



RESEARCH DATA CENTER

REX - Remote Execution / Sistema di elaborazione a distanza

***Survey on cross-border transactions in services by
non-financial and insurance firms***

(Direct Reporting)

Methodological note



December 2022

Table of contents¹

Table of contents	2
1. Introduction	3
2. The survey on cross-border transactions in services by non-financial and insurance firms (direct reporting)	3
2.1 General information.....	3
2.2 The sample design	4
2.3 Data collection and the TTN questionnaire	5
2.4 Grossing-up factors	5

¹ By Arcangela De Cata, Marco Di Bella and Flavia Ciccioli.
For further information: RemoteExecution@bancaditalia.it

1. Introduction

This document provides a brief overview of the methodology used in the Bank of Italy's direct reporting survey on cross-border transactions **in services by non-financial and insurance firms**, which is part of the broader 'direct reporting' survey. The data collected is stored in a database made available to users (henceforth 'the database').

The survey is the main source for compiling the 'other services' component of Italy's balance of payments, i.e. the section covering services other than 'travel' and 'transport'.² It should be taken into account that **other sources are also used to compile the "other services" aggregate of the balance of payments**, so that the data available in the database only cover a part, albeit the most important one, of the information on "other services" reported in the balance of payments.

Moreover, it should be noted that **the survey and the sample design were conceived to compile the 'other services' items of the balance of payments at the aggregate level. Therefore, the accuracy of the information may not be guaranteed for all the combinations of variables present in the database, especially for those with a low number of observations, given the intrinsic limitations of the sampling approach.**³

Finally, please note that although the REX database contains data on single firms, which were anonymized, **users will only be able to access aggregate data on no fewer than three firms, in order to ensure the 'non-recognisability', and hence the confidentiality, of the information provided.**

2. The survey on cross-border transactions in services by non-financial and insurance firms (direct reporting)

2.1 General information

The survey on cross-border transactions in services by non-financial and insurance firms is part of the larger 'direct reporting' survey conducted to collect information on Italian resident non-financial firms' transactions and their international investment position.

The direct reporting survey gathers information through four questionnaires with different periodicity.⁴ Three of these focus on financial data: the CAF (*Consistenze Annuali Finanziarie*), which collects data on firms' annual stock of assets and liabilities; the EMF (*Eventi Mensili Finanziari*), on firms' monthly direct investment flows; and the OMF (*Operazioni Mensili Finanziarie*) on firms' monthly financial transactions. Non-financial transactions are instead reported in one quarterly questionnaire, the TTN (*Transazioni Trimestrali Non finanziarie*).

In addition to cross-border transactions in services, the TTN questionnaire also collects information on cross-border transactions in constructions, intangible assets,

² See <https://www.bancaditalia.it/media/notizia/italy-s-balance-of-payments-and-international-investment-position-manual/?com.dotmarketing.htmlpage.language=1>.

³ For a detailed list of the variables, see the document '[Description of the database](#)'.

⁴ For further information on how the questionnaires are filled in and sent out please visit the Bank of Italy's website: <http://www.bancaditalia.it/statistiche/raccolta-dati/direct-reporting/index.html>.

unilateral transfers and salaries exchanged between Italian firms and non-resident entities.

Please note, however, that **the database only contains data on cross-border non-financial transactions in services.**⁵

Data are collected online using a software made available by the Bank of Italy to reporting firms; reports are produced in XBRL format.

2.2 The sample design

The target population of the 'direct reporting' is the entirety of Italian non-financial and insurance firms and corresponds to the corporations registered in Italy's Chambers of Commerce (about one million firms in 2015). The list of firms selected to be part of the TTN sample is restricted to corporations with a turnover exceeding €10 million. So the survey excludes the smallest firms and those not obliged to submit a cash flow statement, such as individual companies, for which cross-border flows are attested to be modest.

In addition to the size (as measured by turnover), the selection criterion takes into account the presence of cross-border settlements made through a bank resident in Italy. This information is used in order to divide the target population into two groups, separating the firms which carried out cross-border transactions from those that did not make such settlements (see Fig. 1). The largest firms of both groups are selected using a cut-off approach: all units above a given threshold are selected (blue areas in Fig. 1), since cross-border transactions are highly concentrated in larger firms.

An analysis of the old reporting system based on bank settlements allowed to determine the two thresholds (€90 million for firms with international settlements and €165 million for the others) in such a way that 95% of cross-border transactions (in value) can be attributed to the two groups.

