des Cartes de Paiement" referring to 2011. The Observatoire (Monitoring

Centre) was instituted by Law No. 2001-1062 of 15 November 2001. Its function is to foster the exchange of information and coordination of all interested parties (consumers, merchants, issuers and public authorities) in order to permit the proper functioning and security of card-based payment systems.

This report contains an analysis of fraud pertaining to cards issued in France perpetrated both within national territory and abroad, but also fraud committed in France through cards issued abroad.

In 2011, 85.7 million payment cards were in circulation in France.

Total transaction volumes came to €504 billion and total fraud to €306.8 million, resulting in a fraud rate of 0.061%.

Total fraud within national territory amounted to €211.5 million (69%), whereas total fraud committed abroad (on cards issued in France) stood at €95.3 million (31%).

Domestic / international unrecognised transactions

Values in millions of euro

	Value (€)	%
France	211.5	68.9%
International	95.3	31.1%
Total	**306.8**	**100.0%**

Source: Prepared using data from Observatoire de la Sécurité des Cartes de Paiement, 2012.

Table 29. Value of unrecognised transactions by geographical area of expenditure – 2011 – percent composition

The French report separately analyses proximity payments (POS terminals and automatic machines such as fuelling stations and ticket distributors), remote payments (card not present) and ATM withdrawals.

Unrecognised transactions by channel

Values in millions of euro

	Value	%	% inc.
Proximity payments	76.7	25.0%	0.023%
Remote payments	174.6	56.9%	0.373%
ATM withdrawals	55.4	18.1%	0.045%
Total	306.7	100.0%	0.061%

Source: Prepared using data from *Observatoire de la Sécurité des Cartes de Paiement*, 2012.

Table 30. Value of unrecognised transactions by channel – France as geographical area of expenditure – 2011 – value and percent composition

The French report distinguishes between five different categories of fraud: cards lost or stolen, cards not received, counterfeit cards, card number usurped and a residual category, "other" (in which one finds primarily fraud relating to the opening of an account using a stolen identity).

Unrecognised transactions by channel
Cards issued in France

a – Values in millions of euro

	2011	%
Counterfeit card	4,9	2,3%
Card not received	1,1	0,5%
Card lost or stolen	76,3	36,1%
Card not present / Card number usurped	126,6	59,8%
Card used with false identity		
Other	2,7	1,3%
Total	211,6	100,0%

Source: Prepared using data from *Observatoire de la Sécurité des Cartes de Paiement*, 2012.

Table 31. Value of unrecognised transactions by type – 2011 – percent composition

AUSTRALIA

The data concerning Australia are presented in the statistics *Fraud Perpetrated on Cheques and Plastic Cards 2012* prepared by the Australian Payment Clearing Association (APCA), the purpose of which is to improve the security, reliability, convenience and efficiency of the Australian payments system.

The APCA presents data regarding debit, credit and prepaid cards. The data concerning credit card and prepaid card fraud are supplied to the APCA by the major circuits operating in Australia and cover almost all credit card activity. Three types of fraudulent transactions are considered: fraud involving cards issued in Australia and used within national territory, fraud involving cards issued in Australia and issued abroad and fraud involving cards issued abroad and used in Australia.

The data regarding debit cards are supplied by CECS (the Consumer Electronic Clearing System), whose members issue debit cards or render services pertaining to debit card transactions. It is estimated that CECS members manage almost all debit card activity in Australia. Fraud extends to all types arising from transactions undertaken on the Australian domestic network.

Among the various types of fraud, the Australian report distinguishes between those that affect debit cards, credit cards and prepaid cards.

Total transaction volumes came to AUD 571 billion and total fraud to AUD 292 million, resulting in a fraud rate of 0.051%.

Total fraud within national territory amounted to AUD 119 million (40.7%), whereas total fraud committed abroad (on cards issued in Australia) stood at AUD 173 million (59.3%).

Domestic / international unrecognised transactions

	Number	%	Value ($)	%
Australia	436,679	37.9%	118,756,252	40.7%
International	715,241	62.1%	173,236,992	59.3%
Total	**1,151,920**	**100.0%**	**291,993,244**	**100.0%**

Source: Prepared using data by the Australian Payment Clearing Association, 2012.

Table 32. Value of unrecognised transactions by geographical area – 2011 – percent composition

The categories of fraud involving debit cards are: card lost or stolen, card not received, counterfeit card and a residual category, "other," that also includes application fraud and the use of false identities.

The categories of credit card and prepaid card fraud examined are: card lost or stolen, card not received, application fraud (when a fictitious identity or another person's identity is used to provide false information during the application process to open an account), counterfeit card, card not present fraud and a residual category, "other," that includes, for example, fraud relating to the use of an existing account without the legitimate accountholder's authorisation.

Unrecognised transactions by type

Cards issued in Australia

a – Values in millions of dollars

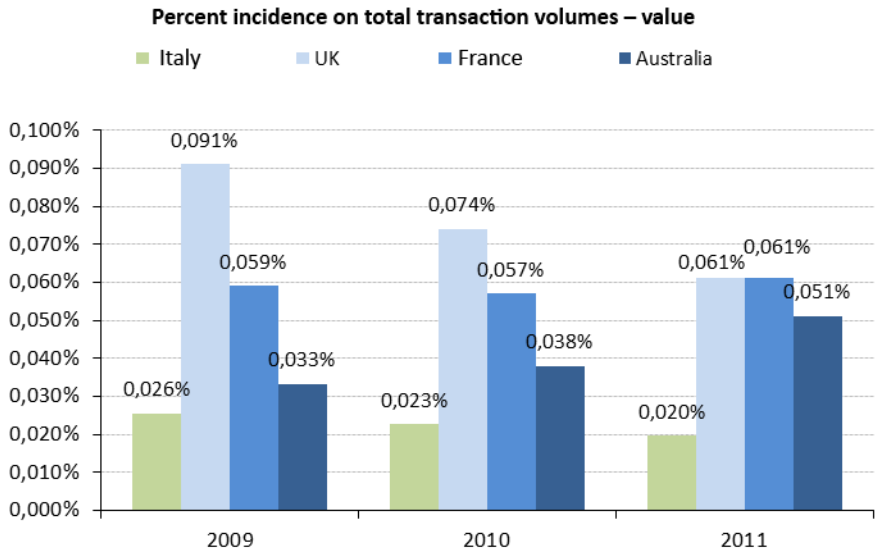
	2011	%
Counterfeit card	66.0	22.6%
Card not received	4.0	1.4%
Card lost or stolen	20.1	6.9%
Card not present / Card number usurped	197.5	67.6%
Card used with false identity	1.0	0.3%
Other	3.4	1.2%
Total	292.0	100.0%

Source: Prepared using data by the Australian Payment Clearing Association, 2012 (only credit, debit and charge scheme cards).

Table 33. Value of unrecognised transactions by type – 2011 – percent composition

7.2. International comparisons

With respect to the international statistics illustrated above, it was first possible to compare the percent incidence of the amount of fraud committed in Italy, UK, France and Australia. The comparison shows that, on an equivalent transaction basis, France and UK sustain more than twice the losses of Italy.



Source: Prepared using data by the Observatoire de la Sécurité des Cartes de Paiement, 2012, UK Cards Association, 2012 and Australian Payment Clearing Association, 2012 (only credit, debit and charge scheme cards).

Figure 47. Value of unrecognised transactions by geographical area of expenditure – Italy, the UK, France and Australia – 2011 – percent incidence

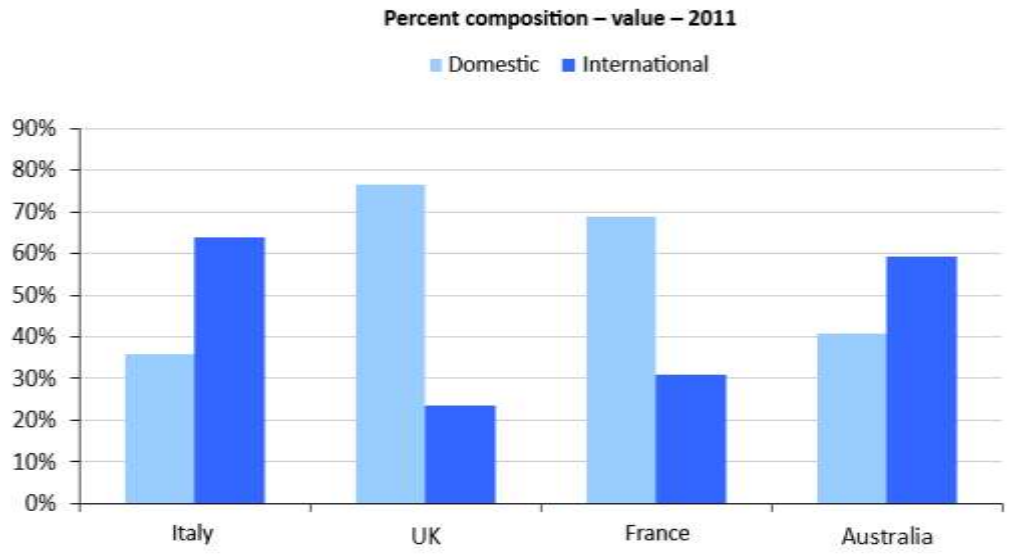
It was then possible to compare the amount of fraud by place of commission, in which Great Britain and France show greater losses on payments made at the domestic level than on those executed abroad. By contrast, in Italy the composition of the amount of fraud is reversed: the losses sustained abroad far exceed those sustained in Italy.