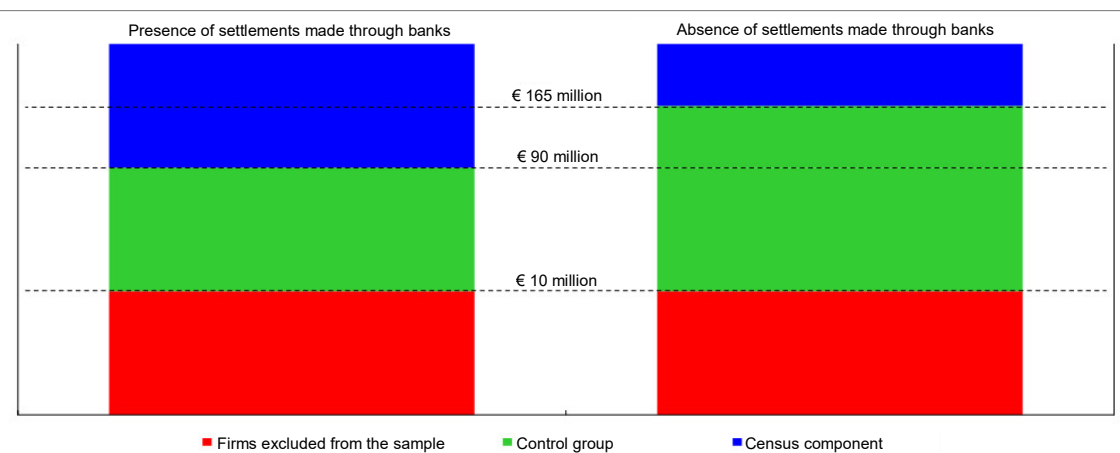
Below those thresholds, two more sub-groups of firms were identified (green areas in Fig. 1): companies with international settlements and turnover between €10 and €90 million; companies without cross-border settlements and turnover between €10 and €165 million. From those groups an additional sample, consisting of about 400 firms, is drawn to monitor potential structural changes in the economic phenomena of interest. In particular, the weight of the smaller firms in the sample is monitored to ensure it does not increase significantly.

The remaining companies (red areas in Fig. 1) - i.e. those with turnover below €10 million - are excluded from the survey, as their contribution to export and import of services is confirmedly negligible.

The TTN sample consists of about 3.300 firms per year, while the total number of firms involved in the 'direct reporting' is approximately 6.500. Until 2012 the sample was drawn annually; starting with the 2013 survey, the sample remains valid for two years. Firms that close down while in the sample are replaced.

⁵ The item 'insurance premiums and claims' is the only exception: these elements are not services *per se*, but are used to estimate insurance services together with data on the balance sheets of insurance companies, coming from ISTAT.

Figure 1 - Sample design for the survey on cross-border transactions by non- financial and insurance firms
(thresholds for turnover in millions of euros– year 2015)



2.3 Data collection and the TTN questionnaire

Data on non-financial transactions are collected on a quarterly basis; the firms included in the sample must report the information contained in the TTN questionnaire within the end of the month following the reference quarter. As a rule, transactions must be recorded in the quarter in which the service is supplied, in accordance with the principle of accrual accounting.

The questionnaire is divided into four sections, dedicated to the collection of:

- details on the reporting firm;
- information on the firm's organization and balance sheet;
- contact information;
- data on transactions in services, intangible assets, unilateral transfers, wages and salaries.

2.4 Grossing-up factors

To determine the total aggregates, a separate ratio estimator was chosen, using turnover (X) as the auxiliary variable, according to the following expression:

$$\hat{Y}_{qs} = \sum_{h=1}^L \frac{\hat{Y}_h}{\hat{X}_h} \cdot X_h$$

where:

\hat{Y}_{qs} is the separate ratio estimator of total non-financial transactions;

X_h is total turnover in the population for stratum h ;

\hat{X}_h is total turnover in the sample for stratum h ;

The variance of the estimator is given by:

$$v(\hat{Y}_{qs}) = \sum_{h=1}^L N_h^2 \cdot \frac{1-f_h}{n_h} \cdot \frac{\sum_{i=1}^{n_h} (y_{hi} - \hat{R}_h \cdot x_{hi})^2}{n_h - 1}$$

where:

y_{hi} is the total of non-financial transactions reported by firm i in stratum h ;

$$\hat{R}_h = \frac{\hat{Y}_h}{\hat{X}_h};$$

X_{hi} is the turnover of firm i in stratum h ;

Each firm in the sample is associated with a grossing-up factor that essentially indicates the number of firms in the population that it represents. Every quarter, as new data are collected, the weights are recalculated based on the number of firms that actually submitted their reports.

As the main objective of the survey is the compilation of the balance of payments, it was conceived to guarantee the accuracy of the individual estimates on a quarterly basis (at least). On the contrary, the reference period for the information stored in the REX database is the solar year; estimations are reliable for the couple 'type of transaction'/'counterpart area', but their accuracy may significantly diminish when more dimensions are added to the couple 'type of transaction' / 'counterpart area'.