Domestic / international unrecognised transactions

	Italy	UK	France	Australia
Domestic	36%	77%	69%	41%
International	64%	23%	31%	59%
Total	**100%**	**100%**	**100%**	**100%**

Source: Prepared using data by the UK Cards Association, 2012, Observatoire de la Sécurité des Cartes de Paiement, 2012 and Australian Payment Clearing Association, 2012 (only scheme credit, debit and charge cards).

Table 34. Value of unrecognised transactions by geographical area of expenditure – Italy, the UK, France and Australia – 2011 – percent composition



Source: Prepared using data by the UK Cards Association, 2012, Observatoire de la Sécurité des Cartes de Paiement, 2012 and Australian Payment Clearing Association, 2012 (only scheme credit, debit and charge cards).

Figure 48. Value of unrecognised transactions by geographical area of expenditure – Italy, the UK, France and Australia – 2011 – percent composition

It was also possible to compare the losses associated with each type of fraud, and Italy was the nation, among those considered, with the highest incidence of losses due to the counterfeiting of payment cards. However, it should be noted that this phenomenon will decline owing to the migration to microchip technology of all payment cards and devices[41]. For Great Britain, France and Australia, the type of fraud associated with the largest amount was the "card-not-present" type. Finally, in each of the countries

[41]The introduction of microchip technology, in addition to increasing payment card security generally, should considerably limit – if not eliminate – cloning. In fact, chips possess encryption algorithms for card authentication that are much more robust than magnetic strip technology. In this regard, see the ECB, 2010, available from its website: http://www.ecb.int/pub/pdf/other/singleeuropaymentsarea201010en.pdf.

considered, card-not-received is the type of fraud with which the smallest losses are associated. As suggested by the UK Card Association[42], this tendency may be attributed to the introduction by financial institutions of the separate transmission of the PIN and payment card, a measure that has fostered a decrease in card-not-received fraud, especially for transactions for which PIN entry is compulsory.

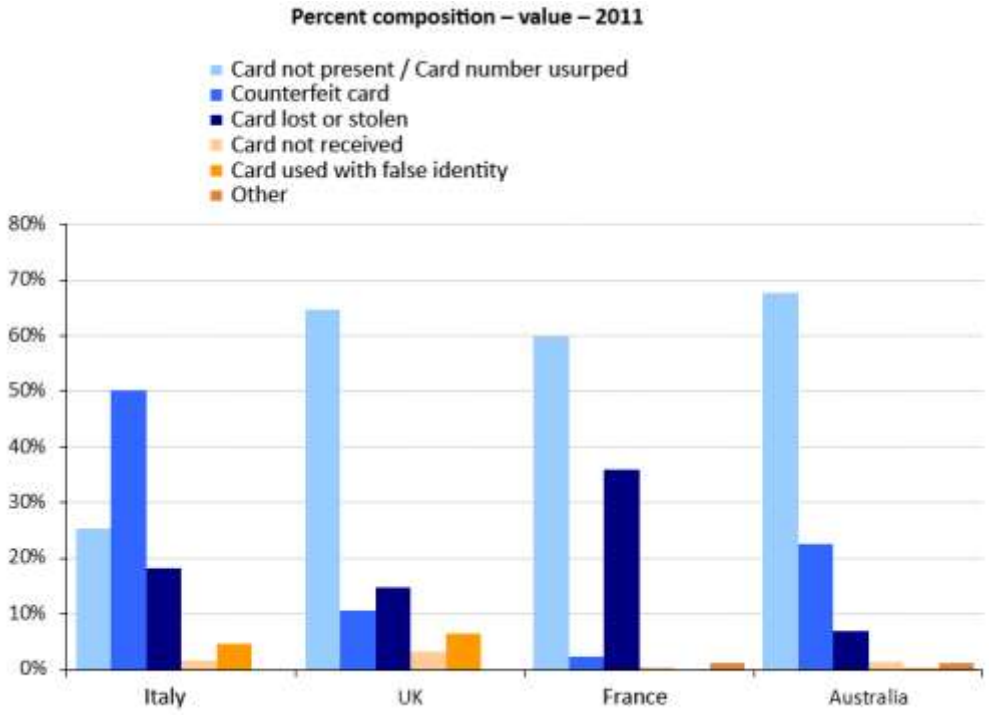
Unrecognised transactions by type

	Italy	UK	France	Australia
	25%	65%	60%	68%
Card not present / Card number usurped				
Counterfeit card	50%	11%	2%	23%
Card lost or stolen	18%	15%	36%	7%
Card not received	2%	3%	1%	1%
Card used with false identity	5%	7%		0%
Other			1%	1%
Total	**100%**	**100%**	**100%**	**100%**

Source: Prepared using data by the UK Cards Association, 2012, Observatoire de la Sécurité des Cartes de Paiement, 2012 and Australian Payment Clearing Association, 2012 (only scheme credit, debit and charge cards).

Table 35. Value of unrecognised transactions by type – Italy, the UK, France and Australia – 2011 – percent composition

[42] Financial Fraud Action UK *et al*. (2012), available from the following website: http://www.financialfraudaction.org.uk/Publications/http://www.financialfraudaction.org.uk/Publications/files/assets/downloads/publication.pdf.



Source: Prepared using data by the UK Cards Association, 2012, Observatoire de la Sécurité des Cartes de Paiement, 2012 and Australian Payment Clearing Association, 2012 (only scheme credit, debit and charge cards).

Figure 49. Value of unrecognised transactions by type – Italy, the UK, France and Australia – 2011 – percent composition

As to payment types, it may be noted that the greatest losses are associated with proximity payments in Italy[43], but with remote payments in France, whereas the latter category is residual in Italy. This tendency is also confirmed by the incidences on total transactions: on an equivalent transaction basis, in France the number of cases of fraud attributable to remote payments is more than twice that in Italy. It follows that the risk of fraud due to this type of payment is markedly higher in France than in Italy. The same applies to withdrawals via ATMs, whereas for proximity payments in Italy the risk of fraud is slightly higher.

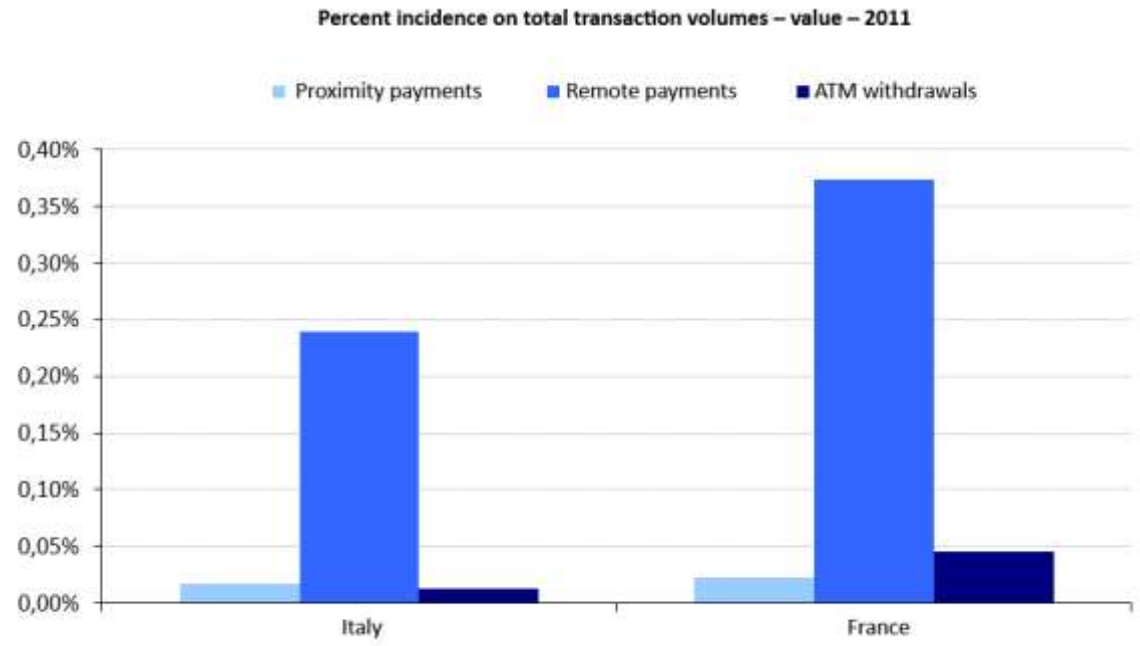
[43]Proximity payments are defined as payments undertaken using POS terminals, whereas remote payments refer to those made without the cardholder's physical presence (Internet, telephone and e-mail).

Unrecognised transactions by channel

	Italy		France	
	%	% inc.	%	% inc.
Proximity payments	38%	0.017%	25%	0.023%
Remote payments	26%	0.239%	57%	0.373%
ATM withdrawals	36%	0.013%	18%	0.045%
Total	**100%**	**0.020%**	**100%**	**0.061%**

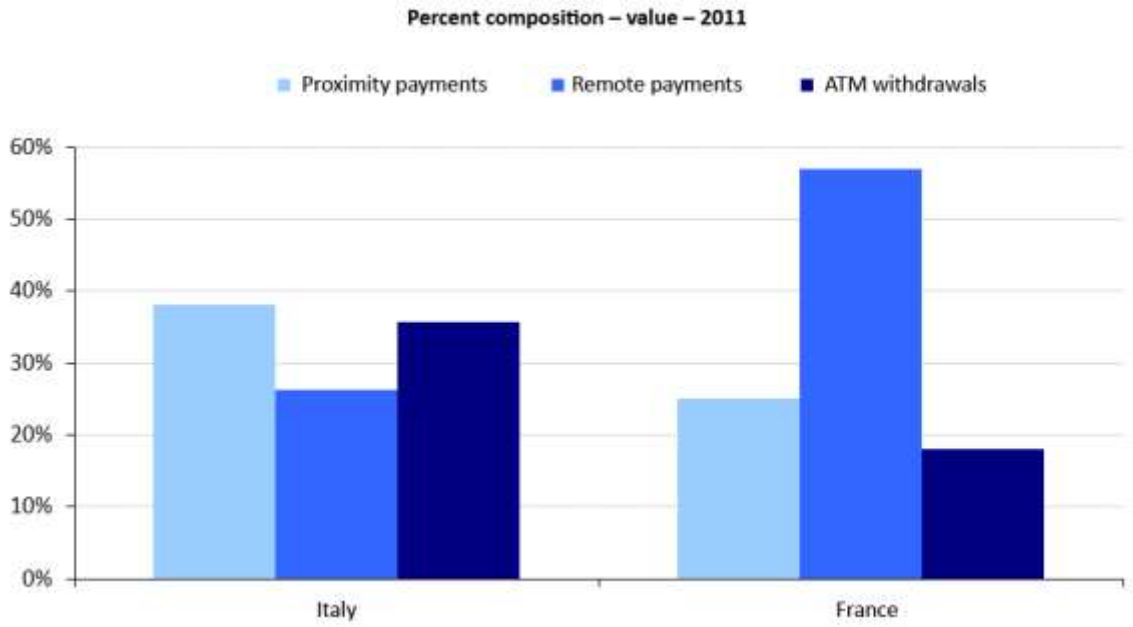
Source: Prepared using data from *Observatoire de la Sécurité des Cartes de Paiement*, 2012.

Table 36. Value of unrecognised transactions by channel – Italy and France – 2011 – percent composition and incidence



Source: Prepared using data from *Observatoire de la Sécurité des Cartes de Paiement*, 2012.

Figure 50. Value of unrecognised transactions by channel – Italy and France – 2011 – incidence



Source: Prepared using data from *Observatoire de la Sécurité des Cartes de Paiement*, 2012.

Figure 51. Value of unrecognised transactions by channel – Italy and France – 2011 – percent composition

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